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**SUICIDAL IDEATION IN A NON-CLINICAL SAMPLE:
CROSS-SECTIONAL AND LONGITUDINAL RELATIONSHIPS WITH MINOR
STRESSORS, DEPRESSION, HOPELESSNESS AND COPING BEHAVIOUR.**

A thesis presented in partial fulfilment of
the requirements for the degree of Doctor of Philosophy
in Psychology at Massey University.

GRAEME REX BEAUMONT

1994

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ABSTRACT

The intention of this study was to gain a greater understanding of the way minor stressors, depression, hopelessness and coping behaviour relate to suicidal ideation in a non-clinical sample. Little is known about the mechanisms through which minor stressors impact on suicidal ideation. This study examined the roles of depression and hopelessness as potential mechanisms through which minor stressors could influence suicidal ideation. The way a person copes with stress affects health outcomes but this has yet to be demonstrated with suicidal ideation. This study examined the influence coping behaviour has on the relationship between minor stressors and suicidal ideation. The mechanisms through which coping behaviour impacts on suicidal ideation are largely unknown. Therefore, the possibility that coping behaviour interacts with minor stressors to influence depression and hopelessness and thus suicidal ideation was investigated. The use of prospective research designs in the study of suicidal ideation is rare, but longitudinal validation of cross-sectional findings is important in furthering our understanding. This study also examined whether the hypothesised relationships between current suicidal ideation and minor stressors, depression, hopelessness and coping behaviour extended to the prediction of further suicidal ideation.

The subjects were 402 undergraduate university students who volunteered to complete measures of suicidal ideation, minor stressors, depression, hopelessness and coping behaviour on two occasions five months apart.

The results showed that minor stressors, depression, hopelessness and emotion-focused coping were all correlated with suicidal ideation. Depression and hopelessness, however, were the best predictors of suicidal ideation. Depression was a better predictor than hopelessness, and also mediated the relationship between minor stressors and suicidal ideation. Emotion-focused coping interacted with minor stressors to modify their relationship with suicidal ideation and depression. In both cases the greater use of emotion-focused coping to deal with high levels of stressors, was associated with higher levels of suicidal ideation and depression. The findings for current suicidal ideation generally did not extend to the prediction of further suicidal ideation. Prior suicidal ideation proved to be the best predictor of later suicidal ideation. Concurrent levels of minor stressors, depression, hopelessness and coping behaviour were better predictors of further suicidal ideation than were their prior levels.

The results suggest that depression is more important than hopelessness in predicting current suicidal ideation in non-clinical samples. Depression is the mechanism through which minor stressors influence current suicidal ideation and coping behaviour impacts on suicidal ideation through its influence on the relationship between minor stressors and depression. Further suicidal ideation appears to be influenced more by the concurrent states of minor stressors, depression, hopelessness and coping behaviour, than by their prior states. The implications of these results are discussed in relation to the development of an interactive model of suicidal ideation, and suggestions for future research are made.

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CHAPTER ONE

General introduction to suicidal ideation

1.1 Suicidal behaviour

Suicide is the act of intentionally taking one's own life. Its existence has been noted since pre-Christian times with instances of suicide recorded in both the Old and New Testaments (Balon, 1987). It is present in all cultures and is postulated to exist in other mammals such as lemmings and whales (Barraclough, 1987) and insects such as pea aphids (McAllister & Roitberg, 1987).

Across time and cultures suicide has been viewed as a sin; a social disease; a form of mental illness and often an immoral and illegal act. In some eastern countries and older civilisations, such as the Roman Empire, it was seen as an honourable death (Hatton & Valente, 1984). This view is not common today and mostly suicide is culturally defined as a public health problem which should be treated or prevented (Antoniadis, 1988).

Suicide has puzzled observers over a long period of time. It has been studied by a number of disciplines including philosophy, theology, anthropology, sociology and psychology. Each of these disciplines has examined it from a different perspective, but each has contributed to our understanding. If we can understand the behaviour we can hopefully prevent or treat it.

The two disciplines which have contributed substantially to the view of suicide as a public health problem are sociology and psychology. Sociologists view

suicide as a behaviour which has its roots in social organization, with the breakdown of this organization being a major contributing factor (Durkheim, 1951). While such an approach gives some indication of what societal conditions may contribute to the development of suicide, it does not explain why many of those who experience these conditions do not commit suicide.

The contribution that psychologists make is in the understanding of individual parameters which, given the right societal and other conditions, may lead to suicidal behaviour. The study of suicide by psychologists has involved theory development (Freud, 1955; Shneidman, 1980), but in more recent times it has been driven from the realms of clinical practice and experience. Research has tended to focus on factors that differentiate those who complete suicide from those who do not.

Within psychology the study of suicidal behaviour has been confounded, to some degree, by the lack of standardized definitions. In 1972 the task force for the National Institute of Mental Health's Centre for Studies of Suicide Prevention (Beck, Davis, Frederick, et al., 1972) developed a tripartite, multiaxial classification of suicidal behaviours. This system is not dependent on legal definitions to categorize suicidal behaviour and includes suicidal behaviours other than completed suicide. The three categories defined are:

1. Completed suicide: which includes all wilful, self inflicted, life threatening acts leading to death.
2. Suicide attempt: This includes any act that has life threatening potential and intent but does not result in death.

3. Suicidal ideas: These are ideas or behaviour that suggest a possibility of a threat to the individual's life. Collectively these ideas are known as suicidal ideation (Reynolds, 1988b).

The intention of this system is to provide a systematic way of coding, defining and reporting suicidal behaviours; to aid in diagnosis and prognosis and to delineate fruitful directions for research (Beck et al., 1972; Pokorny, 1974). The categories defined by this system are widely accepted by researchers and will be employed in this study.

1.2 The study of suicidal ideation

The study of suicidal ideation has increased over the last two decades. Primarily this is because of the relationship suicidal ideation has with attempted and completed suicide.

Completed suicide is a low frequency behaviour and estimates range from a high of 63.5 per 100,000 in Hungary to 4.6 per 100,000 in Greece (Antoniadis, 1988). Attempted suicide occurs at a higher rate than completed suicide. Mishara, Baker and Mishara (1976), for instance, report that in the USA and England the rate of attempted suicide is 8-10 times that for completed suicide. Attempted suicides are at risk of eventually completing suicide (Beck, Brown, Berchick, Stewart & Steer, 1990; Beck, Brown & Steer, 1989; Beck, Steer & Trexler, 1989; Petrie, 1983). Suicidal ideation occurs at a higher frequency than attempted suicide. General population estimates of rate of occurrence range from 5.4% (Vandivort & Locke, 1979) through to 15.9% (Schwab, Warheit & Holzer, 1972). Prevalence of suicidal ideation in both clinical and general population

samples varies depending on the type of measure used. Suicidal ideation is increasingly becoming the focus of research in a number of studies and this is partially due to its occurrence being higher than that for attempted and completed suicides.

A limited amount of research has compared ideators with completed and attempted suicides. It has shown that some demographic differences exist between the three. Generally, more men than woman complete suicide, more woman than men attempt suicide, and an equal number of men and woman ideate (Harlow, Newcomb & Bentler, 1986; Rudd, 1990; Vandivort & Locke, 1979). There are many psychological characteristics such as levels of life stress, depression, hopelessness and reasons for living, however, which are common to the three groups (Linehan, 1986; Linehan, Camper, Chiles, Strosahl & Shearin, 1987; Linehan, Chiles, Devine, Laffaw & Egan, 1986; Marks & Haller, 1977). Suicidal ideators who sought professional help, however, had more similarities with completed suicides than they did with attempted suicides (Linehan, 1986). This finding seems reasonable when it is considered that some suicide attempters may not have intended to kill themselves. Suicidal ideators are by definition, individuals who are thinking about killing themselves. Their intention is therefore clear and such individuals are more likely to resemble those who have killed themselves, rather than those who are grouped into the more heterogenous group of suicide attempters. The similarity between suicidal ideators and those who complete suicide is a further reason for research focus on suicidal ideation.

Completed suicide is often viewed as the end point in a process. As part of this process suicidal ideation is thought to precede completed or attempted suicide (Meneese, Yutrzenka & Vitale, 1992) and this has also contributed to the interest in studying suicidal ideation. Bonner and Rich (1988b) comment that "suicidal behaviour may best be conceptualized as a complex process rather than a static isolated event. It is best defined as a sequence of events, that (arbitrarily) begins with suicidal ideation, which given the appropriate influence variables, precedes and leads to suicide contemplation. In turn certain influence variables cause suicide contemplation to lead to suicide planning. Finally certain variables determine when suicide plans lead to suicide attempts. From this point of view research is needed into many factors and interactions of factors that influence the dynamic process in positive and negative ways" (p.246).

If completed suicide is considered to be the end point in a process (Bonner & Rich, 1988b; Meneese et al., 1992; Zubin, 1974) then studying aspects of this process, such as suicidal ideation, will lead to an understanding of the process as a whole. Studying the early stages of the suicide process also provides possibilities for the development of early intervention and prevention programmes.

The study of suicidal ideation is, therefore, important for a number of reasons. First, its rate of occurrence in both clinical and non-clinical samples is higher than that for attempted suicide and completed suicide. Second, as a group, suicidal ideators have psychological similarities with completed suicides which means that some generalizations can be made from research on suicidal ideators to that

on completed suicides. Third, suicidal ideation is often conceptualized as being the first step in a process which could ultimately lead to completed suicide. Greater knowledge of the factors which influence suicidal ideation, therefore, could lead to more effective treatment and prevention approaches.

1.3 Areas of focus in the study of suicidal ideation

The study of suicidal ideation and the variables associated with it is crucial in furthering our understanding of the suicide process. Before considering this several areas require discussion: the types of variables which are related to suicidal ideation; whether such variables are best researched singularly or in combination; whether the type of population studied affects the relationships between these variables and suicidal ideation.

Two major types of variables are often examined in relation to suicidal ideation. These are demographic variables and psychological variables. Demographic variables provide reasonable descriptions of at-risk groups. This information is valuable when it is important to identify such groups and make interventions. In determining the type of intervention, however, such variables are of little value. Demographic variables are group descriptors, and when decisions regarding individuals are to be made, they are not of great value. Knowing an individual is male, white, middle aged and lives alone, may not be of great assistance in determining whether he presents a current risk to himself (Balon, 1987). In such a situation it is likely that psychological variables will give a greater insight into the possibility of risk. More importantly, such variables provide a greater avenue for intervention than do demographic variables. Beck and Weishaar (1990) state

"epidemiologic factors alert us to general risk categories, factors pertaining to the individual's psychological state and immediate environment are more crucial in averting suicide" (p.22). It is not possible for a person to change his or her sex, age or race, to prevent a suicide. He or she would, however, be able to change psychological factors such as cognitions related to feelings of depression or hopelessness.

Suicidal ideation is a complex behaviour which develops through the influences of a variety of different variables. Many of the attempts made to examine the associations these variables have with suicidal ideation have focused on single variable relationships. This type of research is valuable, in that it provides information about the independent associations these variables have with suicidal ideation. The causes of suicidal ideation are likely to be multi-faceted, however, and it is unlikely that any one variable can be found that causes suicidal ideation. It is more likely that a number of variables, whether they be environmental or intrapersonal, will lead to suicidal ideation. Examination of how these variables combine and inter-relate to lead to suicidal ideation will increase our understanding of this behaviour. It is imperative that further research focuses on the use of integrative frameworks to examine the associations a number of variables have with suicidal ideation. This approach will further our understanding of how such variables combine and inter-relate in their associations with suicidal ideation.

When examining psychological factors associated with suicidal ideation it is possible that relationships may vary from sample to sample. Subjects in clinical

samples are generally identified through their presentation for treatment at hospital accident and emergency wards or psychiatric wards. At this point their suicidal behaviour has reached clinical proportions. A number of suicide attempters, however, do not present to these places (Petrie, 1983; Turner, 1982), and are dealt with in other ways such as through a family doctor, friends or relatives. It is also likely that a large number of suicidal ideators do not present at traditional places of treatment. This means that clinical samples may not be representative of the suicidal ideator population in general. The data gained in such studies are relevant to those who present for treatment, but cannot necessarily generalise to those who do not present. Cole (1988) has shown that there are differences between suicidal subjects who present for treatment and those who do not. For those in the group seeking treatment, hopelessness was related to suicidal behaviour when depression and social desirability were controlled, but this was not the case in the non-treatment group. It therefore seems reasonable to study non-clinical samples, in order to gain insight into the process of suicide, before it reaches a clinical state. Such a sample allows the study of all forms of suicidal behaviour including those which remain untreated. It also allows the study of levels of suicidal behaviour from mild through to severe. The study of non-clinical samples, therefore, provides a wider range of information for the development of prevention options and for understanding the suicide process than that obtained through clinical samples.

The examination of psychological variables associated with suicidal ideation in non-clinical samples provides valuable information about the suicide process. It is useful to examine such variables in combination rather than singularly because

of the complex relationships and inter-relationships which exist between them and suicidal ideation.

Three different approaches have examined how psychological variables combine and inter-relate to lead to suicidal ideation and other suicidal behaviours in non-clinical samples. Each approach highlights areas of the suicide process which are worthy of further research and these will be reviewed in the following chapter.

CHAPTER TWO

Current suicidal ideation

2.1 Studies focusing on the inter-relationships between suicidal ideation and psychological variables

Three attempts have been made to develop approaches which integrate environmental and intrapersonal factors to explain the development of suicidal behaviour. They each view suicidal ideation as a crucial element in the suicide process, and primarily conceptualize suicidal behaviour as a response to stress. They examine the manner in which factors such as depression, hopelessness, problem-solving behaviour, social support and cognitive distortions, combine and interact with stress to be associated with suicidal ideation.

These approaches all view feelings of depression and hopelessness as important links between stress and suicidal ideation, but examine different factors which influence the effects of stress on these variables. Problem-solving behaviour is examined by Schotte and Clum (1982), cognitive distortions and adaptive reasons for living are examined by Bonner and Rich (1987), and social support is investigated by Rudd (1990). These three approaches to understanding the process of suicidal behaviour will be reviewed below.

2.1.1 Schotte and Clum's (1982) problem-solving model

The Schotte and Clum (1982) model is based on previous research by Clum, Patsiokas and Luscomb (1979) which addressed the stress- suicidal behaviour relationship and factors which mediate it. Clum et al. (1979) suggested that life stress interacts with cognitive rigidity and/or difficulty in problem-solving to increase the probability of attempting or committing suicide.

Schotte and Clum (1982) based their model on the findings of Clum et al. (1979) that suicidal individuals are deficient in problem-solving skills. They postulated that when these individuals encountered stressful or problematic situations they were unprepared to effectively perceive, generate and implement solutions to these problems. As a result these individuals were assumed to become hopeless under stressful circumstances and ultimately engage in suicidal behaviour. They examined the level of hopelessness and suicidal intent in university students and related this to experience of negative life stress and interpersonal problem-solving ability. They found that poor problem-solvers under high negative life stress were significantly more hopeless and significantly higher in suicidal intent than poor problem-solvers under low stress, good problem-solvers under high stress, and good problem-solvers under low stress. These results support the idea that problem-solving deficits play a role in the development of suicidal behaviour. Negative life stress in conjunction with poor problem-solving ability leads to feelings of hopelessness which in turn result in the development of suicidal behaviour.

These researchers also found that as level of suicidal intent increased, the importance of hopelessness relative to depression in the prediction of current suicidal intent increased. At low levels of intent, however, depression was more important than hopelessness. This suggests that at low levels of suicidal intent, depression impacts more than hopelessness on the development of suicidal ideation. This raises the possibility, which was not tested by these authors, that problem-solving ability may also influence the development of low levels of suicidal ideation through its impact on depression.

Some support for this model has been found with psychiatric patients hospitalized for suicidal ideation (Schotte & Clum, 1987). In this study suicidal ideators were found to have higher levels of negative stress and hopelessness than non-ideating matched controls, and they were also poorer problem-solvers than the controls. Dixon, Heppner and Anderson (1991) took this model a step further and examined self-appraisal of problem-solving ability and its relationship to hopelessness and suicidal ideation in a group of college students. They found that when problem-solving ability was appraised as being ineffective, this appraisal interacted with negative life stress to predict both hopelessness and suicidal ideation. This research offers further support for Schotte and Clum's (1982) model in that low appraisal of problem-solving ability, regardless of actual problem-solving skills, interacts with negative life stress to lead to the development of hopelessness, which in turn may lead to suicidal ideation.

Taken together these studies suggest that suicidal ideators are poor problem-solvers either through skill deficit and/or an appraisal that their problem-solving

skills are ineffective. Poor problem-solving ability interacts with stress to lead to depression and hopelessness. Finally, at low levels of suicidal ideation, depression rather than hopelessness appears to be an important predictor of suicidal ideation, but with high levels of suicidal ideation the reverse appears to be the case.

2.1.2 Bonner and Rich's (1987) stress/vulnerability model

Bonner and Rich (1987) have developed a stress/vulnerability model which proposes that certain intrapersonal and social factors combine to make an individual vulnerable to experiencing suicidal behaviour in stressful situations. Some Individuals are considered to have a cognitive trait which is thought to reduce their ability to develop alternative solutions to immediate problems. This trait, termed cognitive rigidity, interacts with stress to lead to low levels of depression and suicidal ideation. It is thought that if an individual also has poor confiding relationships with others and is experiencing loneliness then these factors will interact with the low levels of depression and suicidal ideation to lead to feelings of hopelessness and therefore higher levels of suicidal ideation. Finally, individuals who are experiencing hopelessness and also have few adaptive reasons for living are likely to overtly act on their thoughts of suicide.

In order to test this model Bonner and Rich (1987) identified three superordinate variables which are combinations of the above variables. They are (1) social/emotional alienation which is a combination of depression, loneliness, hopelessness and perceived interpersonal problem-solving ineffectiveness; (2) cognitive distortions, which is a combination of cognitive rigidity and irrational

beliefs; (3) deficient adaptive resources which is a combination of reasons for living and family cohesiveness. These superordinate variables were called "component" factors and each was shown to have some utility in predicting suicidal behaviour. The social/emotional alienation factor and the deficient adaptive resources factor were stable predictors of all suicidal behaviour from low to high ideation and suicide attempts. The cognitive distortions factor, on the other hand, became a salient predictor at moderate levels of suicidal ideation and remained relatively stable throughout increasing degrees of suicidal behaviour.

These component factors are considered to make an individual vulnerable to the development of suicidal behaviour in stressful situations. The nature of their interaction with stress and the predictive validity of this model were examined in a longitudinal study of undergraduate university students (Bonner & Rich, 1988b). They found that two of the component variables, social/emotional alienation and deficient adaptive resources, accounted for 24 percent of the variance in suicidal ideation at follow-up. Stress was measured only at follow-up but accounted for a further five percent of the variance in suicidal ideation. The interaction between stress at follow-up and the three component variables at initial testing, did not significantly contribute to the variance in suicidal ideation. These results do not support a stress-vulnerability model of suicidal behaviour. They suggest a modified model in which the component variables combine with stress, in a cumulative sense, to account for the production of suicidal ideation. Some support was found for the stress-vulnerability model, however, in a prison inmate sample (Bonner & Rich, 1990). They found that irrational beliefs, which form part of the cognitive distortions component variable, and loneliness, which

forms part of the social/emotional alienation component, each interacted with prison stress to predict suicidal ideation. Taken together the results of these two studies (Bonner & Rich, 1988b, 1990), suggest that the component factors interact with current stress to predict current suicidal ideation but that this does not extend to the prediction of future suicidal ideation. The results of these studies suggest that a combination of the component variables and stress best predicts future suicidal behaviour.

This model continues to be researched. It provides an integration of both social and psychological variables in an attempt to explain the development of suicidal behaviour. This model originally outlined a number of interactions between stress and the component variables that were thought to lead to suicidal behaviour. Not all of these have been tested but indications are that stress does interact with some of the component factors to produce current suicidal ideation. This model does not extend to the prediction of future suicidal ideation, however, and to date it appears that a cumulative combination of the component variables and stress is the best predictor of future suicidal ideation.

These authors have not focused on how individuals actually deal with stress and what effect this may have on the development of suicidal ideation as Schotte and Clum (1982, 1987) did with problem-solving behaviour. They have highlighted, however, that a perceived deficiency in adaptive resources is associated with suicidal ideation. Finally this model is the only one which has been examined using a prospective research design. The follow-up period was relatively short, however, and they did not measure suicidal ideation at initial testing. It is

possible that some people were ideating at this time and the severity of ideation may have increased or decreased over the six week follow-up, but these authors would not have been able to measure this possibility. They would also not have been able to examine the extent to which previous suicidal ideation was an influence in the development of further suicidal ideation.

2.1.3 Rudd's (1990) psychosocial integrative model

In an attempt to clarify some of the relationships between demographic variables, life stress, depression, hopelessness, social support and suicidal ideation, Rudd (1990) developed an integrative model of suicidal ideation. This model maintained that the relationship between life stress and suicidal ideation was mediated by depression and hopelessness. In this model perceptions of social support from both family and friends are thought to moderate the effects of stressful life events. This support is thought to be most useful in reducing psychological distress during times of high stress, but has minimal effect on psychological distress during periods of low stress.

In order to test this model, Rudd (1990) conducted a cross-sectional study with a large sample of university students. He found that life stress predicted both depression and hopelessness and that both of these variables mediated the relationship between life stress and suicidal ideation. Contrary to expectations, high levels of perceived social support from friends coupled with low levels of support from family resulted in more intense ideation in times of stress. This suggests that family support is more crucial than support from friends in "buffering" the effects of stress on suicidal ideation.

This model highlights the importance of social support in modifying the effects of stress on psychological outcome. It clearly indicates that in a non-clinical sample both depression and hopelessness mediate the relationship between stress and suicidal ideation. Finally it supports the findings of Schotte and Clum (1982) that depression is a better predictor than hopelessness of low levels of suicidal ideation. This model, however, is lacking in that it acknowledges the importance of environmental stress but it does not acknowledge any attempts an individual might make to deal with this stress. It also does not clarify the mechanisms by which social support influences suicidal ideation. It could be assumed that social support might modify the relationship that stress has with depression and hopelessness and influence suicidal ideation through these variables. This is not made explicit in this model and could be considered a weakness. In comparison with the previous two models this model does not appear to hold much potential for substantially furthering the understanding of suicidal ideation. While it has made an attempt to integrate environmental and intrapersonal factors, it has not included attempts to deal with stress (Schotte & Clum, 1982, 1987), nor has it included traits such as cognitive rigidity (Bonner & Rich, 1987) which are likely to interact with stress and modify its relationship with suicidal ideation.

Summary

The three models have all examined how various psychological variables combine and inter-relate to be associated with suicidal ideation in non-clinical samples. They have highlighted that of the variables examined, the relationships between stress, depression and hopelessness appear to be important. The combination of

these variables accounts for a large and significant proportion of the variance in suicidal ideation. In non-clinical samples depression appears to have a greater association than hopelessness or stress with suicidal ideation. It also appears likely that both depression and hopelessness mediate the relationship between stress and suicidal ideation in non-clinical samples.

Each of the models has also examined other variables which interact with stress to predict suicidal ideation. Rudd (1990) has looked at social support, Schotte and Clum (1982, 1987) have examined problem-solving and Bonner and Rich (1987, 1988b, 1990) have explored social/emotional alienation, cognitive distortions and adaptive resources for living. None, however, has looked at how coping behaviour might modify the relationship between stress and suicidal ideation in non-clinical samples. How a person deals with stress is crucial in determining the outcome of that stress. It is possible that the manner in which a person copes with stress may influence the development of suicidal ideation.

The majority of these studies have focused on testing their models concurrently. Only one study (Bonner & Rich, 1988b) examined the proposed relationships between variables prospectively. The nature of data collection in this study, however, precluded the possibility of examining the long-term predictive power of stress or current suicidal ideation. The exclusion of a measure of stress at initial data collection also excluded the possibility of examining the impact stress had on further suicidal ideation through its influence on other variables such as depression or hopelessness. While this study does have weaknesses in its design it remains the only attempt to investigate the predictive validity of a proposed

model. The extension of concurrent research findings to the prediction of further suicidal ideation is an area which has received little attention. This is unfortunate because such an extension would allow possible causative relationships to be explored.

2.2 Psychological variables associated with suicidal ideation

The approaches of Schotte and Clum (1982), Bonner and Rich (1987) and Rudd (1990) have highlighted the importance of stress, depression and hopelessness in the development of suicidal ideation. It seems possible that stress impacts on suicidal ideation by activating depression and hopelessness. None of the above approaches has examined the influence coping behaviour has on the relationship between stress and suicidal ideation. It seems possible, however, that coping behaviour could influence suicidal ideation through its effect on the relationships stress has with depression and hopelessness. It is also possible that coping behaviour could have a direct effect on the relationship between stress and suicidal ideation. The individual relationships between each of these variables and suicidal ideation has been examined in a number of studies and the nature of these relationships is relatively clear. This specific group of four variables, however, has not been examined collectively in relation to suicidal ideation. How they combine and inter-relate to be associated with suicidal ideation in a non-clinical sample is not clear from the previous research. Clarifying this issue will assist in understanding the process which leads to suicide. The current research which investigates the relationships these four variables have with suicidal ideation will be reviewed in following sections.

2.2.1 Suicidal ideation and depression

A large body of literature exists which examines the relationship between depression and all forms of suicidal behaviour. Depression has been shown to be closely associated with attempted and completed suicides (Beck, 1967; Brent, Perper, Kolko & Goldstein, 1988; Carlson & Cantwell, 1982; Crumley, 1979;

Fowler, Tsuang & Kronfol, 1979; Robbins & Alessi, 1985; Silver, Bohnert, Beck & Marcus, 1971). These studies show that groups exhibiting such behaviours have higher levels of depression than non-suicidal control groups. Depression comprises approximately 70 percent of diagnoses in those who complete suicide (Barracough, Bunch, Nelson & Sainsbury, 1974) and has a moderate positive correlation with suicidal behaviour ranging from .30 to .65 (Bedrosian & Beck, 1979; Goldney, 1981).

Studies of depressed samples have produced findings consistent with those of suicidal groups. In adult psychiatric populations and in particular those with an affective disorder or who exhibit depressive symptomatology, approximately 15 percent complete suicide (Barracough et al., 1974; Guze & Robins, 1970; McHugh & Goodell, 1971; Pokorny, 1974;). Approximately 35 percent of clinically depressed samples will attempt suicide and/or have a past history of attempts (Bulik, Carpenter, Kupfer & Frank, 1990; Van Praag & Plutchik, 1988). The risk of suicide is increased both during (Guze & Robins, 1970) and immediately after a depressive episode (Fawcett et al., 1987) but decreases as recovery from depression occurs (Overholser, Miller & Norman, 1987).

The relationship between depression and suicidal ideation has also been examined in a number of studies. In non-clinical samples depression has been shown to be an important correlate of suicidal ideation (Bettes & Walker, 1986; Bonner & Rich, 1987, 1988b, 1990; Connell & Meyer, 1991; De Man, Leduc & Labreche-Gauthier, 1992, 1993; Harlow et al., 1986; Meneese et al., 1992; Schotte & Clum, 1982, 1987; Smith & Crawford, 1986; Reynolds, 1987b,

1988a, 1988b; Rich & Bonner, 1987; Rudd, 1990; Vandivort & Locke, 1979). The results of these studies are consistent with those of attempted suicide and completed suicide groups. Suicidal ideators have higher levels of depression than non-ideators. There is also a moderate positive correlation between depression and suicidal ideation ranging from .40 to .61. Three of these studies (De Man et al., 1992; Rich & Bonner, 1987; Schotte & Clum, 1982) also reported that depression accounted for between 21 percent and 40 percent of the variance in suicidal ideation in non-clinical student samples.

It is also evident that not all suicidal ideators are depressed and not all depressed people exhibit suicidal ideation. Vandivort and Locke (1979), reporting on a sample of 3935 general population subjects, found suicidal ideators to be more depressed than non-ideators. They also found that 53 percent of the males and 33 percent of the females who reported ideation showed little, if any, depressive symptoms. Further to this, 77 percent of those who reported high levels of depression did not report any thoughts of suicide. A similar finding is reported by Reynolds (1987b, 1988a, 1988b) in a sample of 845 adolescents. Suicidal ideation was related to depression, but there were a number of adolescents who exhibited significant suicidal ideation but low levels of depressive symptoms.

The fact that not all suicide ideators are depressed, and not all depressed people exhibit suicidal ideation suggests that other variables are involved in the development of suicidal ideation. Negative thoughts about the future or hopelessness have been suggested as being crucial in the development of all

forms of suicidal behaviour. The research related to suicidal ideation and hopelessness will be examined in the next section.

2.2.2 Suicidal ideation and hopelessness

The cognitive theory of depression developed by Beck and his colleagues (Beck, 1963, 1967; Beck, Rush, Shaw & Emery, 1979) proposes three basic elements contribute to the cognitive component of depression. These elements are a set of negative attitudes towards the world, the self and the future. Collectively these attitudes are called "the cognitive triad" and are seen as characteristic of the thinking of depressed people.

Depression has been closely linked with all forms of suicidal behaviour. According to Beck et al. (1979) the cognitive component of depression which mostly contributes to suicidal behaviour is a negative view of the future or hopelessness. A large number of studies have shown that hopelessness is positively correlated with suicidal behaviours (Bagley & Ramsay, 1985; Bonner & Rich, 1987; Connell & Meyer, 1991; Goldney, Winefield, Tiggeman, Winefield & Smith, 1989; Holden, Mendonca & Serin, 1989; Linehan & Nielson, 1981; Papa, 1980; Petrie, 1983; Reynolds, 1988b; Rich & Bonner, 1987; Schotte & Clum, 1987, 1982). Suicide attempters have been shown to have higher levels of hopelessness than non-attempters (Topol & Reznikoff, 1982). Similar findings are also apparent when suicidal ideators are compared with non-ideators (Schotte & Clum, 1987; Wetzel, 1976). Further studies have found that completed suicides are predicted by previous levels of hopelessness (Beck, Brown & Steer, 1989; Beck, Steer, Kovacs, & Garrison, 1985).

These studies consistently show that hopelessness has a close association with all forms of suicidal behaviour. The findings are consistent across age groups and in both clinical and non-clinical samples.

The relationship between depression, hopelessness and suicidal behaviour has been examined in a number of studies. For both completed suicide (Beck et al., 1985, 1989) and attempted suicide (Beck, Kovacs & Weissman, 1975; Dyer & Kreitman, 1984; Petrie, 1983; Silver et al., 1971; Wetzel, 1976), the key factor which links depression to these behaviours has been shown to consistently be negative thoughts about the future. The consistency of this relationship, however, does not extend to suicidal ideation.

Studies examining suicidal ideators from clinical samples generally support the results found with other suicidal behaviour groups (Beck et al., 1975; Holden et al., 1989; Petrie, 1983). Those using non-clinical samples, such as high school or university students on the other hand, do not support these findings (Bagley & Ramsay, 1985; Bonner & Rich, 1987; Cole, 1988, 1989; Reynolds, 1988b; Rich & Bonner, 1987; Schotte & Clum, 1982; Weishaar & Beck, 1992). Generally, results from these studies have shown that depression has a higher correlation than hopelessness with suicidal ideation and when hopelessness is statistically controlled, depression continues to maintain a significant correlation with suicidal ideation. This indicates, that in non-clinical samples, hopelessness is not a key factor linking depression with suicidal ideation.

Attempts have been made to explain the differences between clinical and non-clinical ideators. It is possible that the relationship between depression, hopelessness and suicidal ideation may be dependent on age. Cole (1989) has suggested that hopelessness may be qualitatively different in adolescents than in adults. He argues that high levels of hopelessness in adolescents may be reduced through a belief that upcoming life events such as leaving school or home, may bring positive changes in the future. While this may be true, it may further suggest that reduced levels of hopelessness in these samples, rather than age per se, accounts for the differences between clinical and non-clinical ideators.

Others have argued that the relationship between depression, hopelessness and suicidal ideation in non-clinical samples is dependent on level of suicidal intent, or the strength of the desire to die (Schotte & Clum, 1982; Weishaar & Beck, 1992). These researchers found that as level of suicidal intent increased in a university student sample, hopelessness became more salient than depression as a predictor of suicidal ideation. This idea is further supported by Cole (1988) who separated a university student sample into two groups, one seeking treatment at a psychology clinic and one not. For those seeking treatment, the expected relationship between hopelessness, depression and suicidal ideation held, but in the non-treatment group it did not. Those students seeking treatment had significantly higher levels of suicidal ideation than those not seeking treatment. It seems reasonable to expect level of ideation to increase as level of intent increases, because suicidal intent is one component of suicidal ideation. Therefore the relationship between depression, hopelessness and suicidal

ideation may also be a function of ideation level and not level of intent alone. Clinical samples are likely to have higher levels of suicidal behaviour and ideation than non-clinical samples and this may account for the differences which have been found.

The possibility that hopelessness only becomes influential in the relationship between depression and suicidal ideation when the level of suicidal ideation approaches that of clinical samples has not been examined in non-clinical samples. The relative importance of hopelessness and depression in relation to suicidal ideation in non-clinical samples is therefore an area which requires further research.

2.2.3 Suicidal ideation and stress

Suicidal behaviour is often conceptualized as a response to stress and this relationship has been well documented in the literature. Past traumatic events have been identified as being related to suicidal behaviour. For instance, early parental loss and a resultant unstable family environment are associated with suicide attempts in adolescents (Adams, Bouckoms & Scarr, 1980; Friedrich, Reams & Jacobs, 1982) young psychiatric patients (Asarnow, Carlson & Guthrie, 1987) and with suicidal ideation in university students (Wright, 1985) and in the general population (Bagley & Ramsay, 1985). These events have often occurred many years prior to the development of suicidal behaviour and their significance in the etiology of suicidal behaviour remains unclear. More recent major life events such as the loss of a loved one, serious illness and unemployment, however, have a clearer connection with suicidal behaviour. Retrospective

research has shown that those who complete suicide experience more negative major life events than control groups (Hagnell & Rorsman, 1980; Motto, Heilbron & Juster, 1985) and that suicide attempters experience more major life events in the six months prior to their attempt than non-attempting controls (Cochrane & Robertson, 1975; Jacobs, 1971; Paykel, Prusoff & Myers, 1975; Spirito, Brown, Overholser & Fritz, 1989). Suicidal ideators have also been found to experience more major life events than non-ideators (Adams, Lohrenz & Harper, 1973; Bonner & Rich, 1987, 1988b, 1990; Cole, Protinsky & Cross, 1992; Harlow et al., 1986; Rich & Bonner, 1987; Schotte & Clum, 1982, 1987). Finally, in non-clinical samples negative major life events have been shown to predict current suicidal ideation (Bonner & Rich, 1987, 1988b, 1990; Harlow et al., 1986; Schotte & Clum, 1982, 1987).

This research indicates that negative major life events are important predictors of all forms of suicidal behaviour. To date almost all of the research investigating the relationship between stress and suicidal ideation has focused on major life events. These events, however, are not the only source of stress in an individual's life. A useful avenue of enquiry, therefore, may lie in the examination of the relationship different sources of stress have with suicidal behaviour. Lazarus and Folkman (1984) have suggested that major life events influence psychological outcome primarily by increasing the day-to-day difficulties that an individual experiences. For instance, the loss of a job may result in an increase in the daily worry about financial concerns. These daily difficulties are less severe but more frequent than major life events and are considered to be minor stressors. They have been shown to mediate the relationship between major life

events and both physical and psychological health (DeLongis, Coyne, Dakof, Folkman & Lazarus, 1982; Weinberger, Hiner & Tierney, 1987). It may also be the case that, in the absence of major life events, an accumulation of minor stressors may contribute to negative outcomes. For instance, financial difficulty may result in an increase in unpaid debts, which may result in increased contact with debt collectors, and ultimately legal action. This combination of minor stressors could conceivably result in a decline in physical and mental health. There is some research evidence that minor stressors are better predictors than major life events of psychological and physical outcome (Chamberlain & Zika, 1990; Weinberger et al., 1987), which supports the argument that minor stressors are an important additional source of stress that affects health outcomes. Further support comes from a recent study (Dixon, Rumford, Heppner and Lips, 1992), which investigated the relationship between major life events, minor stressors and suicidal ideation. The results of this study suggest that minor stressors predict suicidal ideation independently of major life events.

The above research suggests that major life events are an important source of stress which for many individuals is related to suicidal behaviour. For others, however, minor stressors such as household tasks and work commitments may be an independent source of considerable psychological distress which is also related to suicidal ideation (Dixon et al., 1992). Little is known about the relationship between minor stressors and suicidal ideation or the variables which influence this relationship. The results of the only study to have examined this relationship (Dixon et al., 1992), suggest that minor stressors impact on suicidal ideation to the extent that they activate hopelessness. These authors, however,

did not examine the influence that other variables may have had on the relationship between minor stressors and suicidal ideation. It is known that the way an individual deals with stress can influence the relationship that stress has with eventual outcome.

There is a growing conviction in the literature that the manner in which an individual copes with stress will effect the outcome of that stress (Folkman, Lazarus, Pimley & Novacek, 1987). At a theoretical level, coping behaviour is viewed as being an integral part of the stress process (Lazarus & Folkman, 1984; Pearlin & Schooler, 1978). It is generally defined as cognitive and behavioural efforts to manage specific external and or internal demands that are appraised by the individual as taxing or exceeding their resources (Lazarus & Folkman, 1984). The mechanisms by which coping behaviour is linked to psychological outcome in the stress process are complex. There is some evidence that coping behaviour interacts with stress to moderate the effects of stress on outcome (Aldwin & Revenson, 1987; Billings & Moos, 1984; Pearlin, Lieberman, Menaghan & Mullan, 1981). This suggests, therefore, that the relationship which minor stressors have with suicidal ideation could be modified by the way in which an individual deals with them. Issues related to stress, suicidal ideation and coping behaviour will be examined in the next section.

2.2.4 Suicidal ideation and coping behaviour

Coping behaviour has been defined in various ways, but mostly it is agreed that it refers to behavioural and cognitive efforts to manage specific external and or internal demands that are appraised by the individual as taxing or exceeding their resources (Lazarus & Folkman, 1984). Some authors suggest that there is some stability in the way individuals cope with a variety of stressful situations (Billings & Moos, 1984; Carver, Scheier & Weintraub, 1989; Endler & Parker, 1990; Fleischman, 1984; Miller, Brody & Summerton, 1988). Endler and Parker (1990) state that "there is evidence that the range of coping behaviours can be conceptualized along a limited number of dimensions... and that individuals frequently have coping preferences, engaging in particular behaviours across different situations" (p. 846). The assumption underlying this view is that the way a person copes with one or more stressful events will be representative of the way that person copes with stressful events in general (Folkman, Lazarus, Gruen & DeLongis, 1986). It is therefore possible that the way an individual actually copes with a major life event, will be representative of his or her attempts to cope with minor stressors. A coping dimension consists of a number of specific coping actions thought to represent that dimension. While an individual may have a preference for the use of a particular dimension or dimensions of coping it is possible that there will be variability in the use of particular coping actions within such a dimension. For instance an individual may rely on a specific coping action such as talking to others about the problem and this may result in less need to use other actions within the same dimension.

There is general agreement in the literature that there are two foci of coping behaviour, problem-focused and emotion-focused (Endler & Parker, 1990). Billings and Moos (1985) define emotion-focused coping as functions oriented toward managing stress-related emotions and maintaining affective equilibrium. They define problem-focused coping as behavioural responses which modify or eliminate the source of stress or its consequences by dealing with the reality of the situation.

Both foci of coping have been identified consistently in a number of studies (Billings & Moos, 1981, 1984; Carver et al., 1989; Folkman & Lazarus, 1984; Pearlin & Schooler, 1978). The consistency of their identification suggests that these broader dimensions may form stable styles of coping which are used in a variety of situations. In many situations both styles of coping are used to a greater or lesser degree. Lazarus and Folkman (1984) report that it is rare to find situations in which only one style of coping is used.

Coping behaviour has not been considered very widely in the context of suicidal behaviour and only three studies have examined coping styles in suicidal individuals. All three (Puskar, Hoover & Miewald, 1992; Scholz & Pfeffer, 1987; Thomssen & Moller, 1988) examined the general style of coping actually used to deal with a particular event and how this style was subsequently related to suicidal behaviour.

Thomssen and Moller (1988) examined the coping styles of 50 suicide attempters and compared them with those of a non-attempting control group.

They hypothesised that the suicide attempters would use coping strategies to deal with stress which were considered to be ineffective. Specifically they suggested that an unbalanced coping strategy, utilizing more emotion-focused coping behaviour than problem-focused behaviour or vice versa, to deal with stress, would lead to suicidal behaviour. Their results showed that attempted suicides used significantly more emotion-focused coping strategies than the control group. In an analysis of individual coping strategies they also found the attempted suicides used more coping strategies considered to be ineffective such as resigned wishful thinking, denial, avoidance behaviour and self blame. The main implication of these findings is that suicidal individuals have a tendency to use more emotion-focused styles of coping than problem-focused styles.

Scholz and Pfeffer (1987) found no specific coping pattern for either their attempted suicide group or a control group of depressed patients. They did discover, however, that attempted suicides approached stressful situations in a less problem-oriented and a more emotional way than the depressed group. A recent study by Puskar et al. (1992) found that adolescents hospitalised for suicidal behaviours used affectively-oriented coping methods more than problem-oriented coping methods. These findings are further suggestive of the greater use of emotion-focused rather than problem-focused coping in those experiencing suicidal behaviour. Support for this conclusion also comes from two other bodies of research. These are the relationship between problem-solving behaviour and suicidal behaviour, and the relationship between coping behaviour and depression. Both these areas will be briefly reviewed below.

Most investigations of how suicidal individuals deal with stress have focused primarily on problem-solving behaviour (Spirito et al., 1989). The evidence that suicidal individuals have difficulty in adequately identifying problems and corresponding solutions is reasonably strong (Curry, Miller, Waugh & Anderson, 1992; Dixon et al., 1991; Linehan et al., 1986; Weishaar & Beck, 1992). These difficulties are considered to be problem-solving deficits and have been observed in suicidal samples of all ages (Curran, 1987; Khan, 1987). Further to this, Schotte and Clum (1982, 1987) and Schotte, Cools and Payvar (1990) propose that interpersonal problem-solving deficits represent a personality trait which under conditions of high stress could make an individual vulnerable to thoughts of suicide. In these studies, poor problem-solvers who were also experiencing high stress had significantly higher levels of hopelessness which lead to higher levels of suicidal intent than in the control groups. Therefore problem-solving deficits interact with stress to modify the relationship this stress has with hopelessness and this leads to suicidal behaviour.

Problem-focused coping is considered to encompass active behavioural responses which are used to deal with stressful situations. It could not be considered to be synonymous with problem-solving behaviour which includes active behavioural responses to change a problematic situation but also includes strategies geared to change an individuals emotional reaction to a problem (Nezu, 1987). Problem-focused coping, however, could be considered to be a subset of problem-solving behaviour and therefore the above studies suggest that suicidal individuals tend to have either, deficits in problem-focused coping, or use it less frequently to deal with stress. They would further suggest that problem-focused

coping would interact with stress to modify the relationship this stress had with suicidal ideation.

The view that suicidal individuals use problem-focused coping to a lesser extent than emotion-focused coping is also supported by the research on coping and depression. A number of researchers have shown that depressed individuals tend to use more emotion-focused coping behaviours, such as wishful thinking and avoidance, than problem-focused coping behaviours. Folkman and Lazarus (1986) studied 75 community-residing married couples over a five month period. They found that those with high levels of depressive symptoms were more likely to use "confrontative coping" and escape-avoidance strategies than those with low levels of symptoms. The greater use of emotion-focused coping, therefore, was associated with high levels of depression. If problem-focused coping is used more than emotion-focused coping to deal with stress, however, depression levels appear to be lower. Mitchell, Cronkite and Moos (1983) compared 157 control couples with 157 couples where one of the partners was clinically depressed. Their results suggested that the greater use of problem-focused coping was related to less severe depression for both depressed patients and their partners. The association between problem-focused coping and less severe depression has been noted in a number of other studies. These include depressed patients previously under treatment (Billings & Moos, 1985), depressed patients seeking treatment at various outpatient facilities (Billings & Moos, 1984), and depressed psychiatric patients matched with non-depressed controls (Billings, Cronkite, and Moos, 1983).

Taken together, these studies suggest that the use of emotion-focused coping is higher in depressed people than in non-depressed people. The use of problem-focused coping, however, appears to be associated with less severe symptoms and perhaps acts in a protective manner decreasing the possibility of more serious outcomes. Given the close association between depression and suicidal ideation it seems likely that similar patterns of coping use will be evident in suicidal ideation populations.

Summary

Coping behaviour is an integral part of dealing with stress and can potentially modify the effects of stress on mental health outcome. The relationship between stress, suicidal ideation and coping behaviour in a non-clinical sample has not to date been directly examined. The research discussed above suggests, however, that suicidal ideators are likely to use predominantly emotion-focused styles of coping to deal with stress. It further suggests that suicidal ideators are likely to have either deficits in problem-focused coping, or inhibit its use in times of stress. Overall, the indications are that these two foci of coping behaviour could interact with stress to modify the relationship this stress has with suicidal ideation and this is an area that requires further research.

CHAPTER THREE

Further suicidal ideation

3.1 Introduction

The previous chapter has reviewed the relationships that stress, depression, hopelessness and coping behaviour have with suicidal ideation assessed at the same time. These studies all used a cross-sectional research strategy. The relationships found suggest that minor stressors may impact on suicidal ideation through their effect on depression and hopelessness. It is also possible that the focus of coping an individual prefers to use to deal with these stressors may have an impact on the development of suicidal ideation. Whether such possibilities extend to the prediction of further suicidal ideation requires investigation. This chapter will review research taking a prospective research strategy, and provide indications of the relationships minor stressors, depression, hopelessness and coping behaviour have with further suicidal ideation.

3.2 Psychological variables associated with further suicidal ideation

The use of prospective research designs in the study of suicidal behaviour is not common. Only three studies have looked at psychological variables associated with further suicidal behaviour in clinical samples. Two of these (Beck et al., 1985, 1989) focused on completed suicide and the other (Petrie, Chamberlain & Clarke, 1988) focused on attempted suicide and suicidal ideation. Beck et al. (1985) followed up a sample of 207 psychiatric patients hospitalized for suicidal

ideation, 5-10 years after their first admission. They found that, of all the information collected on admission, only the Hopelessness Scale scores and the pessimism item on the Beck Depression Inventory predicted eventual suicides. A score of 10 or more on the Hopelessness Scale correctly identified 91 percent of the eventual suicides. False positives, however, made up 86 percent of those identified using this cutoff score. This would reduce the practical utility of the hopelessness scale as a clinical tool for predicting further suicidal behaviour in individual patients. A clinical rating scale was used to assess the severity of hopelessness in 141 patients in this sample. Analysis of this data (Beck et al., 1989) indicated that the mean hopelessness rating for those who eventually committed suicide was significantly higher than the mean rating for those who did not commit suicide. These results support the earlier findings that self-rated hopelessness is related to eventual suicide. Petrie et al. (1988), using a group of hospitalized suicide attempters, found that hopelessness was a better predictor of suicidal ideation six months later than either depression or suicidal ideation at initial testing. These three studies indicate that hopelessness is a key variable which has a strong and significant relationship with both eventual suicide and further suicidal ideation in a clinical sample.

Two studies have used a prospective research strategy with non-clinical samples and focused on the relationships which psychological variables have with suicidal ideation which is measured at a later time. One of these, Bonner and Rich (1988b), has been the only study which has examined whether relationships hypothesised to exist between stress and suicidal ideation extend to the prediction of suicidal ideation at a later time. The other, Goldney, Smith,

Winefield, Tiggeman and Winefield (1991) is the only prospective study of suicidal ideation in a randomly chosen general population sample.

Bonner and Rich (1988b) used a six week follow-up in a study which examined the predictive validity of their stress-vulnerability model in a sample of undergraduate university students. They found that social/emotional alienation and deficient reasons for living at Time 1 predicted suicidal ideation at Time 2. When stress associated with midterm exams and stress associated with life events were added to the prediction equation they contributed an additional three percent to the explained variance. Bonner and Rich (1988b) did not measure these sources of stress at Time 1, however, and therefore could not determine the predictive nature of stress over time. They also did not report the predictive nature of depression at Time 1, although they did measure this variable.

Goldney et al.(1991) followed 3130 school leavers for a period of eight years. As part of a wider psychological battery of tests they measured suicidal ideation, depression, hopelessness and self-esteem in this group of adolescents. They subsequently remeasured these same variables four years later and again eight years later. At each data collection time they separated those who reported having experienced suicidal ideation in the follow-up period from those who did not. These groups were then compared on reported levels of depression, hopelessness and self-esteem at the time of measurement and at previous measurement times. Their results indicated that at both follow-up times those who reported having experienced suicidal ideation in their lives had significantly higher levels of previous depression, and hopelessness than those who did not

report suicidal ideation at follow-up. Unfortunately, Goldney et al. (1991) did not examine how these variables combined and/or interacted to predict further suicidal ideation. These results do suggest, however, that previous levels of depression and hopelessness have an association with further suicidal ideation in a non-clinical sample.

The research findings of Bonner and Rich (1988b) and Goldney et al. (1991) suggests that in non-clinical samples, social/emotional alienation and deficient reasons for living (Bonner & Rich, 1988b) and depression and hopelessness (Goldney et al, 1991) have some association with further suicidal ideation. The findings from clinical samples (Beck et al., 1985, 1989; Petrie et al., 1988) suggest that hopelessness is reliably associated with further suicidal behaviour. This provides some support for the findings of Goldney et al. (1991) that in non-clinical samples hopelessness is associated with further suicidal ideation.

None of the these studies has directly addressed the association between stress and further suicidal ideation. A number of studies, however, (Cochrane & Robertson, 1975; Hagnell & Rorsman, 1980; Jacobs, 1971; Motto et al., 1985; Paykel et al., 1975; Spirito et al., 1989) indicate that individuals who attempt or complete suicide show more stress in the preceding months than those who do not attempt or complete suicide. Suicidal ideators have also been found to experience more life stress than non-ideators (Cole et al., 1992). This research has not used a prospective research strategy but indicates that previous stressful events are associated with suicidal behaviour at a later time. Although there is a potential relationship between previous stress and further suicidal ideation,

there are many individuals who experience high levels of stress but do not think about suicide. It therefore seems possible that variables exist which in combination with stress make thoughts of suicide more likely to occur (Dixon et al., 1991). According to Beck's cognitive theory (Beck, 1963, 1967) stress is one variable which is likely to activate feelings of depression and hopelessness. These variables appear to be associated with further suicidal ideation in non-clinical samples (Goldney et al., 1991). It is possible, therefore, that stress impacts on further suicidal ideation only to the extent that it activates current depression and hopelessness.

Coping behaviour, as discussed in Chapter 2, interacts with stress to modify the relationship which stress has with psychological outcomes. This further raises the possibility that coping behaviour may also modify the relationship between stress and further suicidal ideation. It is possible that coping behaviour could act directly on the stress-further suicidal ideation relationship. Further suicidal ideation is also associated with depression and hopelessness, however, and it is possible that coping behaviour influences further suicidal ideation through its impact on the stress-further depression and stress-further hopelessness relationships. Little is empirically known about these possibilities but the present study will attempt to clarify some of these relationships in a non-clinical sample.

CHAPTER FOUR

Present study

4.1 Introduction

A wide body of research literature examines the associations a large number of variables have with suicidal behaviour. Despite this, our understanding of suicidal behaviour remains limited. The process which leads to completed suicide is a complex one and it has been argued that research efforts should focus more on the integrative function of variables associated with it, rather than examining these variables separately. Some detailed attempts have been made to do this (Bonner & Rich, 1987, 1988a, 1988b; Rudd, 1990; Schotte & Clum, 1982, 1987) with limited success. Each of these attempts has examined different sets of variables and only one has attempted to use a prospective research strategy.

Suicidal ideation has been identified as a crucial element in the process which leads to suicide. It is generally considered to be the first step in this process and therefore increasing our understanding of the relationships which psychological variables have with suicidal ideation will further our understanding of attempted and completed suicide. A greater understanding of variables which influence suicidal ideation will also assist the further development of treatment and prevention strategies for suicidal behaviour.

Attempts to validate inter-relationships found cross-sectionally have mostly been conducted through replication with different samples. For instance, Bonner and Rich (1987, 1990) have examined their stress-vulnerability model with samples

of university students and prison inmates. Schotte and Clum (1982, 1987) have examined their problem-solving model with samples of university students and psychiatric patients. Attempts to validate findings prospectively are rare in the suicidal ideation literature, and this may be due partially to the difficulty in conducting this type of research. There is a need, however, for prospective research into suicidal behaviour if our understanding of this phenomenon is to increase.

The intentions of the present study are threefold.

1. To focus on suicidal ideation in a non-clinical sample because it is generally considered to be the first step in the process which leads to attempted and completed suicide.
2. To examine the relationships minor stressors, depression, hopelessness and coping behaviour have with suicidal ideation and to examine how these variables operate in combination to predict suicidal ideation.
3. To attempt to validate these relationships prospectively by examining whether they predict further suicidal ideation.

In New Zealand, as in other Western countries, 18-24 year olds as a group have the highest rate of suicidal behaviours (Antoniadis, 1988; Taylor & Cummings, 1985). Within this age group, university students appear to be particularly at risk (Lester, Castromayor & Icli, 1991; Mishara et al., 1976; Rudd, 1989, 1990; Strang & Orlofsky, 1990). Previous studies indicate that the rate of suicidal ideation in student samples ranges from 6% through to 60% depending on how it is measured and defined (Rudd, 1989; Salmons & Harrington, 1984; Sherer,

1985; Wright, 1985). Such studies further suggest that between 8% and 15% of those experiencing suicidal ideation act on those thoughts in some way by either attempting or completing suicide (Dixon et al., 1992). Given that university students appear to be at higher risk, and that they are a non-clinical population, the present study focuses on them.

4.2 Aims of the study with regard to current suicidal ideation

The research reviewed in the previous chapters has suggested that four variables are of particular importance in examining suicidal ideation. These are stress, depression, hopelessness and coping behaviour. The relationships that these variables have with suicidal behaviour have been well documented. Each has been shown to relate positively with increased suicidal ideation and the inter-relationships between these variables and suicidal ideation in clinical samples are consistent with those found for attempted and completed suicide. There are indications that these inter-relationships differ in non-clinical samples and it remains unclear how these variables inter-relate in their association with suicidal ideation in a non-clinical sample. The research reviewed in the previous chapters suggests that stress impacts on suicidal ideation only to the extent that it activates feelings of depression and hopelessness. It is these feelings which provide fertile ground for the growth of suicidal thoughts. It is possible that the way a person deals with stress will affect the development of suicidal ideation. This may be via a direct effect on the relationship between stress and suicidal ideation but may also be through its influence on the stress-depression and stress-hopelessness relationships. It is the intention of the present study to examine these possibilities.

4.2.1 Definitions and aim 1 of the study

It is clear from past research that traumatic life events are associated with all forms of suicidal behaviour (Cochrane & Robertson, 1975; Hagnell & Rorsman, 1980; Jacobs, 1971; Motto et al., 1985; Paykel et al., 1975; Spirito et al., 1989). The minor stressors of daily living such as a person's workload, the need to do housework and amount of spare time available, may accumulate and also be associated with suicidal behaviour. These minor stressors, identified as hassles by Lazarus and Folkman (1984), are conceptualized in the present study as daily experiences which are appraised by the individual as harmful and/or threatening. These minor stressors have been shown to be associated with psychological distress, independent of life events (Chamberlain & Zika, 1990; Dixon et al., 1992).

Depression is defined in this study as an affective state, generally characterised by the presence of physical symptoms such as disturbed sleep, loss of appetite and loss of libido, combined with a set of cognitive schema identified by Beck (1963, 1967) as the cognitive triad. These schema fall into three categories, negative views of oneself, negative views of the world in general and a negative view of the future. Depression has been shown by past research to be closely associated with suicidal ideation. In non-clinical samples it has a greater association with suicidal ideation than hopelessness.

Hopelessness is defined as a series of negative expectations about the future and Beck (1963, 1967) suggests that it is the cognitive aspect of depression which accounts for the association depression has with suicidal behaviours. Past

research has shown that hopelessness does have a close association with suicidal ideation.

Individuals have been shown to consistently use two foci of coping to deal with stress. Billings and Moos (1985) have defined both foci of coping and these definitions will be used in this study. Emotion-focused coping is defined as functions oriented toward managing stress-related emotions and maintaining affective equilibrium. Problem-focused coping is defined as a set of behavioural responses which modify or eliminate the source of stress or its consequences by dealing with the reality of the situation. Both foci of coping have been shown to have an association with suicidal behaviour. The use of emotion-focused coping is generally associated with increased levels of suicidal behaviour while the use of problem-focused coping is generally associated with decreased levels.

Aim 1: Minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping, singularly have relationships with suicidal ideation. Those experiencing thoughts of suicide, therefore, are also likely to be experiencing minor stressors, feelings of depression and hopelessness and making some efforts to cope with these stressors. In such circumstances it is helpful to know the relative degree of association each of these variables has with current suicidal ideation. This study will aim to determine the relative degree of association minor stressors, depression, hopelessness and both foci of coping have with current suicidal ideation.

4.2.2 Aim 2 of the study

According to Beck's theory of depression (Beck, 1963, 1967), when an individual is depressed and views the future as dark and unchangeable, he or she may come to believe that suicide is the only option. This possibility is well supported in the research literature. In clinical samples it has been shown that the relationship between depression and all forms of suicidal behaviour is accounted for by a shared association with hopelessness (Beck et al., 1985, 1989; Petrie et al., 1988; Wetzel, Margulies, Davis & Karam, 1980). In non-clinical samples of suicidal ideators, however, this is not necessarily the case. It has been argued that the relationship between depression, hopelessness and suicidal ideation in non-clinical samples is dependent on the level of suicidal ideation. That is, the higher the level of suicidal ideation, the more the relationship between depression and hopelessness resembles that found in clinical samples of ideators. It is possible that feelings of depression have a greater impact on the development of low levels of suicidal ideation but that feelings of hopelessness have greater impact on higher levels of suicidal ideation. If this is the case then it would be expected that the relationships between suicidal ideation, depression and hopelessness would change to resemble that found in clinical samples as the level of suicidal ideation increased (Schotte & Clum, 1982).

Aim 2: This study will attempt to establish whether the relationship between depression, hopelessness and suicidal ideation in a non-clinical sample is a function of the level of ideation.

4.2.3 Aim 3 of the study

While it has been well documented that the manner in which an individual copes with stress is crucial in determining the emotional outcome of that stress (Billings et al., 1983; Billings & Moos, 1981, 1984, 1985; Mitchell et al., 1983; Pearlin et al., 1981; Pearlin & Schooler, 1978), the relationship between coping behaviour and suicidal ideation has not been explored. Some studies have examined problem-solving behaviour and suicidal ideation (Schotte & Clum, 1982; 1987); others have looked at coping behaviour and depression (Billings et al., 1983; Billings & Moos, 1984; 1985; Folkman & Lazarus, 1986; Mitchell et al., 1983); and a few studies have examined coping behaviour and suicide attempts (Puskar et al., 1992; Scholz & Pfeffer, 1987; Thomssen & Moller, 1988). These studies suggest that emotion-focused coping is likely to be associated with the presence of suicidal behaviour, while problem-focused coping is likely to be associated with the absence of such behaviours. The relationship between coping behaviour, minor stressors and suicidal ideation seems crucial for both understanding how suicidal ideation might develop, and for providing avenues for treatment and early intervention. There is some evidence that coping behaviour interacts with stress to moderate the effects of stress on outcome (Aldwin & Revenson, 1987; Billings & Moos, 1984; Pearlin et al., 1981). This suggests therefore, that the relationship which minor stressors have with suicidal ideation could be modified by the way in which an individual deals with them.

Aim 3: The aim of the present study is to examine the association between minor stressors, suicidal ideation and coping behaviour. It is expected that focus of coping will interact with minor stressors to modify the relationship these

stressors have with suicidal ideation. It seems probable that the use of emotion-focused coping to deal with minor stressors will result in greater levels of suicidal ideation and the use of problem-focused coping to deal with these stressors will result in lesser levels of suicidal ideation.

4.2.4 Aim 4 of the study

Beck's cognitive theory of depression (Beck, 1963, 1967) suggests that stress is one variable which activates hopelessness and these negative expectations of the future increase the probability of suicidal behaviour developing. In non-clinical samples the relationship between stress and suicidal ideation has been shown to be mediated by hopelessness as Beck's theory would suggest (Dixon et al., 1992; Rudd, 1990). Also, depression in non-clinical samples has been shown to have a greater association than hopelessness with suicidal ideation and in one study, (Rudd, 1990) was also shown to mediate the relationship between stress and suicidal ideation. These findings suggest that in non-clinical samples stress potentially influences suicidal ideation only to the extent that it activates depression and hopelessness. If this is the case, then it is possible that coping behaviour may influence suicidal ideation by modifying the relationship minor stressors have with depression and hopelessness. This possibility is supported to some degree by Schotte and Clum (1982) who found that stress interacted with problem-solving behaviour to predict hopelessness and ultimately suicidal behaviour. They found that poor problem-solvers under high stress were significantly more hopeless and significantly higher in suicidal intent than poor problem-solvers under low stress and good problem-solvers under high and low stress. The possibility that coping behaviour influences suicidal ideation by

interacting with minor stressors to modify the relationship they have with depression and hopelessness will be explored in this study.

Aim 4: The aim of the present study will be to examine whether depression and hopelessness mediate the relationship between minor stressors and suicidal ideation. If this is shown to be the case then the possibility will be examined that coping impacts on suicidal ideation via its effects on the minor stressor-depression and minor stressor-hopelessness relationships.

4.3 Aims of the study with regard to further suicidal ideation

The use of prospective research designs to validate cross-sectional research findings is rare in the study of suicidal ideation. In order to increase our understanding of the relationships which psychological variables have with suicidal ideation, however, it is essential that cross-sectional findings are investigated prospectively. The present study aims to do this by investigating whether the hypothesised relationships between current suicidal ideation and minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping, extend to the prediction of further suicidal ideation in a non-clinical sample. In the context of this study further suicidal ideation is defined as *suicidal ideation at follow-up controlling for the effects of prior suicidal ideation*.

4.3.1 Aim 5 of this study

The literature review in chapter three has identified minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping as variables which may be associated with further suicidal ideation. The association between minor stressors and further suicidal ideation has not been examined before, but the research on the association between major life events and attempted and completed suicide suggests that those exhibiting such behaviours are likely to have experienced more stress in the months preceding their acts than non-suicidal control groups. Major life events are thought to influence mental health outcomes through their impact on minor stressors. This would suggest that those experiencing suicidal behaviours may also be experiencing an increase in minor stressors prior to completing their acts. If this is the case then it would be expected that minor stressors would be positively associated with further suicidal

ideation. If individuals are experiencing minor stressors then they will also be making attempts to cope with these stressors. Previous research (Puskar et al., 1992; Scholz & Pfeffer, 1987; Thomssen & Moller, 1988) suggests that the use of emotion-focused coping will be associated with higher levels of suicidal ideation and the use of problem-focused coping will be associated with lower levels. This would, therefore, suggest that emotion-focused coping would have a positive association with further suicidal ideation and problem-focused coping would have a negative association. In non-clinical samples both depression and hopelessness appear to be positively associated with further suicidal ideation (Goldney et al., 1991) and depression has the greater association of the two. This research suggests that if a person is experiencing further suicidal ideation he or she is also likely to have experienced prior minor stressors, depression, hopelessness, and made attempts to deal with these stressors. The relative degree of association each of these variables has with further suicidal ideation is not known, however, and the present study will aim to clarify this issue.

Aim 5: The aim of the present study is to establish the relative degree of association prior minor stressors, depression, hopelessness, emotion-focused and problem-focused coping have with further suicidal ideation.

4.3.2 Aim 6 of this study

As discussed in section 4.2.3 the way in which an individual copes with the stressors he or she is faced with can influence the emotional outcomes of these stressors (Billings et al., 1983; Billings & Moos, 1981, 1984, 1985; Mitchell et al., 1983; Pearlin et al., 1981; Pearlin & Schooler, 1978). The possibility that the

way an individual copes with prior minor stressors will modify the relationship these stressors have with further suicidal ideation has not been investigated before. The discussions in section 4.2.3 would suggest, however, that both foci of coping could interact with minor stressors to predict further suicidal ideation. The use of emotion-focused coping is associated with increased levels of suicidal behaviour and its use to cope with prior minor stressors could lead to increased levels of further suicidal ideation. The use of problem-focused coping, however, is associated with decreased levels of suicidal behaviour and its use to cope with prior minor stressors could lead to decreased levels of further suicidal ideation. Whether coping behaviour moderates the relationship between prior minor stressors and further suicidal ideation will be investigated in this study.

Aim 6: The aim of the present study is to examine the relationship between prior minor stressors, focus of coping use and further suicidal ideation. It is expected that focus of coping use will interact with prior minor stressors to predict further suicidal ideation. It is possible that the use of emotion-focused coping to deal with prior minor stressors will be associated with increased levels of further suicidal ideation and the use of problem-focused coping will be associated with decreased levels.

4.3.3 Aim 7 of this study

As discussed in section 4.2.4 it is possible that both depression and hopelessness mediate the relationship between minor stressors and current suicidal ideation. If so, then it creates the possibility that coping behaviour influences suicidal ideation via its effects on the relationships between minor

stressors and depression and hopelessness. Little is known empirically about whether these relationships extend to the prediction of further suicidal ideation. Depression and hopelessness have both been shown to be positively associated with further suicidal ideation in non-clinical samples. It is not known, however, whether they mediate the relationship between prior stressors and further suicidal ideation. If they do then it is possible that coping behaviour influences further suicidal ideation by modifying the relationships that prior minor stressors have with further depression and further hopelessness.

Aim 7: The aim of the present study is to examine whether depression and hopelessness mediate the relationship between prior minor stressors and further suicidal ideation. If this is shown to be the case then the possibility that focus of coping interacts with prior stressors to modify the relationships they have with further depression and further hopelessness will be investigated.

Summary of the present study

The intention of the present study is to examine the relationships minor stressors, depression, hopelessness and coping behaviour have with suicidal ideation in a non-clinical sample. The investigation of suicidal ideation and its correlates in a non-clinical sample provides a wider range of information for the development of prevention strategies than information obtained from clinical samples. It also provides an opportunity to gain a greater understanding of the early stages of the process which leads to attempted and completed suicide.

Previous univariate research indicates that minor stressors, depression, hopelessness and emotion-focused coping have positive relationships with suicidal ideation while problem-focused coping has a negative relationship. In non-clinical samples minor stressors potentially impact on suicidal ideation to the extent that they activate the emotional states of depression and hopelessness. It is likely that coping behaviour will modify the relationship between minor stressors and suicidal ideation. It is also possible, however, that coping behaviour will influence suicidal ideation through its effect on the relationship between minor stressors and depression and between minor stressors and hopelessness. The present study intends to explore these possibilities and also to investigate if they extend to the prediction of further suicidal ideation.

It is intended that the present study will extend previous knowledge of suicidal ideation in non-clinical samples through the use of an integrative approach which:

1. Examines the relationship that minor stressors have with suicidal ideation.
2. Clarifies the relationship between depression, hopelessness and suicidal ideation in a non-clinical sample.
3. Investigates the influence that coping behaviour has on the relationship between minor stressors and suicidal ideation.
4. Examines the predictive validity of these relationships.

Finally, the bulk of the research findings discussed in the literature review of this study are western countries other than New Zealand. While there are similarities between New Zealand's culture and those of Australia, United States of America

and the United Kingdom, it cannot be assumed that these findings can be directly transferred to the New Zealand population. This study will provide a revalidation of some of these previous findings for a non-clinical New Zealand sample.

CHAPTER FIVE

Methodology

The broad aim of the present study was to clarify the associations that a number of psychological variables have with current and further suicidal ideation in a non-clinical sample. Questionnaires measuring suicidal ideation, minor stressors, depression, hopelessness and coping behaviour were completed by the same subjects on two separate occasions. This design enabled the associations these variables had with current suicidal ideation to be measured twice. It also provided the opportunity to explore the extent to which variables measured at Time 1 were associated with suicidal ideation at Time 2.

5.1 Subjects

402 University students who volunteered to participate in a study on stress and coping behaviour completed the research questionnaire. All participants were aware, prior to signing into the study, that the questionnaire they would complete asked questions about feelings of depression and thoughts of suicide. The mean age of the sample was 21.8 yrs with a range of 17-59. The mode was 18 yrs and 82% of the sample fell in the 17 -25 age range. There were 142 males and 260 females of whom 351 were single, 30 were married, and 21 were divorced or separated. The majority of the sample (95%) were European, 2.8% were Maori and 2.2% were Asian. Only 3% of the sample lived alone and 59% were in their first year of university study. A smaller group of 15% were in their last year of study. The largest proportion of students came from the Social Sciences faculty (44%) followed by Science and Technology (13.4%), Business

(12.4%), Veterinary Science (8%), Humanities (6.7%), Agriculture and Horticultural Science (6%), Education (5.7%) with 4% not indicating a Majoring Faculty.

Data for the present study were collected on two separate occasions five months apart. At initial collection (Time 1) $N=402$ and at follow-up (Time 2) $N=346$. The return rate at follow-up was 86% of the initial sample.

5.2 Measures

The questionnaire for the present study was a 12 page booklet containing the following scales, Suicidal Ideation Questionnaire (Reynolds, 1987a, 1988a), Revised Hassles Scale (DeLongis, 1985), Beck Depression Inventory (Beck, Ward, Mendelson, Mock & Erbaugh, 1961), Hopelessness Scale (Beck, Weissman, Lester & Trexler, 1974) and the Coping Reactions Inventory (Billings & Moos, 1981). Also included in the questionnaire were a number of demographic questions and three questions on suicide attempts. The follow-up questionnaire contained the same scales. Demographic information was not collected at follow-up because this was unlikely to change from the initial collection. At both data collection times the measures were presented in the following order; Revised Hassles Scale, Coping Reactions Inventory, Beck Depression Inventory, Suicidal Ideation Questionnaire and Hopelessness Scale. This order was chosen because it began with what was considered to be the least intrusive measure, followed by a measure which focused on coping with stress, and then lead into more personal and emotion related measures. The demographic questions preceded the Revised Hassles Scale and the three

questions on past suicide attempts immediately followed the Suicidal Ideation Questionnaire. Participants took between 40 and 60 minutes to complete the questionnaire.

A copy of the questionnaire is provided in Appendix A.

Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1987a, 1988a)

This is a 30 item self-report measure which assesses suicidal ideation. Items are scored on a 7 point scale, to indicate the frequency with which each thought has occurred in the last month. The score for each item ranges from 0 (never had this thought) to 6 (had this thought almost everyday). It also has a response option that can indicate that the thought has occurred in the past but not in the last month. It measures both past and current suicidal ideation. The possible range of total scores for the SIQ is 0-180. The mean score for the standardization sample was 17.49.

The SIQ has sound reliability data. A number of studies have measured internal consistency (Reynolds, 1988b; Klosterman-Fields, 1985) and all have shown reliability coefficients in the mid to high .9 range. Reynolds (1988b) reports a test-retest reliability coefficient over a 4 week period of .72. These studies suggest that the SIQ is a reasonably reliable measure of suicidal ideation.

Construct validity has also been collected and Reynolds (1988b) reports that SIQ scores have moderately high correlations with scores on the Beck depression Inventory, the Reynolds Adolescent Depression scale, and the Children's

Depression Inventory. There is a moderate relationship with scores on the Beck Hopelessness Scale, anxiety measure scores and Hassles scores (Reynolds, 1987b, 1988b). This validity data is promising and suggests that the SIQ is a useful measure of suicidal ideation.

The Revised Hassles Scale (DeLongis, 1985)

This 53 item scale is a revised version of the Kanner, Coyne, Schaefer and Lazarus (1981) Hassles Scale and designed to measure the degree to which daily events are perceived as being stressful. This scale differs from the original scale in that redundant items and those suggesting psychological and somatic symptoms have been removed. The scale used in the present study differs from the DeLongis (1985) scale in that the uplifts scale was not utilized. It was omitted primarily because hassles were the variables of interest in this study. The items of the Hassles scale reflect a variety of everyday concerns ranging from work and family through to social activities and finances. Each item is scored on a 4 point likert scale measuring the degree to which each is perceived as being a hassle. The scales range from 0 (Not at all or not applicable) to 3 (A great deal). This scale can be scored for the frequency of hassles with scores potentially within the range of 0-53. It can also be scored for the severity of hassles by summing the scores for each item. Severity scores can range from 0-159. The main interest of the present study was the degree to which these daily events were perceived by the participants as being stressful; the severity score was used for all analyses.

DeLongis, Coyne, Dakof, Folkman and Lazarus (1982) report that the original Hassles Scale has test re-test reliability coefficients averaging .79 for the frequencies of hassles and coefficients in the range of .48 for the intensity of hassles. Scores on the Hassles Scale have been shown to have a positive relationship with dysfunction (Kanner et al., 1981; Monroe, 1983), and health status (DeLongis et al., 1982). These findings provide some support for the validity of the Hassles Scale as a measure of daily stress.

Beck Depression Inventory (BDI) (Beck et al., 1961)

This 21 item self-administered questionnaire was developed to assess the intensity of depression based on systematically defined symptomology. It was initially designed for use with clinical samples but has since been used widely with non-clinical populations.

Each of the 21 items is rated from 0-3 and a total score is derived by summing the ratings given for each of the 21 items. Beck, Steer and Garbin (1988) report 15 studies addressing the internal consistency of the BDI. The mean alpha coefficient for these studies was .81 with a range of .73-.92. This would suggest that the BDI has good internal consistency. Beck et al. (1988) in reviewing 5 studies examining the test-retest reliability of the BDI show that over short periods (1-2 weeks) correlation coefficients in the medium .80s are found. Retests over longer periods (4 months or more) have lower coefficients in the .6 range. This would suggest the BDI has short term stability but less stability over the long term. This is consistent, however, with the natural course of depression where levels would be expected to decrease over time. This reduced stability

over time could therefore be viewed as a strength of this measure because it is sensitive to the changes expected to occur over time.

Validity data for the BDI is also very sound. It has moderate to high correlations with other measures of depression such as the Self-Rating Depression Scale (Zung, 1965), Hamilton Rating Scale for Depression (Hamilton, 1960), the depression scale on the MMPI, and clinical ratings of depression (Beck et al., 1988).

The Hopelessness Scale (HS) (Beck et al., 1974)

According to Beck's theory of depression (Beck, 1963, 1967) negative expectations of the future form one of the three cognitive components of depression. It is this component which is postulated to link depression and suicidal behaviour. The Hopelessness Scale is a 20 item true/false scale developed to measure the degree to which an individual's cognitive schema are dominated by negative expectations of the future. Total scores may range from 0-20, in which higher scores indicate greater degrees of hopelessness.

This scale has been shown to have high internal consistency with alpha coefficients of .93 in a suicide attempters sample (Beck et al., 1974) .86 in a general psychiatric sample, .83 in a forensic psychiatric sample and .63 in an undergraduate university student sample (Durham, 1982).

The concurrent validity of the Hopelessness Scale has been demonstrated through correlations of .74 with clinical ratings of hopelessness and .60 with the

pessimism item of the BDI (Beck et al., 1974). Construct validity has also been demonstrated in a number of studies examining the theoretical idea that hopelessness is the variable which accounts for the relationship between depression and suicidal behaviour. The majority of these studies with clinical samples support such an idea (Weishaar & Beck, 1992). Hopelessness has not been found to account for the relationship between depression and suicidal ideation in non-clinical samples; this may be due to the low levels of suicidal ideation found in such samples and is an area that the present study will attempt to clarify.

Coping Reactions Inventory (CRI) (Billings & Moos, 1981)

This inventory requires the subject to identify a recent stressful life event and answer 19 true/false questions which probe the ways in which they dealt with the event. Based on previous research (Moos, 1976, 1977) the 19 items are grouped into three methods of coping categories: active cognitive (6 items), active behavioural (6 items), and avoidance (5 items). The items are also classified in terms of focus of coping, based on the research of Folkman and Lazarus (1980). The two foci of coping are problem-focused (6 items) and emotion-focused (11 items).

The score for each of the coping categories is the percentage of items for each category answered in the "yes" direction. Internal consistency coefficients are reported as .72 for active-cognitive coping, .80 for active behavioural coping, .44 for avoidance coping, and .62 for the entire set of items, (Billings & Moos, 1981).

The main variables of interest in the present study were emotion-focused coping and problem-focused coping. Billings and Moos (1981) report that the items in the CRI used to classify these foci of coping have adequate internal consistency and that the focus of coping categories are relatively independent. To some degree high internal consistency would not be expected with such measures. It is possible that an individual may rely on one coping strategy within a focus of coping dimension (e.g. Took it out on other people) and this may result in less need for the use of other strategies in the same focus of coping dimension. Providing the strategies used to classify the foci of coping are relatively independent this does not reduce the ability of the particular strategy to indicate the focus of coping used.

In the present study only the scores for the emotion-focused and problem-focused dimensions of the CRI were utilized in the analyses because they were of major interest in relation to suicidal ideation. The score for each of these dimensions was the proportion of items answered in the "yes" direction. Scores on each dimension, therefore, could range from 0-1. The higher the proportion the greater the frequency of use of strategies falling within that particular focus of coping.

5.3 Procedure

Subjects were volunteers, recruited by the present researcher speaking about his study in lectures throughout the university. Potential subjects were informed about the nature of the study and if they were interested in participating were asked to arrange a time to meet with the researcher to complete the

questionnaire. Groups of 4-10 subjects then met with the researcher, for approximately 1 hour, to complete the questionnaire. They were asked to read the informed consent form (see Appendix A for a copy of this) and if they wished to continue with the study to sign the form and complete the questionnaire. This phase of the data collection occurred in May/June which is a relatively stressful time of year, with terms tests and assignments being due. Subjects were then mailed a second questionnaire approximately 5 months later which they completed at home and posted back to the researcher. This phase of data collection occurred in November/December, which is a time when exams are complete and summer holidays have begun. Subjects were aware they would be sent a follow-up questionnaire and this may have contributed to the high return rate of 86% at follow-up. Both questionnaires had lists of local referral agencies which the participant could contact if they wished to receive counselling. Subjects were also given the opportunity to speak with the researcher about these agencies or any aspects of the research if they wished.

5.3.1 Ethical considerations

In this study participants were required to supply their names and a contact address in order to be sent a follow-up questionnaire. This meant that those participants who were in distress or who were potentially suicidal were able to be identified. Stanton and New (1988) suggest that the researchers responses in this situation can range from no response to the provision of indepth psychotherapy. Szasz (1986) has argued that intervention with non-consenting clients/subjects undermines the ethic of individual liberty and self responsibility, while others (Goodman, 1985; Berman & Cohen-Sandler, 1983) have argued that

it is the professional's duty to prevent clients from harming themselves or others. The present researcher attempted to find a balance between these two possible responses. The research by Stanton and New (1988) indicated that the majority of studies faced with such considerations provided information (either verbal or written) regarding treatment services and most provided a debriefing session. Students questioned by Stanton and New (1988) about what they would find most useful and not intrusive in this situation mostly responded that they would prefer to receive written information on treatment options. It was decided therefore to provide participants in this study with written information about local treatment services which could be accessed through self referral (see Appendix A for this information form).

The Ethical Principles for undertaking research of the New Zealand Psychological Society (1985) place a strong emphasis on the use of informed consent. In the present study potential participants were provided with an information form outlining the nature of the research, the researchers responsibilities and what would be expected of them as participants (see Appendix A for a copy of this form). This researcher was present when the information form was been read by participants and able to discuss its contents if required. After signing the consent form and completing the questionnaires the participants had the opportunity to speak with the present researcher about any aspects of the study and/or the list of treatment agencies which were provided.

These procedures were developed after discussions with senior colleagues regarding the ethical issues raised by this research and were subsequently reviewed and approved by the Massey University Ethics Committee.

5.4 Data collection summary

The measures used in this study were given to the participants in the same order at both collection times. Data collected at these times were treated as two distinct sets of cross-sectional data. Analyses addressing associations with current suicidal ideation, that is, *suicidal ideation at initial testing and follow-up not controlling for the effects of prior suicidal ideation*, were conducted on both sets of data. Following the cross-sectional analyses, a longitudinal design was used which focused on the associations of variables at Time 1 with variables at Time 2. Table 1 summarizes the measures given at each collection time.

Table 1: Measures given at Time 1 and Time 2 in the order that they were presented to the subjects.

| Time 1 measures | Time 2 measures |
|---------------------------------|---------------------------------|
| Demographic questions | |
| Revised Hassles Scale | Revised Hassles Scale |
| Coping Reactions Inventory | Coping Reactions Inventory |
| Beck Depression Inventory | Beck Depression Inventory |
| Suicidal Ideation Questionnaire | Suicidal Ideation Questionnaire |
| Attempted Suicide Questions | Attempted Suicide Questions |
| Hopelessness Scale | Hopelessness Scale |

CHAPTER SIX

Results

6.1 Overview of the results

The results section is divided into three main parts. Part 1 provides an initial exploration of the major variables included in the study, examining their internal consistency, stability and inter-correlations.

Part 2 focuses on current suicidal ideation (*suicidal ideation at initial testing and follow-up, not controlling for the effects of prior suicidal ideation*). There are two sets of current suicidal ideation data, one collected at initial testing (Time 1) and the other collected at follow-up (Time 2). Part 2 provides an examination of the relationships between minor stressors, depression, hopelessness, focus of coping and current suicidal ideation. The relative contribution each of these variables makes to the prediction of current suicidal ideation was investigated first, using standard multiple regression analysis. Next, the proposition that hopelessness is the key variable linking depression with current suicidal ideation in a non-clinical sample was examined using partial correlation analysis. The possibility that this relationship may be dependent on the level of suicidal ideation was then investigated. The next section of Part 2 investigated the proposition that minor stressors impact on suicidal ideation only to the extent that they activate the emotional states of depression and hopelessness. In order to do this partial correlation analysis was again used. Following that, the proposition was examined that the focus of coping a person uses to deal with minor stressors will modify the relationship that minor stressors have with current suicidal ideation

using product-term regression analysis. Finally, the possibility was investigated that coping behaviour influences suicidal ideation to the extent that it moderates the relationship between minor stressors and the independent variables which link minor stressors with suicidal ideation, using product-term regression analysis.

Part 3 focuses on further suicidal ideation (*suicidal ideation at follow-up controlling for the effects of prior suicidal ideation*). It first provides an examination of the relationships which further suicidal ideation has with the Time 1 independent variables. Then relative contribution each of the Time 1 independent variables makes towards the prediction of further suicidal ideation is examined through hierarchical multiple regression analysis. Next the proposition was investigated that minor stressors impact on further suicidal ideation only to the extent that they activate depression and hopelessness using partial correlation analysis. In order to calculate the appropriate partial correlations and also control for the effects of suicidal ideation at Time 1 and minor stressors and depression at follow-up, hierarchical multiple regression analysis was used. This involved entering suicidal ideation at Time 1 and minor stressors and depression at follow-up on the first step of a hierarchical multiple regression with suicidal ideation at follow-up as the dependent variable. The independent variables were entered next and partial correlations between minor stressors at Time 1 and further suicidal ideation were calculated controlling for depression and hopelessness respectively at Time 1. In the final section of Part 3 product-term regression analysis was used to examine the proposition that the focus of coping used to deal with minor stressors at Time 1 would modify the relationship that these stressors have with further suicidal ideation.

6.1.1 General information on data analyses

Multiple regression analyses were used to examine how minor stressors, depression, hopelessness and focus of coping combined and inter-related to be associated with suicidal ideation. The data for these analyses were initially examined to gauge the degree to which they met the basic assumptions of multivariate analysis (Tabachnick & Fidell, 1989).

The distribution of each variable was examined for skewness and kurtosis. For the Time 1 data set, suicidal ideation and hopelessness were positively skewed. For the Time 2 data, suicidal ideation, depression and hopelessness were positively skewed. Transformations of these variables were made and all analyses were conducted with and without the transformations. A square root transformation was used for suicidal ideation and hopelessness at Time 1 and a log transformation was used for suicidal ideation, depression and hopelessness at Time 2. Overall, these transformations improved the distributions of the variables and therefore the multivariate assumptions. There were, however, no substantive changes in the effects of the independent variables in predicting suicidal ideation. The distributions of suicidal ideation, depression and hopelessness in a non-clinical sample would be expected to be positively skewed because high levels of these variables have low rates of occurrence per head of population (Dixon et al., 1992). Taking into account the general lack of substantive change in effects and the desire to provide interpretations that were straightforward and had relevance to a non-clinical population, the analyses that did not include the transformed variables are reported here.

At both collection times there were very little missing data and, therefore, for all analyses reported cases with missing data were excluded listwise. A small number of outliers ($z > \pm 3$) were identified for each analysis. Given the small number of outliers and the large sample size, it was decided to exclude outliers from each analysis. Therefore all multiple regression analyses presented in Parts 2 and 3 of the results section have outliers and cases with missing data excluded and no variables transformed. It was also decided, given the large sample size, to use a significance level of .01 for interpretation of statistical results.

6.1.2 Preliminary data analyses

Suicide attempt data was collected for all subjects at both data collection times. Due to the small number of reported past suicide attempts this data was not included in the main analyses. Suicide attempt data is presented in appendix C.

Two preliminary data analyses were conducted. The first investigated whether there were differences between subjects who completed both questionnaires and those who only completed the initial questionnaire. The second examined whether there were any sex differences on the major variables at initial testing and follow-up.

At follow-up 346 of the 402 initial sample returned completed questionnaires. To examine whether there were differences between the 346 subjects who completed both questionnaires and the 56 subjects who failed to complete the Time 2 questionnaire, Time 1 data for both groups were compared. Results are presented in Table 2.

Table 2: Comparison of the Time 1 data for those who completed the follow-up questionnaire and those who did not.

| Variable | Completers N = 346 | Non-completers N = 56 | Statistics |
|------------------------|-----------------------|--------------------------|---------------------|
| \bar{x} Age | 21.8 | 21.7 | .35 |
| Male | 111 (32%) | 31 (55%) | |
| Female | 235 (68%) | 25 (45%) | ^a 9.84 * |
| Suicidal Ideation | 21.77 | 21.95 | .06 |
| Minor stressors | 33.95 | 34.73 | .30 |
| Depression | 9.23 | 10.21 | .93 |
| Hopelessness | 3.92 | 3.61 | -.67 |
| Emotion-focused coping | 0.41 | 0.42 | .43 |
| Problem-focused coping | 0.58 | 0.58 | -.02 |

* $p < .01$
 Note: All results are for t -tests except ^a is χ^2

The results in Table 2 show that the proportion of males to females was significantly higher in the non-completer group than in the group which completed both questionnaires. For age, suicidal ideation, minor stressors, depression, hopelessness, and focus of coping there were no significant differences between the two groups. This suggests that the group who did not complete the follow-up questionnaire are not markedly different from the group who completed the study and the data for the main variables in the completer group can be considered to be representative of the original sample.

To examine whether there were sex differences in the main variables one way analyses of variance for suicidal ideation, minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping by sex were conducted on the Time 1 and 2 data. These results are presented in Table 3.

Table 3: Differences in mean scores on the main variables for males and females at Time 1 and 2.

| | Male | Female | |
|------------------------|-----------|-----------|--------|
| Variable | \bar{x} | \bar{x} | F |
| Time 1 | | | |
| Suicidal ideation | 21.28 | 22.07 | .16 |
| Minor stressors | 31.43 | 35.50 | 6.16 * |
| Depression | 8.62 | 9.78 | 2.48 |
| Hopelessness | 3.77 | 3.93 | 2.35 |
| Emotion-focused coping | 0.40 | 0.43 | 2.87 |
| Problem-focused coping | 0.55 | 0.59 | 2.10 |
| Time 2 | | | |
| Suicidal ideation | 20.22 | 20.79 | .06 |
| Minor stressors | 28.90 | 31.65 | 2.26 |
| Depression | 7.32 | 7.85 | .46 |
| Hopelessness | 3.92 | 3.69 | .31 |
| Emotion-focused coping | 0.41 | 0.41 | .01 |
| Problem-focused coping | 0.58 | 0.59 | .01 |

* p < .01

Except for minor stressors at Time 1, where females had higher levels of minor stress than males, no significant differences between males and females were found for any of the main variables (see Appendix B for summary Anova tables). These results suggest that sex does not have a major influence on the experienced levels of suicidal ideation, minor stressors, depression and hopelessness in this non-clinical sample. It also indicates that males and females do not differ in their preferences for focus of coping use. Because of these findings it was decided not to conduct separate analyses for males and females for the major aims of the study.

PART 1

6.2 Reliability of measures used in the study

In order to evaluate the reliability of the measures used in this study, the Time 1 and 2 internal consistency coefficients for suicidal ideation, minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping were calculated. The means for these variables at Time 1 and Time 2 were compared and test-retest reliability coefficients were also calculated. Table 4 reports the alpha coefficients, test-retest coefficients and t-tests for suicidal ideation, minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping.

Table 4: Means, standard deviations, test-retest and internal reliability coefficients for all variables

| Variable (N items) | Time 1 Alpha | Time 2 Alpha | Retest | Time 1 \bar{x} (SD) | Time 2 \bar{x} (SD) | t-test |
|---------------------------|-----------------|-----------------|--------|--------------------------|--------------------------|--------|
| Suicidal Ideation (30) | .95 | .96 | .65 | 21.79 (18.74) | 20.69 (20.25) | 1.31 |
| Minor stressors (53) | .88 | .89 | .71 | 34.06 (15.81) | 30.61 (15.91) | 4.98** |
| Depression (21) | .85 | .86 | .55 | 9.37 (7.05) | 7.65 (6.67) | 4.47** |
| Hopelessness (20) | .83 | .82 | .62 | 3.88 (3.56) | 3.75 (3.48) | .94 |
| Emotion-focused (11) | .12 | .11 | .34 | 0.42 (0.22) | 0.41 (0.14) | .52 |
| Problem-focused (7) | .45 | .40 | .39 | 0.58 (0.22) | 0.59 (0.21) | -.94 |

** p < .001

The data in Table 4 demonstrates that the measures of suicidal ideation, minor stressors, depression and hopelessness have high internal consistency which is

relatively constant over time. The alphas for suicidal ideation, depression and hopelessness compare favourably with alphas found in previous research (Beck et al., 1988; Mendonca, Holden, Mazmanian & Dolan 1983; Petrie, 1983; Reynolds, 1988a, 1988b; Tanaka-Matsumi & Kameoka 1986). The reliability coefficients for the test-retest period, of approximately five months, for the measures of suicidal ideation, minor stressors, depression and hopelessness are within reasonable levels and consistent with those found in previous research (Beck et al., 1988; Chamberlain & Zika, 1990; Reynolds, 1988a, 1988b).

The measures of emotion-focused coping and problem-focused coping have low alphas which are lower than those reported by Billings and Moos (1981). The test-retest reliability coefficients found for these measures are also low. There are no previous data with which to compare these results but some consistency in preference for focus of coping over time would be expected. Some variability over time would also be expected, however, because the preference for a coping focus is to some degree dependent on the stressful event being dealt with. The lower test-retest coefficients, therefore, may be a reflection of this and indicate that the measure is sensitive to such changes. These results together with the internal consistency coefficients for both foci of coping suggest two things. First, there is some consistency in the choice of focus of coping used over time. Second, within this choice, there is variability in the use of specific strategies. It is to be expected that there would be some consistency in the focus of coping a person would use to deal with a variety of situations. There are a variety of strategies within the dimensions of emotion-focused and problem-focused coping, however, and variability in the choice of such strategies would also be

expected (Billings et al., 1983; Mitchell et al., 1983). Given this, the coping measures could be considered to show some sensitivity in reflecting this pattern.

Finally, mean scores for minor stressors and depression are significantly lower at Time 2 than at Time 1. It is possible that this difference is a function of the time of year that each questionnaire was given. The first was given early in the winter term and the last was given during the early part of the summer break. The participants' environment therefore would have changed and it is likely that such changes would effect levels of daily stress and depression in university students.

6.2.1 Inter-relationships between variables

To investigate the univariate relationships between suicidal ideation, minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping the inter-correlations between these variables were calculated at Time 1 and Time 2 and are presented in Table 5.

Table 5: Correlations between suicidal ideation, minor stressors, depression, hopelessness, emotion-focused coping and problem-focused coping at Time 1 (N = 402) and Time 2 (N = 346)

| Variable | 1 | 2 | 3 | 4 | 5 |
|---------------------------|-------|-------|-------|--------|------|
| Time 1 | | | | | |
| 1. Suicidal ideation | | | | | |
| 2. Minor stressors | .39** | | | | |
| 3. Depression | .61** | .55** | | | |
| 4. Hopelessness | .47** | .35** | .53** | | |
| 5. Emotion-focused coping | .13* | .19** | .24** | .07 | |
| 6. Problem-focused coping | -.06 | .03 | -.05 | -.17** | .14* |
| Time 2 | | | | | |
| 1. Suicidal ideation | | | | | |
| 2. Minor stressors | .36** | | | | |
| 3. Depression | .55** | .46** | | | |
| 4. Hopelessness | .46** | .29** | .53** | | |
| 5. Emotion-focused coping | .08 | .18** | .16* | .09 | |
| 6. Problem-focused coping | -.07 | .08 | -.06 | -.15* | .03 |

* $p < .01$ ** $p < .001$

Table 5 confirms that suicidal ideation is positively correlated with minor stressors, depression, hopelessness and emotion-focused coping. These correlations are somewhat lower at Time 2 than at Time 1, and emotion-focused coping does not have a significant correlation with suicidal ideation at this time. This is indicative of the general reduction in variable levels at this time, as

evidenced by the means in Table 4 and may be a function of the time of year that the data were collected.

Minor stressors, depression and hopelessness are significantly correlated with each other at both Time 1 and Time 2, suggesting that there is a consistent inter-relationship between the three. Emotion-focused coping and problem-focused coping have a small correlation at Time 1 and a negligible one at Time 2. They also have different correlates in Table 5. Emotion-focused coping is correlated with minor stressors and depression at both times but is not related to hopelessness. Problem-focused coping is negatively correlated with hopelessness at both times but is not related to minor stressors or depression. These results, therefore, support the contention that emotion-focused and problem-focused coping are conceptually different.

The results in this section show that minor stressors, depression, hopelessness and focus of coping are all linked to suicidal ideation. These variables are also inter-related to varying degrees and Part 2 of the results section will examine how these variables work together to be associated with suicidal ideation.

PART 2

6.3 Predictors of current suicidal ideation

The presence of suicidal ideation is associated with the presence of minor stressors, feelings of depression and hopelessness and attempts to cope with the situation. The results in the previous section confirm that these variables are positively correlated with current suicidal ideation and are also correlated with each other. In order to examine the relative degree of association that these variables had with current suicidal ideation they were entered on the same step of a standard multiple regression analysis with current suicidal ideation as the dependent variable. The results of these analyses at Time 1 and Time 2 are presented in Table 6.

Table 6: Standard multiple regression analysis results with minor stressors, depression, hopelessness and focus of coping predicting to current suicidal ideation at Time 1 (N = 391) and Time 2 (N = 331)

| Variable | β |
|--|---------|
| Time 1 | |
| Minor stressors | .0749 |
| Depression | .4812** |
| Hopelessness | .2109** |
| Problem-focused coping | .0144 |
| Emotion-focused coping | -.0423 |
| (adj R ² = .4199, F(5,385) = 57.4702**) | |
| Time 2 | |
| Minor stressors | .1284 |
| Depression | .3324** |
| Hopelessness | .2326** |
| Problem-focused coping | -.0049 |
| Emotion-focused coping | .0143 |
| (adj R ² = .3009, F(5,325) = 29.4052**) | |

**p < .001

At both data collection times depression and hopelessness were the only independent variables that contributed significantly to the prediction of current suicidal ideation. As expected in a non-clinical sample, depression has a greater influence in the prediction of suicidal ideation than hopelessness. All of the variables together accounted for 42% of the variance in current suicidal ideation at Time 1 and 30% at Time 2.

The results presented in Table 6 indicate that when all the independent variables are present, depression and hopelessness are the major predictors of current suicidal ideation. Depression is more influential than hopelessness in this prediction. It is notable that the amount of variance in suicidal ideation accounted for by minor stressors, depression, hopelessness and the two foci of coping is lower at Time 2. This reflects the lower Time 2 correlations in Table 5, but of interest is the consistency of the general pattern of relationships despite this drop.

6.3.1 Suicidal ideation, depression and hopelessness

The results above confirm that, in a non-clinical sample, depression has a greater association with suicidal ideation than does hopelessness. To examine whether the relationship between suicidal ideation and depression in non-clinical samples is accounted for by a shared association with hopelessness, partial correlation analysis was used. Correlations were calculated between suicidal ideation and depression; then first order partial correlations between these variables were calculated controlling for hopelessness. This procedure was repeated correlating

hopelessness with suicidal ideation and then controlling for depression. The results of these analyses are presented in Table 7.

Table 7: Full and partial correlations for suicidal ideation with depression and hopelessness controlling for hopelessness and depression respectively at Time 1 (N=402) and Time 2 (N=346)

| Variable | Controlling | Suicidal Ideation |
|---------------|--------------|-------------------|
| Time 1 | | |
| Depression | | .61** |
| | Hopelessness | .49** |
| Hopelessness | | .47** |
| | Depression | .21** |
| Time 2 | | |
| Depression | | .55** |
| | Hopelessness | .40** |
| Hopelessness | | .46** |
| | Depression | .24** |

** p <.001

At both measurement times depression correlated more highly with suicidal ideation than hopelessness did with suicidal ideation. When hopelessness was partialled out, the correlation between depression and suicidal ideation fell somewhat but remained substantial and significant. When depression was partialled out the correlation between hopelessness and suicidal ideation was halved and also remained significant. This effect was consistent at both times. These results do not support the hypothesis that hopelessness is the variable explaining the correlation between depression and suicidal ideation in a non-clinical sample. They do suggest that depression and hopelessness have a shared association with suicidal ideation in a non-clinical sample and that depression has the greater influence in this association. These further support the earlier

standard multiple regression findings that depression is the better predictor of suicidal ideation in a non-clinical sample.

To examine whether hopelessness becomes more important than depression as a predictor of suicidal ideation as the level of suicidal ideation increases, the partial correlation analysis used above was repeated at five different levels of suicidal ideation. The highest ten percent of ideation scores were successively excluded down to the sample median, and at each of the exclusion levels partial correlation analysis was conducted. This method of analysis was similar to that used by Schotte and Clum (1982) and allows comparisons to be made with their findings. The partial correlations depression and hopelessness had with suicidal ideation, with the other controlled, at each level of suicidal ideation are presented in Table 8.

Table 8: Full and partial correlations for five levels of suicidal ideation with depression and hopelessness controlling for hopelessness and depression respectively at Time 1 and 2. The highest 10% of suicidal ideation scores are successively excluded down to the sample median.

| | | % of suicidal ideation scores excluded | | | | |
|--------------|--------------|--|-------|-------|-------|-------|
| Variable | Controlling | 50% | 40% | 30% | 20% | 10% |
| Time 1 | | | | | | |
| Depression | | .41** | .42** | .43** | .37** | .46** |
| | Hopelessness | .34** | .33** | .35** | .27** | .33** |
| Hopelessness | | .25** | .33** | .33** | .32** | .34** |
| | Depression | .09 | .18* | .18** | .19** | .18** |
| Time 2 | | | | | | |
| Depression | | .29** | .25** | .24** | .25** | .33** |
| | Hopelessness | .24** | .18* | .18* | .18* | .23** |
| Hopelessness | | .22* | .23* | .22* | .24** | .29* |
| | Depression | .13 | .15 | .13 | .16** | .17* |

* $p < .01$ ** $p < .001$

If hopelessness becomes a better predictor than depression of suicidal ideation as the level of suicidal ideation increases, it would be expected that the partial correlation that hopelessness has with suicidal ideation would become greater than that which depression has with suicidal ideation as the level of suicidal ideation increases. The results in Table 8 show that while the partial correlations of the two converge as level of suicidal ideation increases, depression maintains the highest partial correlation at all levels of suicidal ideation. At the highest level of suicidal ideation when only 10% of the highest ideators are excluded, the partial correlations diverge again. This pattern of results is similar at both Time 1 and Time 2 and suggests that at higher levels of suicidal ideation the influence of hopelessness relative to depression in the prediction of suicidal ideation decreases. This is contrary to the findings of Schotte and Clum (1982) and suggests that in this non-clinical sample depression is the better predictor of suicidal ideation, regardless of its level.

6.3.2 Suicidal ideation, minor stressors and depression

The hypothesis that minor stressors influence suicidal ideation only to the extent that they activate the emotional state of depression was investigated. In order to do this partial correlation analysis was used. Correlations were calculated between minor stressors and suicidal ideation and then first order partial correlations were calculated controlling for depression. This procedure was repeated correlating depression with suicidal ideation and then controlling for minor stressors. These results are presented in Table 9

Table 9: Full and partial correlations for suicidal ideation with minor stressors and depression controlling for depression and minor stressors respectively at Time 1 (N = 402) and Time 2 (N = 346)

| Variable | Controlling | Suicidal ideation |
|-----------------|-----------------|-------------------|
| Time 1 | | |
| Minor stressors | | .39** |
| | Depression | .09 |
| Depression | | .61** |
| | Minor stressors | .52** |
| Time 2 | | |
| Minor stressors | | .36** |
| | Depression | .15* |
| Depression | | .55** |
| | Minor stressors | .46** |

* p < .01 ** p < .001

The results in Table 9 indicate that at Time 1 when the effects of depression are controlled, minor stressors no longer have a correlation with suicidal ideation. When the effects of minor stressors are controlled, the correlation between suicidal ideation and depression drops slightly but remains substantial and significant. At Time 2 the pattern of results is similar. The correlation between minor stressors and suicidal ideation drops substantially when depression is controlled and the correlation between depression and suicidal ideation remains substantial and significant when minor stressors are controlled. Taken together these results indicate that in this non-clinical sample, depression mediates the relationship between minor stressors and suicidal ideation. This finding is also consistent with Rudd’s (1990) results, which showed that in a university student sample, depression mediates the relationship between major life events and suicidal ideation.

6.3.3 Suicidal ideation, minor stressors and hopelessness

Although this study demonstrates that depression mediates the relationship between minor stressors and suicidal ideation, Beck’s theory (Beck, 1963, 1967) also suggests that stress impacts on suicidal ideation only to the extent that it activates hopelessness. To examine this possibility partial correlation analysis was again used. Correlations were calculated between minor stressors and suicidal ideation and then first order partial correlations were calculated controlling for hopelessness. This procedure was repeated correlating hopelessness with suicidal ideation and then controlling for minor stressors. These results are presented in Table 10.

Table 10: Full and partial correlations for suicidal ideation with minor stressors and hopelessness controlling hopelessness and minor stressors respectively at Time 1 (N=402) and Time 2 (N=346)

| Variable | Controlling | Suicidal ideation |
|-----------------|-----------------|-------------------|
| Time 1 | | |
| Minor stressors | | .39** |
| | Hopelessness | .28** |
| Hopelessness | | .46** |
| | Minor stressors | .38** |
| Time 2 | | |
| Minor stressors | | .36** |
| | Hopelessness | .27** |
| Hopelessness | | .46** |
| | Minor stressors | .40** |

** p < .001

The results in Table 10 show that when the effects of hopelessness are controlled the correlation that minor stressors have with suicidal ideation drops slightly. When the effects of minor stressors are controlled the correlation that hopelessness has with suicidal ideation also drops slightly. Hopelessness accounts for only a small part of the relationship that minor stressors have with

suicidal ideation and, therefore, it does not mediate this relationship. When these results are considered alongside the results obtained for depression (above), it is evident that in a non-clinical sample minor stressors impact on suicidal ideation to the extent that they activate depression and not hopelessness.

Overall the inter-relationships between suicidal ideation, depression and hopelessness found in this non-clinical sample are generally consistent with those found in other non-clinical samples (Bonner & Rich, 1987, 1988a; Dixon et al., 1992; Rudd, 1990). Depression has been shown to be a better predictor than hopelessness of suicidal ideation. Consistent with this, depression was shown to mediate the relationship between minor stressors and suicidal ideation, while hopelessness did not. The following sections of Part 2 will investigate the inter-relationships that suicidal ideation and depression have with minor stressors and focus of coping.

6.3.4 Suicidal ideation, minor stressors and coping behaviour

Coping behaviour is an integral part of dealing with stress. It has been shown to interact with stress to moderate the effects of stress on outcome. Whether coping behaviour interacts with minor stressors to influence the relationship they have with suicidal ideation was investigated. To do this a product-term regression analysis (Finney, Mitchell, Cronkite & Moos, 1984) was conducted. This involved calculating deviation scores for minor stressors and each focus of coping. Two cross-products were then calculated using the deviation scores. These were minor stressors by emotion-focused coping and minor stressors by problem-focused coping. Each of these new variables was entered into an

hierarchical multiple regression with suicidal ideation as the dependent variable. The deviation score for minor stressors was entered on the first step, those for emotion-focused and problem-focused were entered on the second step and finally the two cross-products were entered. This procedure was completed for both the Time 1 and Time 2 data and the results are presented in Table 11.

Table 11: Results of the product-term regression analysis with minor stressors, focus of coping and the interaction term predicting to suicidal ideation at Time 1 (N = 389) and Time 2 (N = 328)

| Step | Variable | ΔR^2 | β |
|---------------|-------------------|--------------|---------|
| Time 1 | | | |
| 1 | Minor stressors | .1863** | .4216** |
| 2 | EFC | | .0471 |
| | PFC | .0078 | -.0685 |
| 3 | Minor stressors X | | |
| | EFC | | .1213* |
| | PFC | .0226* | -.0912 |
| Time 2 | | | |
| 1 | Minor stressors | .1068** | .3731** |
| 2 | EFC | | .0789 |
| | PFC | .0116 | -.0874 |
| 3 | Minor stressors X | | |
| | EFC | | -.1412* |
| | PFC | .0371** | -.1240 |

* $p < .01$ ** $p < .001$

EFC = emotion-focused coping, PFC = Problem-focused coping

The results in Table 11 show that at Time 1 the interaction between minor stressors and focus of coping accounts for an additional 2% of the variance in suicidal ideation. At Time 2 this interaction accounts for an additional 4% of the variance in suicidal ideation. The beta weights indicate that at both times the interaction between minor stressors and emotion-focused coping was more influential in the prediction of suicidal ideation than the interaction between minor stressors and problem-focused coping. In order to examine the interaction

between minor stressors and emotion-focused coping in more detail, minor stressors were dichotomised at their median and the effects of emotion-focused coping on the relationship between minor stressors and suicidal ideation at high and low levels of minor stressors were analysed. This involved conducting separate standard multiple regression analyses, entering emotion-focused coping and problem-focused coping on the same step predicting suicidal ideation for high and low levels of minor stressors. These analyses allowed values for the slope of the regression lines of emotion-focused coping predicting suicidal ideation and the intercepts of these lines to be calculated. This same procedure was repeated for the Time 2 data. Dichotomising minor stressors causes some information to be lost, but it is a recognized technique for interpreting interactions already found to be significant (Cohen & Cohen, 1983; Mossholder, Kemery & Bedeian, 1990). These results are presented in Figure 1.

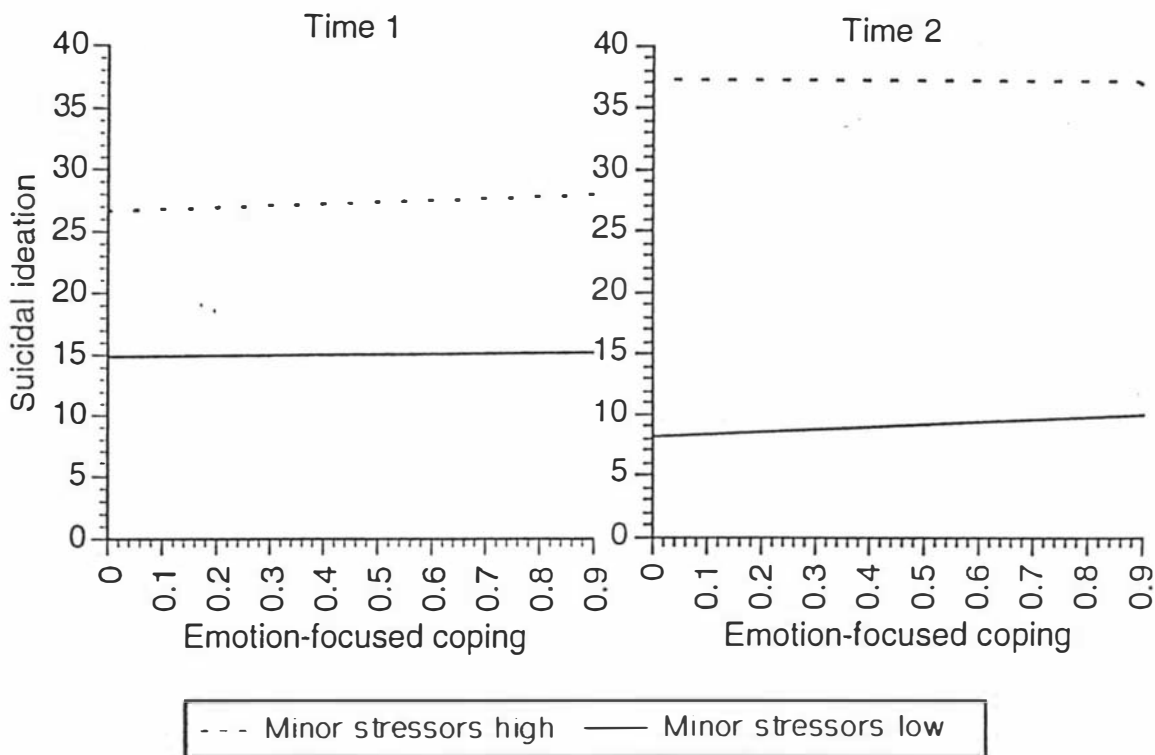


Figure 1: Regression lines for emotion-focused coping predicting suicidal ideation at high and low levels of minor stressors at Time 1 and Time 2.

Figure 1 shows that at Time 1 at low levels of minor stressors, emotion-focused coping has a negligible influence on the prediction of suicidal ideation. At high levels of minor stressors, however, the more emotion-focused coping is used to deal with these stressors, the higher the levels of suicidal ideation. At Time 2 the results are contradictory to those found at Time 1. At high levels of minor stressors the level of emotion-focused coping does not appear to influence the level of suicidal ideation. At low levels of minor stressors, however, the greater the use of emotion-focused coping the higher the level of suicidal ideation appears to be. An examination of the means of the major variables at both times for the dichotomised data revealed no irregularities which could explain this result. Further there was stability between the Time 1 and Time 2 group percentages of use of specific strategies in the coping dimensions and therefore variability of specific coping strategies over time is unlikely to explain this result. It should also be noted that these interactions explained very small amounts of additional variance in suicidal ideation. Overall the effect found at Time 1 which was in the direction expected was not replicated with the Time 2 data and therefore both results must be viewed with caution.

6.3.5 Depression, minor stressors and coping

Previous results showed that minor stressors impact on suicidal ideation to the extent that they activate depression. These findings raise the possibility that coping behaviour may influence suicidal ideation by interacting with minor stressors to moderate their effect on depression. To examine this product-term regression analysis (Finney et al., 1984) was used. Deviation scores were calculated for minor stressors and both foci of coping. Two cross-product scores

were then calculated: minor stressors by emotion-focused coping and minor stressors by problem-focused coping. The deviation score for minor stressors was entered on the first step of an hierarchical multiple regression predicting depression. The deviation scores for emotion-focused coping and problem-focused coping were entered on the second step and then the two cross-product terms were entered on the final step. The results of this product-term regression analysis at both Time 1 and Time 2 are presented in Table 12.

Table 12: Results of the product-term regression analysis with minor stressors, focus of coping and the interaction term predicting to depression at Time 1 (N = 395) and Time 2 (N = 334)

| Step | Variable | ΔR^2 | β |
|---------------|-------------------|--------------|---------|
| Time 1 | | | |
| 1 | Minor stressors | .3239** | .5345** |
| 2 | EFC | | .1507** |
| | PFC | .0358** | -.1087* |
| 3 | Minor stressors X | | |
| | EFC | | .1460** |
| | PFC | .0301** | -.0967 |
| Time 2 | | | |
| 1 | Minor stressors | .2209** | .4738** |
| 2 | EFC | | .0448 |
| | PFC | .0088 | -.0843 |
| 3 | Minor stressors X | | |
| | EFC | | -.0042 |
| | PFC | .0004 | -.0196 |

* $p < .01$ ** $p < .001$

EFC = emotion-focused coping, PFC = problem-focused coping

Table 12 shows that at Time 1, focus of coping interacts with minor stressors to account for an additional 3% of the variance in depression. The interaction between emotion-focused coping and minor stressors is more influential than that between problem-focused coping and minor stressors in accounting for this

effect. This is not the case at Time 2 where minor stressors accounted for 22% of the variance in depression but neither focus of coping nor the interaction between minor stressors and focus of coping significantly accounted for any further variance in depression. It is of note that the mean levels of minor stressors and depression were significantly lower at Time 2 than at Time 1 as evidenced in Table 4. These lower levels and the lower inter-correlations between these variables at Time 2 shown by the results in Table 5, may be reflected in the results of the product-term regression analysis at Time 2.

To examine the interaction between minor stressors and emotion-focused coping at Time 1 minor stressors were dichotomised at their median and the effects of emotion-focused coping behaviour in influencing the relationship between minor stressors and depression at high and low levels of minor stressors were analysed. This involved conducting two standard multiple regressions predicting depression at high and low levels of minor stressors. In both of these multiple regressions the two foci of coping were entered on the same step in order to gain the slope of the regression line for emotion-focused coping and also the intercept point. The regression lines for emotion-focused coping predicting depression at high and low levels of minor stressors are presented in Figure 2.

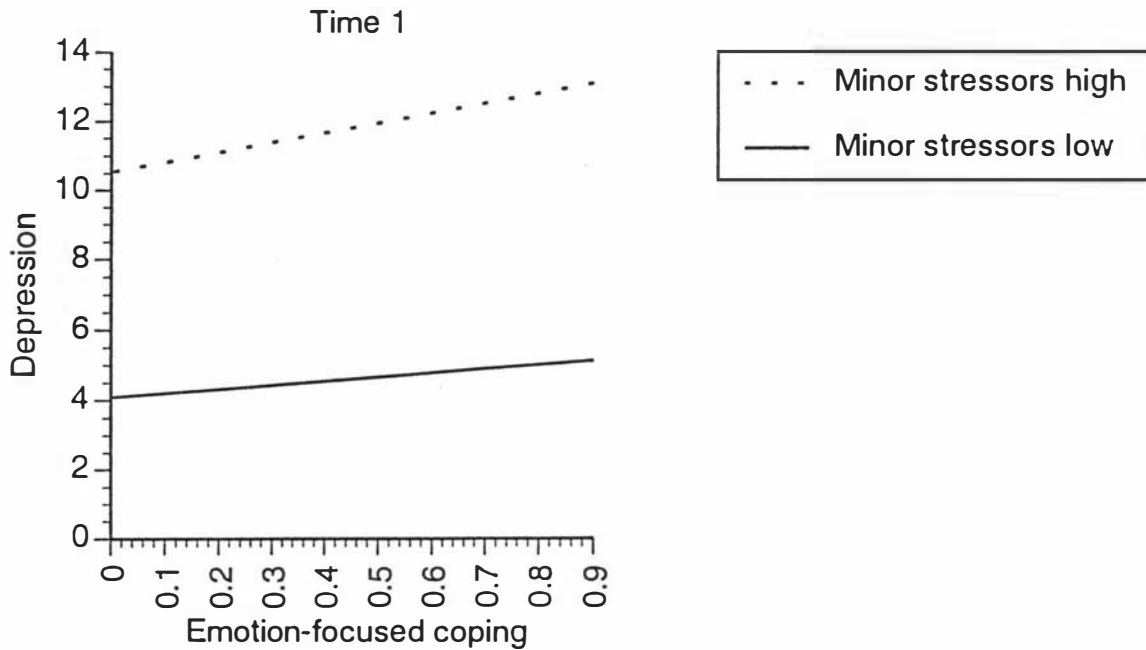


Figure 2: Regression lines for emotion-focused coping predicting depression at Time 1, at high and low levels of minor stressors.

Figure 2 shows that at low levels of minor stressors, as the use of emotion-focused coping increases, the level of depression also increases slightly. At high levels of minor stressors, as the use of emotion-focused coping increases, the level of depression also increases but at a rate approximately three times greater than at low levels of minor stressors. These results illustrate the interaction between emotion-focused coping and minor stressors predicting depression. They suggest that the use of emotion-focused coping to deal with high levels of minor stressors increases the likelihood of experiencing high levels of depression. This likelihood is higher than when emotion-focused coping is used to deal with low levels of minor stressors. At Time 2, however, minor stressors did not interact with focus of coping to predict depression and this may be a function of the lower levels of minor stressors, depression and focus of coping at this time. The different results at Time 1 and Time 2 suggest therefore, that any conclusions

about the effects coping behaviour has on the minor stressor-depression relationship must be made with caution.

6.3.6 Summary of Part 2 results

Part 2 of the results section provided an investigation of the inter-relationships between current suicidal ideation and minor stressors, depression, hopelessness and focus of coping in a non-clinical sample. This investigation indicated that depression and hopelessness predict suicidal ideation, but that of the two, depression has the greater influence. This is further indicated by the results showing minor stressors impact on suicidal ideation to the extent that they activate depression and that the relationship which depression has with suicidal ideation is not substantially affected when the effects of hopelessness on depression are controlled.

The relationship between minor stressors and suicidal ideation was modified by emotion-focused coping but the results at Time 1 and 2 were contradictory. At Time 1 the more emotion-focused coping was used to deal with high minor stressors, the greater the levels of suicidal ideation appeared to be. At Time 2, however, this was reversed; the more emotion-focused coping was used at low levels of minor stressors the greater the level of suicidal ideation became. This may be the result of lower levels of minor stressors, suicidal ideation and foci of coping use at this time. The lower levels of the major variables at Time 2 may have also influenced the findings for the effect focus of coping has on the relationship between minor stressors and depression. These showed that at Time 1 emotion-focused coping interacted with minor stressors to predict depression

but did not do so at Time 2. Of note was the lack of influence which problem-focused coping had on the relationships between minor stressors and suicidal ideation and minor stressors and depression. Problem-focused coping was not correlated with any of these variables, but was correlated with hopelessness. These results suggest that actively doing something about the specific stressors being faced may not influence feelings of depression and suicidal ideation.

Overall, the results presented in Part 2 support the hypothesis that depression is a better predictor than hopelessness of suicidal ideation in a non-clinical sample. They show that minor stressors impact on suicidal ideation through the activation of depression and that emotion-focused coping influences the relationships between minor stressors and both suicidal ideation and depression. The possibility that these findings extend to the prediction of further suicidal ideation is investigated in Part 3.

PART 3

6.4 The prediction of further suicidal ideation

Previous research has indicated that minor stressors, depression and hopelessness are all likely to be associated with further suicidal ideation (*suicidal ideation at follow-up controlling for the effects of prior suicidal ideation*). As with current suicidal ideation it is likely that these variables will be present and inter-related at any given moment. It is also likely that suicidal ideation at Time 1 and focus of coping used at Time 1 will be associated with further suicidal ideation. In order to initially examine these associations, correlations between the Time 1 variables and suicidal ideation at Time 2 were calculated and are presented in Table 13.

Table 13: Correlations between suicidal ideation at Time 2 and all Time 1 variables (N = 346)

| Variable | Correlation with suicidal ideation at Time 2 |
|------------------------|--|
| Time 1 | |
| Suicidal ideation | .65 ** |
| Minor stressors | .39 ** |
| Depression | .46 ** |
| Hopelessness | .40 ** |
| Emotion-focused coping | .13 * |
| Problem-focused coping | .08 |

* p < .01 ** p < .001

The correlations in Table 12 show that suicidal ideation, minor stressors, depression, hopelessness and emotion-focused coping at Time 1 are significantly related with suicidal ideation at Time 2. As predicted, depression was more

strongly correlated with suicidal ideation at Time 2 than was hopelessness. Also, as expected, suicidal ideation at Time 1 was highly correlated with suicidal ideation at Time 2. These results are consistent with the pattern of correlations found between current suicidal ideation and minor stressors, depression, hopelessness, and focus of coping presented in Table 5. The magnitude of the correlations between these variables and current suicidal ideation is similar to that found with further suicidal ideation.

To ascertain the relative degree of association that each of the Time 1 independent variables had with further suicidal ideation, hierarchical multiple regression analysis was used. To control the effects of suicidal ideation at Time 1 and minor stressors, depression, hopelessness and focus of coping at Time 2, these variables were entered on the first step of the multiple regression. Minor stressors, depression, hopelessness and foci of coping at Time 1 were then entered on the second step of the multiple regression. These results are presented in Table 14.

Table 14: Results of hierarchical multiple regression analysis with the Time 1 variables predicting to suicidal ideation at Time 2, with the Time 2 variables and suicidal ideation at Time 1 controlled

| Step | Variable | β |
|------|--|----------|
| 1 | Control variables | |
| | Minor stressors 2 | .1179* |
| | Depression 2 | .0874 |
| | Hopelessness 2 | .1006 |
| | Emotion-focused coping 2 | .0109 |
| | Problem-focused coping 2 | -.0634 |
| | Suicidal ideation 1 | .6587** |
| | (adj R^2 = .6199, $F(6,318)$ = 86.454**) | |
| 2 | Time 1 variables | |
| | Minor stressors | .0660 |
| | Depression | -.1993** |
| | Hopelessness | .0309 |
| | Emotion-focused coping | -.0040 |
| | Problem-focused coping | -.0687 |
| | (R sq change = .0214, $F(11,313)$ = 3.74*) | |

*p < .01 **p < .001

Suicidal ideation at Time 1 and minor stressors, depression, hopelessness, and foci of coping at Time 2 jointly accounted for 62% of the variance in suicidal ideation at Time 2. As expected suicidal ideation at Time 1 was the best predictor of suicidal ideation at Time 2. The Time 1 variables, as shown in Table 14, together account for a further 2% of the variance in suicidal ideation at Time 2. Of these variables, depression was the only significant predictor of further suicidal ideation, but surprisingly, this effect was in the opposite direction to that which would be expected. It suggests that low levels of depression are better predictors of further suicidal ideation than higher levels of depression. Also surprisingly, hopelessness did not contribute significantly to the prediction of further suicidal ideation. The amount of variance in suicidal ideation at Time 2, which is accounted for by the Time 1 variables once suicidal ideation at Time 1

and the independent variables at Time 2 are controlled is small. This raises the question of the conceptual significance of this result and suggests that it should be interpreted with caution. These results also suggest that concurrent minor stressors, depression, hopelessness, and focus of coping may have a greater effect on further suicidal ideation than prior levels of these variables. This possibility was investigated through hierarchical multiple regression analysis. To control for the effects of suicidal ideation, minor stressors, depression, hopelessness and focus of coping at Time 1, these variables were entered on the first step of the multiple regression. Minor stressors, depression, hopelessness and focus of coping at Time 2 were then entered on the second step of the multiple regression. These results are presented in Table 15.

Table 15: Hierarchical multiple regression analysis results with the Time 1 variables controlled and minor stressors, depression, hopelessness and focus of coping at Time 2 predicting suicidal ideation at Time 2

| Step | Variable | β |
|------|--|---------|
| 1 | Control variables | |
| | Minor stressors 1 | .1684** |
| | Depression 1 | -.1396* |
| | Hopelessness 1 | .0805 |
| | Emotion-focused coping 1 | .0168 |
| | Problem-focused coping 1 | -.0899 |
| | Suicidal ideation 1 | .7361** |
| | (adj R^2 = .5946 $F(6,318)$ = 80.194**) | |
| 2 | Time 2 variables | |
| | Minor stressors | .1018 |
| | Depression | .1432* |
| | Hopelessness | .0859 |
| | Emotion-focused coping | .0250 |
| | Problem-focused coping | -.0424 |
| | (adj R^2 change = .0393, $F(11,313)$ = 6.86**) | |

* $p < .01$ ** $p < .001$

The results in Table 15 show that suicidal ideation, minor stressors, depression, hopelessness and focus of coping at Time 1 together account for 60% of the variance in suicidal ideation at Time 2. Concurrent minor stressors, depression, hopelessness and focus of coping together account for a further 4% of the variance in suicidal ideation at Time 2. Concurrent depression is the only significant predictor of suicidal ideation at Time 2. The results in Tables 14 and 15 show that when the effects of suicidal ideation at Time 1 are controlled, the Time 2 variables together account for twice the amount of variance in suicidal ideation at Time 2 than do the Time 1 variables. These results support the proposition that concurrent levels of minor stressors, depression, hopelessness and focus of coping have more effect on further suicidal ideation than do their prior levels.

6.4.1 Further suicidal ideation, minor stressors and focus of coping

Previously it was found that emotion-focused coping modified the effect of minor stressors on current suicidal ideation. The nature of this interaction was not consistent at both measurement times. This relationship, however, was also investigated here with regard to further suicidal ideation. To undertake this a product-term regression analysis (Finney et al., 1984) was conducted. This involved calculating deviation scores for minor stressors and each focus of coping at Time 1. Two cross-products were then calculated using the above deviation scores. These were minor stressors by emotion-focused coping and minor stressors by problem-focused coping. In order to control for the effects of suicidal ideation at Time 1 and also the effects of minor stressors, foci of coping and their interaction at Time 2, these variables were entered on the first step of

a multiple regression with suicidal ideation at Time 2 as the dependent variable. The deviation scores for minor stressors at Time 1 were entered next, followed by the deviation scores for emotion-focused and problem-focused coping. Finally the cross-product terms were entered. The results of this product-term regression analysis are presented in Table 16.

Table 16: Results of the product-term regression analysis with minor stressors, focus of coping and the interaction term at Time 1 predicting to suicidal ideation at Time 2 (N = 325), with the effects of prior suicidal ideation and the current effects of these variables controlled.

| Step | Variable (Time) | ΔR^2 | β |
|------|-----------------------|--------------|---------|
| 1 | Suicidal ideation (1) | | .7060** |
| | Minor stressors (2) | | .1581** |
| | EFC (2) | | .0032 |
| | PFC (2) | | -.1156* |
| | Minor stressors (2) X | | |
| | EFC (2) | | .1119* |
| | PFC (2) | .5748** | -.1596* |
| | | | |
| 2 | Minor stressors (1) | .0003 | .0238 |
| 3 | EFC (1) | | -.0102 |
| | PFC (1) | .0017 | -.0428 |
| 4 | Minor stressors (1) X | | |
| | EFC (1) | | .0400 |
| | PFC (1) | .0015 | -.0093 |

** p < .001
EFC = emotion-focused coping, PFC = problem-focused coping

The results in Table 16 show that suicidal ideation at Time 1, and minor stressors, foci of coping and the interaction between minor stressors and coping at Time 2 together account for 57% of the variance in suicidal ideation at Time 2. When minor stressors, foci of coping and their interaction at Time 1 are entered they do not account for any further variance in suicidal ideation at Time 2. This suggests that the focus of coping used to deal with previously

experienced minor stressors does not modify the relationship these stressors have with further suicidal ideation.

The results in Table 16 also suggest that the concurrent effects of minor stressors, focus of coping and their interaction are stronger than their prior effects. To investigate this, the product-term regression analysis reported above was repeated. In order to control for prior effects, suicidal ideation at Time 1 and the deviation scores for minor stressors, focus of coping and their interaction at Time 1 were entered on the first step of the hierarchical multiple regression. The deviation scores for minor stressors at Time 2 were entered next, followed by the deviation scores for emotion-focused and problem-focused coping. Finally the cross-product terms at Time 2 were entered. The results of this product-term regression analysis are presented in Table 17.

Table 17: Results of the product-term regression analysis with minor stressors, focus of coping and the interaction term at Time 2 predicting to suicidal ideation at Time 2 (N = 325), with prior effects of suicidal ideation and these variables controlled.

| Step | Variable (Time) | ΔR^2 | β |
|------|-----------------------|--------------|-----------|
| 1 | Suicidal ideation (1) | | .7060 ** |
| | Minor stressors (1) | | .1381 * |
| | EFC (1) | | -.0255 |
| | PFC (1) | | -.0794 |
| | Minor stressors (1) X | | |
| | EFC (1) | | .0087 |
| | PFC (1) | .5148 ** | -.0381 |
| 2 | Minor stressors (2) | .0115 * | .1514 * |
| 3 | EFC (2) | | .0099 |
| | PFC (2) | .0071 | -.0915 |
| 4 | Minor stressors (2) X | | |
| | EFC (2) | | -.1161 * |
| | PFC (2) | .0359 ** | -.1566 ** |

* p < .01 ** p < .001
EFC = emotion-focused coping, PFC = problem-focused coping

The results in Table 17 show that suicidal ideation at Time 1, and minor stressors, foci of coping and the interaction between minor stressors and foci of coping at Time 1, together account for 51% of the variance of suicidal ideation at Time 2. The interaction between minor stressors and foci of coping at Time 2 accounts for an additional 3.6% of the variance in suicidal ideation at this time. These results indicate that the concurrent effects of the interaction between focus of coping and minor stressors are stronger than the prior effects of this interaction.

In this study, minor stressors were shown to influence current suicidal ideation to the extent that they activated depression. It is possible that minor stressors at Time 1 influence further suicidal ideation to the extent that they activate depression and hopelessness at Time 1. If this is the case then it is also possible that coping behaviour influences the effects of minor stressors on further suicidal ideation by modifying the relationships they have with depression and hopelessness. In order to examine this proposition, the contention that the relationship between minor stressors at Time 1 and further suicidal ideation is mediated by depression and hopelessness at Time 1 was investigated first, through partial correlation analysis. To calculate the partial correlations between further suicidal ideation and the independent variables a series of hierarchical multiple regressions were used. This was done to enable the effects of suicidal ideation at Time 1 and minor stressors, depression and hopelessness at Time 2 to be controlled where appropriate. For the hypothesis that depression mediates the relationship between minor stressors and further suicidal ideation three hierarchical regressions were conducted. In each regression the control variables

were entered on the first step and then the Time 1 independent variable (either depression or minor stressors) was entered on the next step and its partial correlation with further suicidal ideation calculated. This procedure was repeated to investigate the hypothesis that hopelessness mediated the relationship between minor stressors and further suicidal ideation. The partial correlations derived from these analyses are presented in Table 18.

Table 18: Partial correlations between further suicidal ideation and minor stressors, depression and hopelessness at Time 1, controlling the effects of suicidal ideation at Time 1, minor stressors, depression and hopelessness at Time 2.

| Variable | Controlling | Suicidal ideation (Time 2) |
|-----------------|---------------------|-------------------------------|
| Time 1 | | |
| Minor stressors | Suicidal ideation 1 | .02 |
| | Minor stressors 2 | |
| | Depression 2 | |
| Depression | Suicidal ideation 1 | -.10 |
| | Minor stressors 2 | |
| | Depression 2 | |
| Minor stressors | Suicidal ideation 1 | .06 |
| | Minor stressors 2 | |
| | Depression 2 | |
| | Depression 1 | |
| Time 1 | | |
| Minor stressors | Suicidal ideation 1 | .007 |
| | Minor stressors 2 | |
| | Hopelessness 2 | |
| Hopelessness | Suicidal ideation 1 | -.05 |
| | Minor stressors 2 | |
| | Hopelessness 2 | |
| Minor stressors | Suicidal ideation 1 | .01 |
| | Minor stressors 2 | |
| | Hopelessness 2 | |
| | Hopelessness 1 | |

The results in Table 18 indicate that with the effects of suicidal ideation and depression at Time 1 and minor stressors and depression at Time 2 controlled,

minor stressors at Time 1 do not have a significant correlation with suicidal ideation at Time 2. Further to this, depression at Time 1, with the effects of suicidal ideation at Time 1 and minor stressors and depression at Time 2 controlled, does not have a significant correlation with suicidal ideation at Time 2. These results therefore do not support the hypothesis that depression mediates the relationship between minor stressors at Time 1 and further suicidal ideation.

When the partial correlations for minor stressors and hopelessness with further suicidal ideation are examined in the same manner a similar pattern of results occur and, therefore, it does not appear that hopelessness mediates the relationship between minor stressors at Time 1 and further suicidal ideation.

The possibility that focus of coping influenced the relationship between minor stressors at Time 1 and further suicidal ideation via its effects on the relationship between minor stressors at Time 1 and depression and hopelessness was dependent on these variables mediating the minor stressor-further suicidal ideation relationship. The above results indicate that depression and hopelessness do not mediate the relationship between minor stressors at Time 1 and further suicidal ideation. The possibility that focus of coping modified the relationships between minor stressors at Time 1 and further depression and hopelessness, was not, therefore, investigated.

6.4.2 Summary of results for further suicidal ideation

Further suicidal ideation was defined as *suicidal ideation at follow-up controlling for the effects of prior suicidal ideation*. Statistically this was conceptualized as the variance in suicidal ideation at Time 2 which was not accounted for by suicidal ideation at Time 1.

Suicidal ideation at Time 1 accounted for a substantial amount of the variance in suicidal ideation at Time 2 and as expected was a better predictor than minor stressors, depression, hopelessness and focus of coping at Time 1.

The relative contribution that each of the Time 1 variables made to the prediction of further suicidal ideation was investigated next. Depression was the only independent variable that predicted further suicidal ideation, but the direction of this effect was opposite to what would have been expected. With prior effects of the Time 1 variables controlled, depression at Time 2 was the best predictor of suicidal ideation at that time. The effect that focus of coping had on the relationship between minor stressors at Time 1 and further suicidal ideation was examined. Focus of coping did not modify this relationship although it was expected so to do. Once again, with prior effects controlled, focus of coping at Time 2 interacted with minor stressors at this time to predict suicidal ideation. Finally, the possibility was examined that minor stressors at Time 1 influenced further suicidal ideation to the extent that they activated depression and hopelessness. Neither depression nor hopelessness mediated the relationship between minor stressors and further suicidal ideation. This result excluded the possibility of focus of coping influencing the relationship between minor stressors

and further suicidal ideation via its effects on the relationships between minor stressors at Time 1 and depression and hopelessness.

Overall, the results in Part 3 indicate that the relationships found between the independent variables and current suicidal ideation do not extend to the prediction of further suicidal ideation. What they do indicate is that concurrent levels of these variables are better predictors of further suicidal ideation than are their prior levels. They also indicate that current suicidal ideation is the best predictor of suicidal ideation at a later date.

CHAPTER SEVEN

Discussion

The intention of the present study was to further our understanding of the singular and collective relationships which minor stressors, depression, hopelessness and focus of coping have with suicidal ideation in a non-clinical sample. Suicidal ideation is the first step in the complex process which leads to more overt forms of suicidal behaviour such as attempted and completed suicide. Little is known, however, about the psychological variables which combine and interact to influence suicidal ideation in non-clinical samples. Although the level of suicidal ideation in these samples is generally lower than that found in clinical samples (Dixon et al., 1992), establishing a greater understanding of the environmental and intra-personal correlates of low-level suicidal ideation will enhance our ability to treat and prevent suicidal behaviour. Suicidal ideation and behaviour have been conceptualized as responses to stress associated with major negative life events. A further source of stress, minor stressors, is also likely to be associated with psychological outcome, but little is known about its relationship with suicidal ideation. This study attempted to extend previous research by examining the mechanisms through which minor stressors impact on suicidal ideation in a non-clinical sample. Beck's theory of depression (Beck, 1963, 1967) suggests that stress is one factor which activates cognitions of hopelessness and through this activation impacts on suicidal ideation. Empirical research with non-clinical samples suggests that stress also impacts on suicidal ideation through the activation of depression. Further, coping behaviour has been shown to be an integral part of dealing with stress and modifying the outcome of that stress. While this relationship has been shown to exist for a number of

mental health outcomes it has yet to be demonstrated for suicidal ideation. This study, therefore examined the inter-relationships between suicidal ideation, minor stressors, depression, hopelessness and coping behaviour. The first part of this chapter discusses the findings of the present research in relation to current suicidal ideation (suicidal ideation occurring at initial testing and follow-up, not controlling for the effects of prior suicidal ideation).

Much of the empirical research in relation to suicidal ideation has been cross-sectional and few attempts have been made to investigate whether relationships which exist cross-sectionally extend to the prediction of further suicidal ideation. The present research attempted to extend previous research by examining whether the relationships postulated to exist between current suicidal ideation, minor stressors, depression, hopelessness and coping behaviour extend to the prediction of further suicidal ideation. The second part of this chapter, therefore, discusses the present research findings in relation to further suicidal ideation (suicidal ideation at follow-up controlling for the effects of prior suicidal ideation). Although it was not an intention of this study to investigate treatment options, the implications of the results for treatment programmes are briefly discussed, and suggestions for future research are also made.

7.1.1 Current suicidal ideation, minor stressors, depression and hopelessness

Suicidal ideation has been conceptualized as a response to stress. Empirical research has generally focused on the relationship between major life events and suicidal ideation. This source of stress is associated with suicidal ideation but minor stressors have been shown to mediate the relationship between major life

events and outcome (DeLongis et al., 1982; Weinberger et al., 1987). The results of the present research indicate that minor stressors have a positive correlation with suicidal ideation in a non-clinical sample. This suggests they are a further source of stress which is related to suicidal ideation. This is consistent with the findings of Dixon et al. (1992) which is the only other study to have examined the relationship between minor stressors and suicidal ideation.

The mechanisms by which minor stressors influence suicidal ideation in a non-clinical sample are largely unknown. Beck's theory of depression (Beck, 1963, 1967), however, suggests that thoughts of hopelessness may be one mechanism. This theory indicates that thoughts of hopelessness are activated by stress and then increase the potential for suicidal behaviour. In non-clinical samples both depression and hopelessness have been shown to mediate the relationship between major negative life events and suicidal ideation (Dixon et al., 1992; Rudd, 1990). It is possible, therefore, that there are two mechanisms through which minor stressors influence suicidal ideation in such samples. The findings of this study show that depression and hopelessness both have positive correlations with suicidal ideation, and depression has the higher correlation of the two. This supports previous findings from non-clinical samples (Bonner & Rich, 1987, 1988a, 1988b; Schotte & Clum, 1982, 1987; Rudd, 1990) which have also shown that depression has a greater correlation than hopelessness with suicidal ideation. Together these two variables make a major contribution to the prediction of suicidal ideation. When the effects of minor stressors, hopelessness and focus of coping are controlled depression makes a greater contribution to suicidal ideation, than does hopelessness when the effects of

minor stressors, depression and focus of coping are controlled. This is consistent with previous research findings (Cole, 1988, 1989; Rudd, 1990; Schotte & Clum, 1982; Weishaar & Beck, 1992), and suggests that depression is more important than hopelessness in predicting low levels of suicidal ideation. When the effects of depression, hopelessness and foci of coping are controlled, minor stressors do not make a significant relative contribution to suicidal ideation. It appears that although they are correlated with suicidal ideation, this relationship is accounted for by the shared associations they have with both depression and hopelessness.

The results of the present study confirm that both depression and hopelessness are important correlates of suicidal ideation. As would be expected, depression and hopelessness are also correlated with each other. Beck (1963, 1967) suggests that the cognitive aspects of depression, particularly hopelessness, are more closely linked to suicidal behaviour than are the affective aspects of depression. This has consistently been demonstrated in clinical samples but not in non-clinical samples. A major finding of the present study is that the relationship between suicidal ideation and depression is not accounted for by the shared association both have with hopelessness. Depression is more closely linked than hopelessness with suicidal ideation. This result is consistent with the findings of previous research with non-clinical samples (Bonner & Rich, 1987; Cole, 1988, 1989; Schotte & Clum, 1982). Further to these findings, however, the results of the present research indicate that the relationship between suicidal ideation, depression and hopelessness is not dependent on the level of suicidal ideation. As the level of suicidal ideation increases, depression remains a better

predictor than hopelessness of suicidal ideation even at the highest levels of suicidal ideation in the sample. This result is not consistent with the findings of Schotte and Clum (1982) who conducted a similar analysis which focused on suicidal intent. What the results of the present study suggest, therefore, is that the level of suicidal ideation in non-clinical samples has a greater association with depression than it does with hopelessness. In such samples, depression is likely to be a better indicator than hopelessness of all levels of suicidal ideation. These results also suggest that there is a difference between non-clinical and clinical samples in presentation and experienced symptomatology which may have implications for the development of treatment and prevention programmes.

The role of hopelessness and its impact on low levels of suicidal ideation in non-clinical samples is also raised by the findings in this study. Hopelessness, in a non-clinical sample, does not relate to suicidal ideation and depression in the same manner as it does in clinical samples. The present sample was a young adult university student sample, and it has been suggested that hopelessness is qualitatively different in such groups (Cole, 1989). It is possible that the effects of hopelessness are reduced by the belief that upcoming events, such as holidays or moving out of town, may change a person's current situation. This may account for the differences in the way hopelessness relates with suicidal ideation and depression in such samples and also account for the low levels of hopelessness generally found in groups that are not in treatment (Dixon et al., 1991, 1992).

According to Beck (1963, 1967) minor stressors should impact on suicidal ideation to the extent that they activate thoughts of hopelessness. In non-clinical samples, however, hopelessness appears to have a less important role than depression in predicting suicidal ideation. This suggests that minor stressors may influence suicidal ideation in these samples through their activation of depression. A major finding of the present study is that depression mediated the relationship between minor stressors and suicidal ideation, but that hopelessness did not. It appears that if minor stressors result in depression, then the opportunity for suicidal thoughts to develop is provided. The only other research to examine the relationship between minor stressors and suicidal ideation in a non-clinical sample (Dixon et al., 1992) found that hopelessness mediated this relationship. These researchers, however, did not measure depression and the present results indicate that depression rather than hopelessness mediates the relationship between minor stressors and suicidal ideation. Although other research (Rudd, 1990) has shown both depression and hopelessness to mediate the relationship between major life events and suicidal ideation in a non-clinical sample, it did not measure minor stressors. It is possible that minor stressors influence cognitions about oneself and the world rather than cognitions about the future. The findings of the present research suggest that it is the other aspects of depression rather than the cognitions about the future which account for the relationship between depression and suicidal ideation in a non-clinical sample. Minor stressors by themselves, do not influence suicidal ideation but it appears that if they activate the emotional state of depression then this provides fertile ground for thoughts of suicide to develop.

7.1.2 Current suicidal ideation, minor stressors, depression and focus of coping

The results of the present study clarify the mechanisms by which minor stressors impact on suicidal ideation in a non-clinical sample. Coping behaviour is an integral part of dealing with stressors and the present results also indicate potential avenues where coping behaviour impacts on suicidal ideation. The fact that hopelessness does not mediate the relationship between minor stressors and suicidal ideation clarifies the mechanisms that could potentially allow coping to affect low levels of suicidal ideation. These are more likely to be through the effects on depression rather than through the effects on hopelessness.

Minor stressors are associated with suicidal ideation in a non-clinical sample, and previous research (Aldwin & Revenson, 1987; Billings & Moos, 1984, 1985; Mitchell et al., 1983; Pearlin et al., 1981) indicates that coping behaviour interacts with stress to modify health outcomes. To date, this has not been demonstrated with suicidal ideation and the present study investigates this issue. Two foci of coping have been shown to be associated with suicidal behaviour. The use of emotion-focused coping in suicidal behaviour groups is higher than in non-suicidal control groups, while the use of problem-focused coping is lower in suicidal groups (Puskar et al., 1992; Scholz & Pfeffer, 1987; Thomssen & Moller, 1988). In the present research, emotion-focused coping is significantly correlated with suicidal ideation and depression, confirming earlier findings that greater use of emotion-focused coping is associated with greater levels of suicidal ideation. Problem-focused coping, however, is not correlated with suicidal ideation and this is unexpected because previous research suggests that its use would likely be associated with lower levels of suicidal ideation.

Minor stressors are associated with current suicidal ideation and attempts to cope with these stressors were expected to impact on the relationship they had with suicidal ideation. The results of this study show that emotion-focused coping interacts with minor stressors to predict suicidal ideation, but problem-focused coping does not. The use of emotion-focused coping to deal with low levels of minor stressors has little effect on suicidal ideation; its use in dealing with high levels of minor stressors, however, results in increased levels of suicidal ideation. These results extend previous findings in several respects. They indicate that this effect is dependent on the level of stress being experienced, and that the use of emotion-focused coping per se does not necessarily mean that negative outcomes will arise. If used in times of high stress, however, then the possibility of higher levels of suicidal ideation is increased. It also suggests that the use of emotion-focused coping may have a paradoxical effect when stress is high, in that its use increases suicidal ideation rather than decreasing it.

Problem-focused coping does not interact with minor stressors to modify their relationship with suicidal ideation in a non-clinical sample. Problem-focused coping is also not correlated with minor stressors. This could suggest that it is not the preferred foci of coping used to deal with minor stressors. As such its impact on outcome is negligible and it would be unlikely to reduce the effects of minor stressors on suicidal ideation.

These research findings raise the possibility that the way a person deals with minor stressors has some influence on the relationship between these stressors and suicidal ideation in a non-clinical sample. The implications from previous

research (Puskar et al., 1992; Scholz & Pfeffer, 1987; Thomssen & Moller, 1988) and the results of this study indicate that the use of emotion-focused coping to deal with high levels of minor stressors impacts on the experienced level of suicidal ideation. The mechanisms by which this impact occurs are largely unknown, but it is known that coping behaviour modifies the relationship between stress and depression (Billings & Moos, 1984, 1985; Mitchell et al., 1983). In the present research the relationship between minor stressors and suicidal ideation is mediated by depression. It is possible, therefore, that coping behaviour impacts on suicidal ideation by modifying the effects which minor stressors have on depression. The results of the present research provide an interesting but ambiguous picture in this regard. At follow-up neither type of coping behaviour interacted with minor stressors to predict depression. It is possible that the significant lower levels of minor stressors and depression and the general reduction in correlations between all variables at this time may have made interaction effects difficult to detect (Cohen & Cohen, 1983). At initial data collection emotion-focused coping did interact with minor stressors to modify the relationship with depression. The greater use of emotion-focused coping to deal with low levels of minor stressors results in greater levels of depression. This effect is accentuated markedly, however, when emotion-focused coping is used to cope with high levels of minor stressors. This result is consistent with previous research findings (Folkman & Lazarus, 1986; Mitchell et al., 1983) which have shown that those who are depressed use emotion-focused coping more than those who are not depressed. What is new, however, is the fact that at higher levels of minor stressors, the greater the use of emotion-focused coping the more accentuated the effect becomes. These results suggest that those

whose preferred style of coping is emotion-focused are at greater risk of developing depression when they are experiencing high levels of minor stressors. This would also place them at higher risk of experiencing suicidal ideation since depression mediates the relationship between minor stressors and suicidal ideation.

7.1.3 Summary of the inter-relationships between current suicidal ideation, minor stressors, depression, hopelessness and focus of coping.

Beck (1963, 1967) postulates that specific cognitive aspects of depression are more closely linked to suicide than are affective aspects of depression. He particularly focuses on pessimism and hopelessness about the future. Thoughts of suicide are generated to the degree that these cognitions are activated by stress. A wealth of empirical research with clinical samples has shown that the cognitive aspects of depression, rather than the affective aspects are linked to all forms of suicidal behaviour from ideation through to completed suicide. In non-clinical samples, however, this is not generally the case. Hopelessness does not account for the relationship between depression and suicidal ideation. In these samples the affective components and other cognitive aspects of depression appear to be more important than hopelessness. The results of the present research support earlier findings in two respects. Depression has a greater relative association than hopelessness with suicidal ideation and at all levels of suicidal ideation the affective components of depression remain associated with suicidal ideation when the cognitive aspects (hopelessness) are partialled out. Second, the relationship between minor stressors and suicidal ideation is mediated by depression but not by hopelessness. When the affective

state of depression is activated by minor stressors it provides the foundation for the development of suicidal thoughts. This may indicate several things: first, that in a group of young adult university students hopelessness is qualitatively different and the thoughts of upcoming life events, such as finishing a degree, may attenuate thoughts of hopelessness and reduce their deleterious effects. Second the level of suicidal ideation is generally lower in non-clinical samples (Dixon et al., 1992) and it may be that it is only at higher levels of suicidal ideation that the role of hopelessness becomes more important than depression. What is apparent from the present results, however, is that those in non-clinical samples have a difference in presentation and experienced symptomatology from those in clinical samples. In non-clinical samples depression has clearly a more important role than hopelessness.

Minor stressors are associated with suicidal ideation and depression, but when the effects of depression are partialled out the association between these stressors and suicidal ideation is reduced substantially. This indicates that feelings of depression link minor stressors with suicidal ideation. In addition negative cognitions about the future (hopelessness) do not link minor stressors with suicidal ideation in a non-clinical sample. This clarifies the paths by which minor stressors impact on suicidal ideation in such samples. Beck (1963, 1967) postulates that stress is one factor which triggers thoughts of hopelessness and therefore increases an individual's risk of suicidal behaviour. The results of the present research, however, suggest that minor stressors are one aspect which triggers depression, and it is depression and not hopelessness, that links minor stressors with suicidal ideation in non-clinical samples. This finding also clarifies

the path by which coping behaviour may impact on suicidal ideation. The results of the present research indicate that emotion-focused coping modifies the relationship between minor stressors and depression; problem-focused coping does not modify this relationship. This suggests that actively dealing with stressors may not impact on feelings of depression or thoughts of suicide in a non-clinical sample. The use of emotion-focused coping to deal with minor stressors, paradoxically, increases the levels of depression and suicidal ideation. This is a major issue; coping behaviour should buffer the effects of stress on outcome (Aldwin & Revenson, 1987), the results of this study may suggest that emotion-focused coping is not effective in doing this.

Of note is the pattern of relationships which problem-focused coping has with these variables. It has no correlation with depression or suicidal ideation, but it does have a negative relationship with hopelessness. This suggests that the use of problem-focused coping may result in reduced thoughts that the future is dark and unchangeable. Certainly the research on problem-solving behaviour (Schotte & Clum, 1982, 1987; Clum et al., 1979, Dixon et al. 1991) which indicates that problem-solving ability interacts with stress to influence the level of hopelessness an individual experiences, would support this. Conversely, these results may also suggest that reduced levels of hopelessness enable the greater use of problem-focused coping because these active strategies are viewed as likely to influence future outcome.

This study conceptualises both foci of coping as dimensions of coping behaviour and argues that individuals have some consistency in the focus of coping they

use to deal with a variety of situations or stressors. It may be that a preference for the use of emotion-focused coping will exacerbate the experience of minor stressors, leading to depression and further exposure to minor stressors. Continued use of emotion-focused coping may lead to further feelings of depression and hopelessness and ultimately to suicidal ideation. The results of this study indicate that those whose preference is to use emotion-focused coping in times of high stress have an increased chance of developing depression and suicidal ideation. These possibilities are tested in the present study through the use of a prospective design and the results will be examined below.

7.2.1 Further suicidal ideation and prior minor stressors, depression, and hopelessness.

The use of prospective research designs in the study of suicidal ideation is rare and the final aims of this study centre around whether those relationships found between current suicidal ideation and minor stressors, depression, hopelessness and focus of coping also predict further suicidal ideation.

If suicidal ideation is a response to stress it would be expected that minor stressors be associated with further suicidal ideation in a non-clinical sample. Beck (1963, 1967) suggests that hopelessness should also be associated with further suicidal behaviour and although not examined in a non-clinical sample previously, empirical support for this comes from research in the clinical area (Beck et al., 1985, 1989). In addition empirical research findings with non-clinical samples, including the present research, indicate that depression is a better

predictor of current suicidal ideation than hopelessness. Therefore it would be expected that depression also be associated with further suicidal ideation.

In this study suicidal ideation, minor stressors, depression and hopelessness at initial testing all have significant positive correlations with suicidal ideation at follow-up. The relative degree of association each of these variables have with suicidal ideation at follow-up, with their concurrent effects controlled is examined. In this setting the only significant contributors to suicidal ideation at follow-up are suicidal ideation and depression at initial testing.

The finding that prior suicidal ideation predicts suicidal ideation at follow-up is consistent with previous research in clinical samples (Beck et al., 1985; Petrie, 1983), which indicates that previous suicidal behaviour is a major predictor of further suicidal behaviour. The relationship of prior depression with further suicidal ideation, in the present study, is in the opposite direction to that expected. Low levels of prior depression are associated with higher levels of further suicidal ideation. This is contrary to the results found in the cross-sectional data, and opposite to the correlation depression has with further suicidal ideation. Theoretically this result would not be expected to occur. Higher levels of depression should be associated with higher levels of suicidal ideation. Given the weight of past research findings, theoretical considerations and the very small amount of variance in further suicidal ideation which prior depression explains, this finding is not likely to be reliable.

Prior hopelessness is not influential in the prediction of further suicidal ideation. This is unexpected because the cross-sectional results of this study suggest that it should predict further suicidal ideation. Prior minor stressors are also not significant indicators of further suicidal ideation when the effects of prior depression and hopelessness are controlled. These results indicate that the prior states of minor stressors, depression and hopelessness do not have a major influence on further suicidal ideation when the effects of their concurrent states are controlled. The results do indicate, however, that with prior states of these variables controlled, concurrent depression does predict further suicidal ideation but the other variables do not. Thus concurrent states of depression are more influential in the prediction of further suicidal ideation than prior states of depression.

7.2.2 Further suicidal ideation, prior minor stressors, depression, hopelessness and focus of coping

The effects of stress have been shown to be modified over time by coping behaviour (Aldwin & Revenson, 1987; Billings & Moos, 1984, 1985; Mitchell et al., 1983). In the present research, emotion-focused coping modifies the relationship between minor stressors and current suicidal ideation. This study also examines whether this extends to further suicidal ideation.

This study found that neither foci of coping interacted with prior minor stressors to predict further suicidal ideation. This suggests that an individual's preferred focus of coping does not interact with prior stressors to directly effect long-term outcome. This finding could be explained in two ways. First, controlling for the

effects of prior suicidal ideation and concurrent minor stressors and focus of coping may result in difficulty in detecting any interaction effects by reducing the amount of variance to be explained (Aldwin & Revenson, 1987; Cleary & Kessler, 1982). Second, previous research suggests that coping behaviour is a crucial element in dealing with stress and that it can modify the effects of this stress over time. Although emotion-focused coping has an effect on the relationship between minor stressors and current suicidal ideation it does not have an effect on the relationship between prior minor stressors and further suicidal ideation. This suggests that the effects of focus of coping on the relationship between minor stressors and mental health outcome are immediate rather than long-term. Further, with prior effects of focus of coping on the relationship between prior minor stressors and further suicidal ideation controlled, concurrent coping interacts with concurrent minor stressors to predict further suicidal ideation. This suggests that previous attempts to cope with previous stressors have less of an influence on further suicidal ideation than current attempts to deal with current stressors.

It was hypothesised that depression and hopelessness would mediate the relationship between prior minor stressors and further suicidal ideation. If these relationships exist, then focus of coping could influence further suicidal ideation by interacting with minor stressors to affect its relationship with further depression and hopelessness. Findings indicate that the relationship between prior minor stressors and further suicidal ideation is not mediated by depression or hopelessness. These results suggest that the finding that depression mediates the relationship between minor stressors and current suicidal ideation does not

extend to the prediction of further suicidal ideation. This could suggest that minor stressors have an impact on current suicidal ideation through the activation of depression, but this immediate activation does not extend to predicting further suicidal ideation. Results here suggest, however, that once thoughts of suicide have developed they are the best predictors of thoughts of suicide at a later time. While depression does not mediate the relationship between prior minor stressors and further suicidal ideation, it may still impact on the development of further suicidal ideation by providing the impetus for the development of current suicidal ideation.

7.2.3 Summary of further suicidal ideation

Further suicidal ideation is defined as suicidal ideation at follow-up controlling for the effects of prior suicidal ideation. The purpose of this section is to investigate whether the relationships between current suicidal ideation, minor stressors, depression, hopelessness and focus of coping extends to the prediction of further suicidal ideation. In general these expectations are not supported. Prior suicidal ideation is a significant predictor of ideation at follow-up and no other prior variables have any direct influence. Previous research with clinical samples (Beck et al., 1985, 1989) and non-clinical samples (Goldney et al., 1991) suggests that both hopelessness and depression should predict further suicidal ideation. The present findings suggest that prior states of these variables do not predict further suicidal ideation but that the concurrent state of depression does. Coping behaviour does not interact with minor stressors to modify the relationship these stressors have with further suicidal ideation, but once again when prior effects are controlled, concurrent coping interacts with concurrent minor stressors to

predict further suicidal ideation. Previous research (Aldwin & Revenson, 1987; Billings & Moos, 1984, 1985) suggests that coping behaviour should modify the effects of stress on long-term health outcome. These studies have focused on major life events as a source of stress, however, and although coping behaviour may modify the effects of this source of stress over time it is possible that it does not do this for minor stressors. The findings of this research suggest that the major impacts on further suicidal ideation come from concurrent effects of coping on minor stressors rather than prior effects. Finally, neither depression nor hopelessness mediates the relationship between prior stressors and further suicidal ideation.

Taken together these results indicate several things. First, the relationships found between current suicidal ideation minor stressors, depression, hopelessness and coping behaviour do not extend to the prediction of further suicidal ideation. This means that prior levels of these variables do not impact directly on further suicidal ideation. Second, concurrent states of these variables rather than prior states appear to influence further suicidal ideation. Finally, concurrent states of depression appear more important than concurrent states of hopelessness in predicting further suicidal ideation.

7.3. Conclusions and Implications

What then do the findings of the present study for both current and further suicidal ideation mean for a greater understanding of suicidal ideation in a non-clinical sample? First, it should be remembered that levels of suicidal ideation in these samples are generally lower than those found in clinical samples. Although this in itself may explain some of the differences between findings with these different samples, it also provides the opportunity to examine the beginning stages of the suicide process. Developing greater understanding of the factors which influence suicidal ideation in non-clinical samples, therefore, contributes to understanding the early stages of the suicide process. The findings of the present research contribute to this understanding through the proposal of an interactive model of suicidal ideation in a non-clinical sample. This model differs from previous models (Bonner & Rich, 1987; Schotte & Clum, 1982; Rudd, 1990) in that it includes minor stressors and coping behaviour. This model indicates that minor stressors are a source of stress which is associated with suicidal ideation in non-clinical samples. The use of emotion-focused coping will interact with these stressors to influence feelings of depression. Paradoxically the use of emotion-focused coping to deal with high levels of minor stressors results in higher rather than lower levels of depression. These feelings of depression will subsequently be associated with low levels of suicidal ideation. The feelings of depression could further combine with thoughts of hopelessness to lead to higher levels of suicidal ideation. It is conceivable that thoughts of suicide would result in an increase in minor stressors, and subsequently an increase in the use of emotion-focused coping to deal with these stressors could result in higher levels of suicidal ideation. The mechanisms by which this process leads beyond suicidal

ideation to attempted and/or completed suicide cannot be determined from the results of this study. It could be speculated, however, that increased levels of hopelessness is one mechanism. It is clear from past research (Bonner & Rich, 1987, 1988a; Schotte & Clum, 1982) that hopelessness is a good predictor of higher levels of suicidal ideation in non-clinical samples, and certainly in clinical samples the crucial nature of hopelessness is evident in the suicide process.

In this model depression mediates the relationship between minor stressors and suicidal ideation and therefore, depression is the mechanism through which minor stressors influence suicidal ideation. This differs from the mechanism through which major negative life events influence suicidal ideation. The models of Bonner and Rich (1987), Schotte and Clum (1982) and Rudd (1990) all indicate that major life events impact on suicidal ideation through their activation of hopelessness rather than depression. Only one of these models, (Schotte & Clum, 1982), has examined the effects of attempts to deal with these events, on suicidal ideation. Their model is based around the influence that problem-solving behaviour has on suicidal ideation. The use of problem-solving behaviour to deal with stress influences suicidal ideation through its impact on the relationship between stress and hopelessness. In the present model, however, attempts to deal with minor stressors influence suicidal ideation through their effects on the relationship between minor stressors and depression, rather than through the relationship between minor stressors and hopelessness. This model therefore differs from that of Schotte and Clum (1982) in several respects. First, it focuses on the relationship between minor stressors and suicidal ideation rather than the relationship between major life events and suicidal ideation. Second, the

attempts to deal with stress differ. This model highlights the importance of attempts to maintain affective equilibrium (emotion-focused coping) rather than attempts to deal actively and behaviourally with the problem (problem-solving behaviour). Finally, the mechanisms through which these attempts to deal with stress influence suicidal ideation are different. Emotion-focused coping impacts on the relationship between minor stressors and depression but problem-solving behaviour impacts on the relationship between stress and hopelessness.

The prospective nature of the current study indicates that the model does not extend to the prediction of further suicidal ideation. It has clarified, however, that concurrent states of minor stressors, depression, emotion-focused coping and their interactions are more influential in the prediction of further suicidal ideation than are their prior states.

The proposed interactive model could best be conceptualized as a model of low level suicidal ideation, with this suicidal ideation, once activated, increasing the potential risk of further suicidal ideation and behaviour. Its value, therefore, lies in the identification of factors which influence low level suicidal ideation and subsequently provide avenues for intervention. One factor, depression, is clearly a good predictor of low level suicidal ideation. Minor stressors in non-clinical samples contribute to the activation of depression and the use of emotion-focused coping to deal with these stressors results in higher levels of depression. This has implications for early intervention programmes aimed at reducing the risk of further suicidal behaviour.

Although it was not the intention of this study to consider treatment and prevention options, the results do suggest some possibilities. First, concurrent states of depression rather than prior states appear to be more important in predicting further suicidal ideation. The model presented above appears to predict further suicidal ideation concurrently but not prospectively. This means that how people cope with the minor stressors they are currently experiencing is more important than how they have coped with prior stressors, for indicating their current levels of depression and suicidal ideation. Also a preference for the use of emotion-focused coping in times of high stress is a possible risk factor for the development of both depression and suicidal ideation. Interventions aimed at assisting individuals to utilize other forms of coping could provide a general basis for prevention strategies. The two factors most closely associated with low levels of suicidal ideation are depression and hopelessness. Of these, depression is the most important suggesting that psychological interventions aimed at reducing the experienced levels of depression may be most effective in reducing levels of suicidal ideation. Within a cognitive-behavioral framework (Beck et al., 1979), these results suggest that rather than focusing on thoughts of hopelessness, the other two components of the cognitive triad, negative views of one-self and the world, may provide useful avenues for intervention. It should be remembered, however, that in clinical samples hopelessness remains the key variable linking depression with suicidal behaviour. When a person seeks treatment the level of their suicidal ideation may be such that hopelessness is a necessary focus of treatment (Freeman & White, 1989).

7.3.1 Implications for Future Research

This study found that emotion-focused coping influences the relationship between minor stressors and suicidal ideation. It would be useful to examine whether this relationship extends to clinical samples of ideators and attempters. Further, the findings of this study indicate that emotion-focused coping impacted on suicidal ideation via its effects on the stress-depression relationship, and whether this extends to clinical samples, or whether the stress-hopelessness relationship is more influential is an area that future research could usefully focus on.

Maori are over-represented in the statistics for attempted and completed suicide (Antoniadis, 1988). They were under-represented in the sample of this study and this is likely to be a reflection of their general under-representation in tertiary education institutions. Maori have a culturally different view of health, which incorporates the mental, physical, spiritual, and family dimensions of a person (Durie, 1984). If any one of these areas is not being nourished then the overall well-being of the individual may be jeopardised. Within this context, many of the attributes which Europeans equate with mental health, such as self-assertion and independence, may represent mental ill-health in Maori. Future research therefore, could usefully focus on Maori in the 18-24 age group, to examine whether these findings would be replicated cross-culturally and have relevance to such groups.

In clinical samples, hopelessness has an important relationship with suicidal ideation and other suicidal behaviours. In particular it mediates the relationship

between depression and suicidal behaviour. This was not the case in the present study and this does not appear to be related to the level of suicidal ideation. This raises the possibility, suggested by Cole (1989), that hopelessness is qualitatively different in a young adult non-clinical sample, than in other groups. The developmental aspects of perceptions of the future would provide a fruitful area for further research.

This study was unable to determine which factors lead to other suicidal behaviours such as attempted and completed suicide in a non-clinical population. It is possible that different factors may become salient at different points in time in the suicide process. For example, depression appears to be predictive of low levels of suicidal ideation but hopelessness appears more important at higher levels of suicidal ideation. Whether this change in the relative importance of these factors extends to other suicidal behaviours is unclear but it could be the focus of future prospective research with non-clinical samples.

Finally, the challenge for future research lies in refining and developing our understanding of the complex relationships that exist between environmental variables, intrapersonal variables and all forms of suicidal behaviour. The findings of this study provide a framework on which such refinement and development can be based. This study focuses primarily on the psychological aspects of suicidal ideation but it is clear that these do not occur in isolation and the wider context needs to be taken into account to gain a full understanding of this behaviour. It is hoped, however, that the relationships established in this study, particularly in relation to minor stressors and coping, will lead to a more thorough

and precise understanding of the suicidal process. As stated earlier, the better we understand the associations that psychological variables have with both current and further suicidal ideation, the more appropriate will be our prevention and treatment strategies.

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Appendix A

Contents

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Informed Consent Form

The study you are being asked to participate in is concerned with how people cope with stress in their lives and how this relates to their emotional state. Some of the questions ask how you are feeling at the moment. Others ask whether you have had thoughts about depression or suicide either now or in the past.

The following is a statement of what I as the researcher, would like you to do, and what you, as a participant can expect from me.

What I would like from you

I would like you to fill in a questionnaire booklet which will take approximately 45 minutes to complete. I would like you to do this twice, firstly today and then in about six months time. So that I can send you a copy of the second questionnaire in six months I would like to get from you a current address. The posting will also contain a self addressed, stamped envelope, so that you can send the questionnaire back to me when you have completed it. In case I need to contact you if there are any difficulties with the followup, I would also like you to give me a current contact phone number, if you have one.

This research focuses on stress and the emotional reactions to it. Some of these reactions may include feelings of depression and also thoughts of suicide. If during the course of this study you feel as though you might act on any thoughts of suicide or depression I would ask you to agree to first contact one of the referral agencies I will give you.

What you can expect from me

As a participant in this study you have the right to expect that all your responses will be kept confidential. I will be the only one who sees your answers and the face sheet containing your name address and other personal details will be removed from the questionnaire and stored separately. When I analyse the

results I intend to pool all the data together, such that no responses will be able to be identified as those of any particular individual.

It is possible that after completing the questionnaire and thinking about the questions that you may feel the need to talk to someone about how you are feeling. As a researcher I am unable to provide any treatment for you personally. I am concerned however that a few of you may feel distressed, and as a way of assisting you with this I will provide you with a list of agencies that have people trained to listen and discuss any hassles or feelings you might be having. I would hope that you will be able to make this decision for yourself, as it is not my intention to suggest that you seek counselling even if I think from your answers that you should do that. If you feel that you would like to talk with me about the study or the referral agencies however, I would be happy for you to do that and I will provide you with my contact work phone number.

Referral agency information sheet

Referral Agencies

I am concerned that a few of you might be worried about some of the thoughts or feelings that you have. If you are worried then please contact one of the agencies listed below.

If you would like to contact me to discuss any aspects of this study or the agencies then I would be happy for you to give me a call on 69099 ext 7841.

Telephone services

| | | | |
|------------|-------|-----------------|---------------|
| Samaritans | 82442 | 24 hour service | 7 days a week |
| Youthline | 73077 | 6pm - 10pm | 7 days a week |

These services are volunteer organisations which have people who are trained to listen and to be supportive of those people who call them. They welcome calls from anyone who wishes to talk over anything that is of concern to them. Your call can be anonymous if you wish it to be.

Counselling services

| | |
|-----------------------------|--------------------------------------|
| Student Counselling Service | Ph 69099 ext 8310 for an appointment |
|-----------------------------|--------------------------------------|

| | |
|-----------------------------------|--------------------------------------|
| Family Health Counselling Service | Ph 80834 or 75449 for an appointment |
|-----------------------------------|--------------------------------------|

These agencies do not charge for their services. They are staffed by trained Counsellors and Psychologists who are happy to discuss any areas of concern that you might have.

I would stress that both the Telephone and the Counselling services mentioned above treat all discussions confidentially.

You may also want to contact your Doctor or the Student Health Service for further assistance.

For the Student Health Service Ph 69099 ext 7542 or 7543 for an appointment.

Once again if you wish to contact me to discuss aspects of this study or the above services, my work phone number is 69099 ext 7841.

Graeme Beaumont.

Participants Instruction Sheet

MASSEY UNIVERSITY PSYCHOLOGY DEPARTMENT STUDENT HASSLES AND COPING BEHAVIOUR PROJECT

Please read the following instructions and follow them carefully.

Remember that all the information you give me is confidential. The information gathered by this questionnaire will be used only for the purposes of this study.

It is important that you give your own answers to the questions. Therefore, I would ask that you do not discuss the questions with others. If you need help with some of the material, however, then I will be happy to answer your queries.

First I would like you to complete the green sheet overleaf. After this I would like you to continue with the rest of the questionnaire. Please try to answer all of the questions and be careful not to skip any pages. I have printed alternate pages on a different colour to help you with this.

When you have finished please remove the pink sheet entitled Referral Agencies and take this with you. I will collect the completed questionnaire from you when you leave.

**I HAVE READ THE INFORMED CONSENT FORM AND
AGREE TO PARTICIPATE IN THIS STUDY ON
STUDENT HASSLES AND COPING BEHAVIOUR**

FULL NAME: _____

SIGNATURE: _____

Demographic Information Questionnaire

Address: _____

Phone number: _____

Date of birth: _____ Sex: _____

How would you describe yourself: 1. European _____
(please tick one) 2. Maori _____
3. Pacific Islander _____
4. Other (please specify) _____

Are You (please tick one) 1. single _____
2. married _____
3. divorced/separated _____

Do you (please tick one) 1. live alone _____
2. live with family _____
3. live with friends _____

Is this your first year of university study? yes _____
(please tick one) no _____

Do you expect to graduate this year yes _____
(please tick one) no _____

What subject are you majoring in _____

Please write in today's date _____

The Revised Hassles Scale (DeLongis, 1985)

Instructions to participants:

The questions I am asking here focus on your experiences and how things have been with you. There are no right or wrong answers to these questions. An answer is correct if it is true for you.

In the first set of questions I want to ask about the hassles you have been experiencing this last month. Hassles are irritants that can range from minor annoyances to fairly major pressures, problems, or difficulties. Hassles can occur few or many times.

Below is a list of some things that can be considered hassles in day-to-day life. During the course of the last month some of these things will have been a hassle for you. Please think how much of a hassle each of these things was for you during the last month. Indicate on the right-hand side of the page (under "HASSLES") how much of a hassle each statement was by circling the appropriate number.

HASSLES

- 0 = Not at all
- 1 = Somewhat
- 2 = Quite a bit
- 3 = A great deal

Remember you must circle one answer for every item.

| | | | | |
|----------------------------------|---|---|---|---|
| Your child(ren) | 0 | 1 | 2 | 3 |
| Your parents or parents-in-law | 0 | 1 | 2 | 3 |
| Other relative(s) | 0 | 1 | 2 | 3 |
| Your spouse | 0 | 1 | 2 | 3 |
| Time spent with family | 0 | 1 | 2 | 3 |
| Health or well-being of a family | 0 | 1 | 2 | 3 |
| Intimacy | 0 | 1 | 2 | 3 |
| Family related obligations | 0 | 1 | 2 | 3 |
| Your friend(s) | 0 | 1 | 2 | 3 |
| Fellow workers | 0 | 1 | 2 | 3 |
| Clients, customers, patients etc | 0 | 1 | 2 | 3 |
| Your supervisor or, employer | 0 | 1 | 2 | 3 |
| The nature of your work | 0 | 1 | 2 | 3 |

HASSLES

0 = Not at all

1 = Somewhat

2 = Quite a bit

3 = A great deal

| | | | | |
|---|---|---|---|---|
| Your work load | 0 | 1 | 2 | 3 |
| Your job security | 0 | 1 | 2 | 3 |
| Meeting deadlines or goals on the job | 0 | 1 | 2 | 3 |
| Enough money for necessities (e.g. food, clothing, housing, health care, | 0 | 1 | 2 | 3 |
| Enough money for education | 0 | 1 | 2 | 3 |
| Enough money for emergencies | 0 | 1 | 2 | 3 |
| Enough money for extras (e.g. vacations, recreation, entertainment) | 0 | 1 | 2 | 3 |
| Financial care for someone who doesn't live with you . | 0 | 1 | 2 | 3 |
| Investments | 0 | 1 | 2 | 3 |
| Your smoking | 0 | 1 | 2 | 3 |
| Your drinking | 0 | 1 | 2 | 3 |
| Mood-altering drugs | 0 | 1 | 2 | 3 |
| Your physical appearance | 0 | 1 | 2 | 3 |
| Contraception | 0 | 1 | 2 | 3 |
| Exercise(s) | 0 | 1 | 2 | 3 |
| Your medical care | 0 | 1 | 2 | 3 |
| Your health | 0 | 1 | 2 | 3 |
| Your physical abilities | 0 | 1 | 2 | 3 |
| The weather | 0 | 1 | 2 | 3 |
| Your environment (e.g. quality of air, noise level, trees and greenery) | 0 | 1 | 2 | 3 |
| Political or social issues | 0 | 1 | 2 | 3 |
| Your neighbourhood (e.g. neighbours, the area you live in) | 0 | 1 | 2 | 3 |
| Conserving (gas, electricity, water petrol, etc) | 0 | 1 | 2 | 3 |
| Pets | 0 | 1 | 2 | 3 |
| Cooking | 0 | 1 | 2 | 3 |
| Housework | 0 | 1 | 2 | 3 |
| Home repairs | 0 | 1 | 2 | 3 |

HASSLES

- 0 = Not at all
- 1 = Somewhat
- 2 = Quite a bit
- 3 = A great deal

| | | | | |
|---|---|---|---|---|
| Yardwork | 0 | 1 | 2 | 3 |
| Car maintenance | 0 | 1 | 2 | 3 |
| Taking care of paperwork (e.g. paying bills, filling out forms) | 0 | 1 | 2 | 3 |
| Home entertainment (e.g. T.V., music, reading) | 0 | 1 | 2 | 3 |
| Amount of free time | 0 | 1 | 2 | 3 |
| Recreation and entertainment outside the home (e.g. movies, sport eating out, walking) | 0 | 1 | 2 | 3 |
| Eating (at home) | 0 | 1 | 2 | 3 |
| Church and community organizations | 0 | 1 | 2 | 3 |
| Legal matters | 0 | 1 | 2 | 3 |
| Being organized | 0 | 1 | 2 | 3 |
| Social commitments | 0 | 1 | 2 | 3 |

Coping Reactions Inventory (Billings & Moos, 1981)

Please indicate below a personal crisis or stressful life event which you have recently experienced.

Could you please indicate how you dealt with this event by circling yes (Y) or no (N) for each of the following 19 items.

1. Tried to see the positive side.

Y

N
2. Tried to step back from the situation and be more objective. . . .

Y

N
3. Prayed for guidance or strength.

Y

N
4. Took things one step at a time.

Y

N
5. Considered several alternatives for handling the problem.

Y

N
6. Drew on my past experiences; I was in a similar situation before

Y

N
7. Tried to find out more about the situation.

Y

N
8. Talked with professional person (e.g. doctor, clergy, lawyer)
about the situation.

Y

N
9. Took some positive action.

Y

N
10. Talked with spouse or other relative about the problem.

Y

N
11. Talked with a friend about the situation.

Y

N
12. Exercised more.

Y

N
13. Prepared for the worst.

Y

N
14. Sometimes took it out on other people when I felt
angry or depressed.

Y

N
15. Tried to reduce the tension by eating more.

Y

N
16. Tried to reduce the tension by smoking more.

Y

N
17. Kept my feelings to myself.

Y

N
18. Got busy with other things in order to
keep my mind off the problem.

Y

N
19. Didn't worry about it; figured everything would probably
work out fine.

Y

N

Beck Depression Inventory (Beck et al., 1961)

Please read each of the following groups of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling in the PAST WEEK, INCLUDING TODAY. Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one.

BE SURE TO READ ALL THE STATEMENTS IN EACH GROUP BEFORE MAKING YOUR CHOICE.

- 1. I do not feel sad. 0
I feel sad. 1
I am sad all of the time and I can't snap out of it. 2
I am so sad or unhappy that I can't stand it. 3
- 2. I am not particularly discouraged about the future. 0
I feel discouraged about the future. 1
I feel I have nothing to look forward to. 2
I feel that the future is hopeless and that things cannot improve. 3
- 3. I do not feel like a failure. 0
I feel I have failed more than the average person 1
As I look back on my life, all I can see is a lot of failures. 2
I feel I am a complete failure as a person. 3
- 4. I get as much satisfaction out of things as I used to. 0
I don't enjoy things the way I used to. 1
I don't get real satisfaction out of anything anymore. 2
I am dissatisfied or bored with everything. 3
- 5. I don't feel particularly guilty. 0
I feel guilty a good part of the time. 1
I feel quite guilty most of the time. 2
I feel guilty all of the time. 3
- 6. I don't feel I am being punished. 0
I feel I may be punished. 1
I expect to be punished. 2
I feel I am being punished. 3
- 7. I don't feel disappointed in myself. 0
I am disappointed in myself. 1
I am disgusted in myself. 2
I hate myself. 3

8. I don't feel I am any worse than anybody else. 0
I am critical of myself for my weaknesses or mistakes. 1
I blame myself all the time for my faults. 2
I blame myself for everything bad that happens. 3
9. I don't have any thoughts of killing myself. 0
I have thoughts of killing myself, but would not carry them out. 1
I would like to kill myself. 2
I would kill myself if I had the chance. 3
10. I don't cry any more than usual. 0
I cry more now than I used to. 1
I cry all the time now. 2
I used to be able to cry, but now I can't cry even
though I want to. 3
11. I am no more irritated now than I ever am. 0
I get annoyed or irritated more easily than
I used to. 1
I feel irritated all the time now. 2
I don't get irritated at all by the things that used to irritate me. 3
12. I have not lost interest in other people. 0
I am less interested in other people than
I used to be. 1
I have lost most of my interest in other people. 2
I have lost all my interest in other people. 3
13. I make decisions about as well as I ever did. 0
I put off making decisions more than I used to. 1
I have greater difficulty in making decisions than before. 2
I can't make decisions at all anymore. 3
14. I don't feel I look any worse than I used to. 0
I am worried I am looking old or unattractive. 1
I feel that there are permanent changes in my
appearance that make me look unattractive. 2
I believe that I look ugly. 3
15. I can work about as well as before. 0
It takes an extra effort to get started at doing something. 1
I have to push myself very hard to do anything. 2
I can't do any work at all. 3

16. I can sleep as well as usual. 0
 I don't sleep as well as I used to. 1
 I wake up 1-2 hours earlier than usual and
 find it hard to get back to sleep. 2
 I wake up several hours earlier than I used
 to and cannot get back to sleep. 3
17. I don't get more tired than usual. 0
 I get tired more easily than I used to. 1
 I get tired from doing almost anything. 2
 I am too tired to do anything. 3
18. My appetite is no worse than usual. 0
 My appetite is not as good as it used to be. 1
 My appetite is much worse now. 2
 I have no appetite at all anymore. 3
19. I haven't lost much weight, if any, lately. 0
 I have lost more than 5 pounds. 1
 I have lost more than 10 pounds. 2
 I have lost more than 15 pounds. 3
- I am purposely trying to lose weight by eating less. . . . Yes No
20. I am no more worried about my health than usual. 0
 I am worried about physical problems such as aches and
 pains; or upset stomach; or constipation. 1
 I am very worried about physical problems and
 it's hard to think of much else. 2
 I am so worried about my physical problems that
 I cannot think about anything else. 3
21. I have not noticed any recent change in my
 interest in sex. 0
 I am less interested in sex than I used to be. 1
 I am much less interested in sex now. 2
 I have lost interest in sex completely. 3

Suicidal Ideation Questionnaire (Reynolds, 1987a, 1988a)

Listed below are a number of sentences about thoughts that people sometimes have. Please indicate which of these thoughts you have had in the last month. After each statement circle a number from the 7 below, which best describes your own thoughts. Be sure to circle a number after each sentence. Remember there are no right or wrong answers.

- 1 = Almost every day.
- 2 = Couple of times a week.
- 3 = About once a week.
- 4 = Couple of times a month.
- 5 = About once a month.
- 6 = I had this thought before but not in the last month.
- 7 = I never had this thought.

1. I thought it would be better if I was alive 1 2 3 4 5 6 7
2. I thought about killing myself. 1 2 3 4 5 6 7
3. I thought about how I would kill myself. 1 2 3 4 5 6 7
4. I thought about when I would kill myself. 1 2 3 4 5 6 7
5. I thought about people dying. 1 2 3 4 5 6 7
6. I thought about death. 1 2 3 4 5 6 7
7. I thought about what to write in a suicide note 1 2 3 4 5 6 7
8. I thought about writing a will. 1 2 3 4 5 6 7
9. I thought about telling people I plan to kill myself. . . . 1 2 3 4 5 6 7
10. I thought that people would be happier if
I were not around. 1 2 3 4 5 6 7
11. I thought about how people would feel if
I killed myself. 1 2 3 4 5 6 7
12. I wished I were dead. 1 2 3 4 5 6 7
13. I thought about how easy it would be to end it all. . . . 1 2 3 4 5 6 7
14. I thought that killing myself would solve my problems. 1 2 3 4 5 6 7
15. I thought others would be better off if I was dead. . . . 1 2 3 4 5 6 7
16. I wished I had the nerve to kill myself. 1 2 3 4 5 6 7
17. I wished that I had never been born. 1 2 3 4 5 6 7

- 1 = Almost every day.
 2 = Couple of times a week.
 3 = About once a week.
 4 = Couple of times a month.
 5 = About once a month.
 6 = I had this thought before but not in the last month.
 7 = I never had this thought.

18. I thought if I had the chance I would kill myself. 1 2 3 4 5 6 7
19. I thought about ways people kill themselves. 1 2 3 4 5 6 7
20. I thought about killing myself, but would not do it. . . 1 2 3 4 5 6 7
21. I thought about having a bad accident. 1 2 3 4 5 6 7
22. I thought that life was not worth living. 1 2 3 4 5 6 7
23. I thought that my life was too rotten to continue. . . . 1 2 3 4 5 6 7
24. I thought that the only way to be noticed
 is to kill myself. 1 2 3 4 5 6 7
25. I thought that if I killed myself people
 would realise I was worth caring about. 1 2 3 4 5 6 7
26. I thought no one cared if I lived or died. 1 2 3 4 5 6 7
27. I thought about hurting myself but not
 really killing myself. 1 2 3 4 5 6 7
28. I wondered if I had the nerve to kill myself. 1 2 3 4 5 6 7
29. I thought that if things did not get better
 I would kill myself. 1 2 3 4 5 6 7
30. I wished that I had the right to kill myself. 1 2 3 4 5 6 7

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Suicide Attempt Questions

Have you ever attempted suicide in the past?
(please circle either yes or no) Y N

If yes, have you made more than one attempt? Y N

If you have made a suicide attempt,
was it in the last 6 months? Y N

The Hopelessness Scale (Beck et al., 1974)

Please read each of the following statements carefully and decide whether they are true (T) as applied to you or false (F) as applied to you. Please circle the appropriate answer at the end of each statement.

1. I look forward to the future with hope and enthusiasm. T F
2. I might as well give up because I can't make things better for myself. T F
3. When things are going badly I am helped by knowing they can't stay that way forever. T F
4. I can't imagine what my life would be like in 10 years. T F
5. I have enough time to accomplish the things I most want to do. T F
6. In the future I expect to succeed in what concerns me most. T F
7. My future seems dark to me. T F
8. I expect to get more of the good things in life than the average person. T F
9. I just don't get the breaks, and there is no reason to believe I will in the future. T F
10. My past experiences have prepared me well for my future. . . . T F
11. All I can see ahead of me is unpleasantness rather than pleasantness. T F
12. I don't expect to get what I really want. T F
13. When I look ahead to the future I expect I will be happier than I am now. T F
14. Things just won't work out the way I want them to. T F
15. I have great faith in the future. T F
16. I never get what I want so it's foolish to want anything. T F
17. It is very unlikely that I will get any real satisfaction in the future. T F
18. The future seems vague and uncertain to me. T F
19. I can look forward to more good times than bad times. T F
20. There's no use in really trying to get something I want because I probably won't get it. T F

Appendix B

Summary anova tables for sex differences on all variables

Table B-1: Summary Anova Table for suicidal ideation at Time 1 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|------------|---------|------|------|
| Between Groups | 1 | 57.519 | 57.519 | .163 | .686 |
| Within Groups | 400 | 140746.344 | 351.866 | | |
| Total | 401 | 140803.863 | | | |

Table B-2: Summary Anova Table for suicidal ideation at Time 2 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|------------|---------|------|------|
| Between Groups | 1 | 24.590 | 24.590 | .060 | .807 |
| Within Groups | 344 | 143055.594 | 415.859 | | |
| Total | 345 | 143080.543 | | | |

Table B-3: Summary Anova Table for hassles at Time 1 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|------------|----------|-------|------|
| Between Groups | 1 | 1521.649 | 1521.649 | 6.162 | .013 |
| Within Groups | 400 | 98775.796 | 246.939 | | |
| Total | 401 | 100297.445 | | | |

Table B-4: Summary Anova Table for hassles at Time 2 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|-----------|---------|-------|------|
| Between Groups | 1 | 568.443 | 568.443 | 2.265 | .133 |
| Within Groups | 344 | 86329.595 | 250.598 | | |
| Total | 345 | 86898.038 | | | |

Table B-5: Summary Anova Table for depression at Time 1 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|---------|---------|-------|------|
| Between Groups | 1 | 122.986 | 122.986 | 2.482 | .116 |

| | | | |
|---------------|-----|-----------|--------|
| Within Groups | 400 | 19822.526 | 49.556 |
| Total | 401 | 19945.512 | |

Table B-6: Summary Anova Table for depression at Time 2 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|-----------|--------|------|------|
| Between Groups | 1 | 20.581 | 20.581 | .461 | .497 |
| Within Groups | 344 | 15342.809 | 44.601 | | |
| Total | 345 | 15363.390 | | | |

Table B-7: Summary Anova Table for hopelessness at Time 1 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|----------|--------|------|------|
| Between Groups | 1 | 2.350 | 2.350 | .185 | .668 |
| Within Groups | 400 | 5094.677 | 12.737 | | |
| Total | 401 | 5097.027 | | | |

Table B-8: Summary Anova Table for hopelessness at Time 2 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|----------|--------|------|------|
| Between Groups | 1 | 3.827 | 3.827 | .314 | .576 |
| Within Groups | 344 | 4196.211 | 12.198 | | |
| Total | 345 | 4200.038 | | | |

Table B-9: Summary Anova Table for emotion-focused coping at Time 1 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|-------|------|-------|------|
| Between Groups | 1 | .061 | .061 | 2.872 | .091 |
| Within Groups | 397 | 8.411 | .021 | | |
| Total | 398 | 8.472 | | | |

Table B-10: Summary Anova Table for emotion-focused coping at Time 2 by sex

| Source | D.F. | SS | MS | F | P |
|--------|------|----|----|---|---|
|--------|------|----|----|---|---|

| | | | | | |
|----------------|-----|-------|------|------|------|
| Between Groups | 1 | .002 | .002 | .100 | .752 |
| Within Groups | 333 | 6.855 | .021 | | |
| Total | 334 | 6.857 | | | |

Table B-11: Summary Anova Table for problem-focused coping at Time 1 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|--------|------|-------|------|
| Between Groups | 1 | .105 | .105 | 2.103 | .148 |
| Within Groups | 397 | 19.800 | .050 | | |
| Total | 398 | 19.905 | | | |

Table B-12: Summary Anova Table for problem-focused coping at Time 2 by sex

| Source | D.F. | SS | MS | F | P |
|----------------|------|--------|------|------|------|
| Between Groups | 1 | .020 | .020 | .440 | .508 |
| Within Groups | 333 | 15.173 | .046 | | |
| Total | 334 | 15.193 | | | |

Appendix C

Suicide attempt information

The questionnaire for the present study asked three questions on suicide attempts. At Time 1 40 subjects indicated that they had attempted suicide in the past, 15 of these had made more than one attempt and 6 indicated that their attempt was within the previous 6 months. At Time 2 38 subjects indicated they had made a past suicide attempt, 13 had attempted more than once and three had attempted in the previous 6 months. Scores were compared on the main variables between those who had attempted suicide and those who had not. This data is presented in table C-1.

Table C-1: Comparison of the data for the main variables for those who had attempted suicide in the past and those who had not.

| Variable | Attempters | Non-attempters | F |
|------------------------|------------|----------------|----------|
| Time 1 | | | |
| Suicidal Ideation | 38.98 | 19.94 | 40.85*** |
| Minor stressors | 44.83 | 32.87 | 21.57*** |
| Depression | 14.33 | 8.81 | 23.21*** |
| Hopelessness | 5.18 | 3.73 | 5.97* |
| Emotion-focused coping | 4.90 | 4.54 | 1.76 |
| Problem-focused coping | 4.47 | 3.99 | 3.49 |
| Time 2 | | | |
| Suicidal Ideation | 43.92 | 17.86 | 65.17*** |
| Minor stressors | 38.61 | 29.64 | 11.07*** |
| Depression | 11.37 | 7.19 | 13.76*** |
| Hopelessness | 5.00 | 3.59 | 5.59* |
| Emotion-focused coping | 4.29 | 4.54 | 0.88 |
| Problem-focused coping | 4.39 | 4.07 | 1.56 |

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

The results in table C-1 indicate that those who had attempted suicide in the past had significantly higher levels of suicidal ideation, minor stressors, depression and hopelessness than those who had not made a previous suicide attempt. There were no significant differences between the groups on either focus of coping. This pattern of results was evident at both data collection times. The major analyses of the present study were not conducted with this group because of the small sample size.