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Assessment of suicide risk: The predictive role of psychiatric disorders, personality, cognitions and psychological buffers

Doctoral thesis
for the degree of Philosophiae Doctor

Trondheim, September 2005

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NTNU
Innovation and Creativity

Aos meus pais e irmão
(To my parents and brother)

Contents

Acknowledgments

I have so many people to thank that if I mention all of them this section will probably be bigger than the whole work, thus I will cite the most significant ones. First of all, I have to thank to my family because if it were not for their support, encouragement, belief, and money (at least in the beginning), I would probably not have crossed the Atlantic (more than 11000 Km) to carry out this work.

Secondly, I want to express my deepest gratitude and admiration to my supervisor, Prof. Tore C. Stiles, who first of all, bravely embraced the challenge of having a Brazilian doctor student. I hope it was not a traumatic experience for him. I am deeply indebted to Tore for his help. I have only one thing to say: Tore, you are great, both as a professional and as a person.

My gratitude also goes to my co-supervisor Prof. Arne Vikan, who likes Brasil so much and welcomed me so warmly and kindly. I also have to mention his wife Anne-Lise who welcomed me to her home.

My appreciation also go to Birthe Loa Knizek, who is so interested in opening the doors to foreign students and making the exchange of experience and education possible.

I want to thank to the administration staff of the Psychology Department, NTNU for being available, helpful, and always friendly. Thus, Astrid I. Øie, Bente Stavne, Bjørg Helgemo, Gry Therese Storsveen, Ingvild Moen, Kolbjørn Ballo, Merete Strømsland, Rune Dahl, Terje Johansen, Tom Knudsen, Unni Skrede, Vibeke Aalmo and the ones that no longer work here, thank you all. I also want to thank Kyrre Svarva SVT – Faculty, for his kind assistance in times of need and for helping me to scan the data.

List of Papers included in the thesis

Paper I: Chioqueta, A. P. & Stiles, T. C. (2003) Suicide risk in patients with specific mood and anxiety disorders. Crisis, 24, 105-112.

Paper II: Chioqueta, A. P. & Stiles, T. C. (2004). Suicide risk in somatization disorder patients. Crisis, 25, 3-7.

Paper III: Chioqueta, A. P. & Stiles, T. C. (2004). Assessing suicide risk in cluster C personality disorders. Crisis, 25, 128-133.

Paper IV: Chioqueta, A. P. & Stiles, T. C. (2005). Cognitive factors, engagement in sport, and suicide ideation. Manuscript conditionally accepted for publication.

Paper V: Chioqueta, A. P. & Stiles, T. C. (2005). Personality traits and the development of depression, hopelessness, and suicide ideation. Personality and Individual Differences, 38, 1283-1291.

Paper VI: Chioqueta, A. P. & Stiles, T. C. (2005). The relationship between psychological buffers, hopelessness, and suicide ideation: Identification of protective factors. Manuscript conditionally accepted for publication.

Summary

Suicide is a global health problem. The rates though differ considerably from country to country. Despite all the efforts to understand and explain suicidal behaviour no one knows precisely why certain individuals commit suicide. Suicide research has, however, identified several risk factors that are associated with the development of suicidal thoughts, attempts, and eventually completed suicides. Similarly, some protective factors associated with the mitigation of suicidal behaviour, although at a much smaller amount, have also been investigated.

Despite the significant advances in the recognition of risk factors, to what extent certain psychiatric disorders such as anxiety and personality disorders are associated with increased risk of suicide, and the role of cormorbid disorders in the development and aggravation of suicide risk is still controversial. In addition, there is an apparent need for research on the role of cognitive factors such as negative automatic thoughts and depressogenic attitudes in the development/mitigation of suicide ideation, given their significance in the treatment of cognitive therapy. Similarly, it seems also important to examine whether certain personality characteristics, meaning stable patterns of feelings, thoughts, and behaviours, are related to the development/mitigation of suicide risk, knowing that little attention has been paid to the role of personality in the development of suicidal behaviour. Finally, the role of factors such as life satisfaction, social support, family cohesion, and self-esteem deserves further scrutiny as potential protective factors in the development of suicide and suicide-related thoughts, since they can be useful both in the prediction and treatment of suicidal behaviour.

The aims of this thesis are to investigate which specific psychiatric disorders are associated with increased risk of suicide and to identify risk and protective factors associated with the

development and mitigation of suicide ideation. This thesis is based on the assumption that suicidal behaviour occurs on a continuum ranging from suicidal thoughts, passing through attempts and eventually progressing into a completed action. Thus, special attention has been paid to suicide ideation which is believed to be the entry point into the suicidal continuum. To accomplish the work five independent samples, two clinical and three non-clinical, were employed.

The present thesis consists of six studies divided into two main parts: suicide risk in psychiatric disorders and cognitive and personality risk/protective factors involved in the development/mitigation of suicide ideation. The first three studies comprise the first part of the thesis and explore to what extent mood, anxiety, and personality disorders are associated with increased risk of suicidal behaviour through the investigation of suicide ideation, suicide attempts, and hopelessness. More specifically, the first study focuses on the risk of suicide ideation and hopelessness in mood and anxiety disorders. The second study investigates to what extent somatization disorder is associated with increased risk of suicide attempts. Finally, the third study investigates the risk of suicide attempts in personality disorders. The second part of this thesis consists also of three studies. The fourth study identifies cognitive factors associated with the development of suicide ideation. The fifth study investigates personality traits associated with the development of depressive symptoms, hopelessness, and suicide ideation. The sixth and final study examines protective factors associated with the mitigation of hopelessness and suicide ideation.

The results of study 1 suggested that it is essentially the depressive disorders, not the anxiety disorders that are associated with risk of suicide. More specifically, it was found that dysthymia was significantly associated with hopelessness. Patients presenting major depressive episode with higher anxiety symptoms had significantly increased scores on the

hopelessness scale. Major depressive episode and bipolar disorder, but not dysthymia, were significantly associated with higher levels of suicide ideation. Increased levels of anxiety symptoms in patients with dysthymia were associated with increased levels of suicide ideation, while increased depressive symptoms in patients with specific phobia and generalized anxiety disorder were associated with significantly lower levels of suicide ideation.

The results of study 2 showed that although a patient meets the criteria for a principal diagnosis of major depressive disorder and/or a personality disorder, it is still of significant importance to decide whether or not the patient also meets the criteria for a somatization disorder in order to assess suicide risk more optimally. The findings highlight the fact that the potential for suicide in patients with somatization disorder should not be overlooked when a diagnosable depressive disorder or a personality disorder is not present.

The results of study 3 suggested that dependent, but not avoidant or obsessive-compulsive, personality disorder, as well as the cluster A and B personality disorders, were significantly associated with suicide attempts. This association remained significant after controlling for both a lifetime depressive disorder and severity of depression for the cluster A and B personality disorders, but not for dependent personality disorder.

The results of study 4 showed that scores on the Automatic Thoughts Questionnaire (ATQ-30), but not the Dysfunctional Attitude Scale (DAS-A), predicted suicide ideation three months later. Military recruits that were actively engaged in sport activities at the Army School exhibited reduced risk of suicide ideation at posttest.

The results of study 5 suggested that depressive symptoms were positively predicted by Neuroticism and Openness, and negatively predicted by Extraversion. Hopelessness was positively predicted by Neuroticism and negatively predicted by Extraversion. Finally, suicide ideation was positively predicted by Neuroticism. More detailed results were obtained from facet-level multiple regression analyses. Accordingly, depressive symptoms were positively predicted by the Neuroticism facets, *angry hostility* and *depression*, and negatively predicted by the Extraversion facet, *positive emotions*, and by the Openness facet, *actions*. Hopelessness was positively predicted by the Neuroticism facet, *depression*, and negatively predicted by the Extraversion facets, *assertiveness and positive emotions*. Among the Neuroticism facets, *depression* positively predicted suicide ideation, while *self-consciousness* negatively predicted suicide ideation.

Finally, the results of study 6 revealed that not all the psychological buffers were significantly associated with lower levels of hopelessness, while all the psychological buffers were associated with lower levels of suicide ideation when levels of depression were controlled for. Results obtained from additional analyses suggested that life satisfaction and self-esteem are independent predictors of lower levels of hopelessness, while perception of social support seems to be the major predictor of lower levels of suicide ideation independent of depression and hopelessness severity. Thus level of hopelessness seems to be minimized by the level of life satisfaction and level of self-esteem exhibited by the individuals, while the key factor to the mitigation of suicidal ideas seems to be perception of social support.

In general, the findings suggest that it is essentially depressive disorders, not anxiety disorders, that constitute risk for suicide. Somatization disorder represents an independent suicide risk factor. Clusters A and B personality disorders also represent independent risk factors for suicidal behaviour. No specific personality disorder in the Cluster C seems to be an

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independent risk factor for suicidal behaviour. However, dependent personality disorder is associated with increased risk for suicidal behaviour, but only in association with a comorbid depressive disorder. Among the cognitive variables, only negative automatic thoughts are associated with increased risk for suicide ideation. In addition, active engagement in sport is associated with a reduced risk of suicide ideation. Regarding the personality factors, Neuroticism is the main personality factor associated with the development of suicide ideation, while Extraversion is the personality factor associated with the mitigation of hopelessness. Finally, life satisfaction and perception of social support are uniquely associated with the development/mitigation of suicide risk, independent of the severity of depressive symptoms.

1. Introduction

1.1 Background and aims of the thesis

Suicide is among the leading causes of death in the world with the noteworthy number of approximately 814 000 cases per year. This estimate represents an annual global mortality of around 14.5 cases per 100 000 population. Globally, the suicide rates are higher among men (18.9 per 100 000) than women (10.6 per 100 000) and tend to increase with age (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). However, in countries such as Norway, suicide is among the top three causes of death in the population aged 15-34 years, ranking as the second cause of death for males and the third for females (World Health Organization, 2001). In the year 2002, nearly 500 individuals committed suicide in Norway (Statistics Norway, 2004) given a rate of completed suicides of 10.9 per 100 000 (16.1 for male and 5.8 for female).

Precise numbers of suicide attempts are not easy to obtain due to difficulties associated with the methods to register such events. Nevertheless it is estimated that it occurs 10 to 20 times more often than completed suicides, especially among individuals under 25 years of age (Krug et al., 2002). For instance, in Norway, it is estimated that approximately 10 000 individuals attempt suicide each year according to the Norwegian Board of Health (1995). Data on suicide attempts obtained from epidemiologic studies conducted in individual countries reveal similar or even higher estimates (Hjelmeland & Bjerke, 1996; Welch, 2001).

Also of considerable importance is the fact that suicidal thoughts occur more frequently than both attempted and completed suicide (Kessler, Borges, & Walters, 1999). Data from epidemiologic surveys, conducted in individual countries, report lifetime prevalence rates/100 for suicide ideation ranging from 2.09 to 18.51 (Bronisch & Wittchen, 1994; Kessler et al., 1999; Weissman et al., 1999). The presence of suicide ideation at some period earlier in life among college students reveals even higher rates such as 54% and 37% reported by American

and Norwegian college students, respectively (Bjerke, Svarva, & Stiles, 1992; Meehan, Lamb, Saltzman, & O'Carroll, 1992).

In general, the present thesis is primarily concerned with the identification of risk factors for suicide via the examination of suicide attempts and suicide ideation. Risk factor is defined as "the association between some characteristic or attribute of the individual, group, or the environment and an increased probability of the occurrence of a particular disease or a disease-related phenomenon" (Klerman, 1987, p. 34). Thus, the higher the knowledge of risk factors, the higher the prospect of success in preventing a determined phenomenon. This assertion is particularly relevant to suicide risk research because there is agreement on the need for further identification and specification of risk factors for suicide.

The identification of risk factors is important for research, public health, and clinical practice (Klerman, 1987). Accordingly, through the identification of risk factors one can identify possible etiological factors associated with the development of the phenomenon in case. Also important is the fact that risk factors provide a basis for preventive programmes. In fact, the identification of risk factors is central to the prevention of suicide particularly considering that interventions are usually based on the knowledge of these factors (Krug et al., 2002). Finally, clinicians can early identify high-risk individuals and introduce appropriate treatment intervention. This is particularly relevant considering that suicide risk assessment is a difficult and challenging task (Sommers-Flanagan & Sommers-Flanagan, 1995). Moreover, the knowledge of risk factors by professionals is vital to the assessment of suicide risk.

Also important and aimed in the present thesis is the identification of protective factors which may be involved in the mitigation of suicidal behaviour. The relevance of this assertion lies on two main factors: (a) this is an area which has received relatively little attention by researchers, and (b) such knowledge can contribute to the development and/or improvement of therapeutic interventions. Protective factors refer to "influences that modify, ameliorate, or

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alter a person's response to some environmental hazard that predisposes to a maladaptive outcome" (Rutter, 1985, p.600). Research on protective factors has been strongly encouraged by the World Health Organization and by professionals treating suicidal patients (Rudd & Joiner, 1998). In fact, Rudd and Joiner (1998) have proposed a continuum of suicidality ranging from non-existent to extreme, based on the presence of risk factors and considering protective factors in order to facilitate suicide risk assessment and guide clinical decision making and management of suicidal patients.

Suicidal behaviour is a complex phenomenon which occurs due to a combination of factors. As stated by Shneidman (1985), suicide is a multidimensional malaise. In fact, a more complete understanding of the etiology of suicide requires a multidimensional model comprising psychosocial, biologic, genetic, psychiatric, and temperament/personality domains as suggested by Blumenthal (1990).

The presence of a psychiatric disorder, particularly major depression, has been associated with all forms of suicidal behaviour. In fact, 90% of the completed suicides occur in the context of a mental disorder. However, while there is considerable evidence or consistency regarding the association between major depression and suicide risk, far less evidence or consistency has been found for the other mental disorders. Thus, the first part of this thesis was concerned with the identification of which specific Axis I clinical and Axis II personality disorders are associated with an increased risk of suicide via the examination of suicide ideation and suicide attempts. One important fact regarding the association of suicide and mental disorders, is that 82.2% of the research studying the relationship between psychiatric disorders and suicide of individuals who died by suicide, comes from Europe, particularly the UK and Scandinavian countries, and North America (Bertolote, Fleischmann, De Leo, & Wasserman, 2003). This bias towards Northern European countries raises questions concerning the generalizability of the findings to other cultural settings as asserted

by Bertolote et al. (2003). Thus, it seems particularly relevant the fact that one of the clinical samples in the present thesis was collected in Brazil (Paper I).

At the specific level, the present thesis aimed to identify cognitive and personality factors which may be involved in the development/mitigation of suicide ideation. The rationale of the cognitive therapy for depression rests on the assumption that the modification of dysfunctional beliefs and negative automatic thoughts alleviate the depressive symptomatology ameliorating the clinical disorder (Beck, Rush, Shaw, & Emery, 1979). Thus the investigation of the relationship between these specific cognitive factors and suicide ideation may eventually contribute to the prevention of suicide. Moreover, the exploration of cognitive vulnerability factors such as depressogenic beliefs and automatic thoughts may contribute to the advancement of cognitive interventions specifically designed for treating suicidal individuals. Similarly, it seems also important to examine whether certain personality characteristics, meaning stable patterns of feelings, thoughts, and behaviours, are related to the development of suicide risk. The relationship between personality features and suicidal behaviour is a significant issue considering that certain personality factors may predispose to suicide. Moreover, if there is a specific association between personality characteristics and suicide ideation, the identification of such personality characteristics should be of value in the prediction and prevention of suicide.

Finally, also investigated and focus of interest in the present thesis was the vulnerability/mitigation of hopelessness. More specifically, the role of cognitive and personality factors in the development and mitigation of hopelessness were also investigated in the present study. This interest is based on three major aspects: (1) the significant association between hopelessness and suicide risk; (2) the reduced amount of research investigating vulnerabilities to hopelessness; and (3) the fact that hopelessness is a set of beliefs which can be specifically addressed, reduced and modified through specific

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therapeutic interventions (Beck, Rush et al., 1979) and thus can potentially contribute to the improvement of prevention and eventually prediction of suicide.

1.2 Definition of terms

As stated by Beck (1986), adequate assessment of suicide risk requires the utilization of an adequate system of classification with appropriate distinctions particularly between suicide ideation and suicide attempts. The task force of the United States National Institute of Mental Health (NIMH) Center for studies of Suicide Prevention developed a tripartite classification system consisting of suicide ideation, suicide attempt, and completed suicide to clarify terminology and facilitate research on suicide (Beck et al., 1973). Each of these categories was further categorized according to suicidal intent, lethality of attempt, and method.

Later a standardized nomenclature was proposed by O'Carrol et al. (1996) with the intention of "improving the clarity and precision of communications, advancing suicidological research and knowledge, and improving the efficacy of clinical interventions" (p.237). According to the definitional system proposed by O'Carrol et al. (1996, p. 246), the term *suicide* refers to "death from injury, poisoning, or suffocation where there is evidence (either explicit or implicit) that the injury was self-inflicted and that the decedent intended to kill himself/herself". The term *suicide attempt* refers to "a potentially self-injurious behavior with a non-fatal outcome, for which there is evidence (either explicit of implicit) that the person intended at some (nonzero) level to kill him/her-self. A suicide attempt may or may not result in injuries". *Suicidal ideation* refers to "any self-reported thoughts of engaging in suicide-related behavior". *Suicidal-related behavior* refers to "potentially self-injurious behavior for which there is explicit or implicit evidence either that (a) the person intended at some (non-zero) level to kill himself/herself, or (b) the person wished to use the appearance of intending to kill himself/herself in order to attain some other end". This system was then adopted by the World Health Organization. As can be exemplified by the above suggested

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nomenclatures, there has been much disagreement about the most suitable terminology to describe suicidal behaviour. However, in any definition of suicidal behaviour, the *intention to die* seems to be the key element (Hjelmeland et al., 1998). Intention refers to the "intensity and pervasiveness of the wish to die" (Beck, 1986, p. 91).

In the present thesis the term *suicide attempt* refers to the behaviour described by the American nomenclature proposed by O'Carrol et al. (1996). The term *suicide ideation* was used to describe the thoughts exhibited by those "individuals who admit to have thoughts of or contemplation of suicide; specifically, thoughts of wishing to terminate one's life. The ideation may or may not involve actual planning or mental rehearsal of a suicidal act. Thus this category includes suicide threats, suicide preoccupations, and expressions of the wish to die as well as indirect indicators of suicide planning" (Beck, 1986, p. 91).

In the present thesis, the assessment of suicidal behaviour was accomplished using different measures. Of particular relevance is the fact that the Scale for Suicidal Ideation (Beck, Kovacs, & Weissman, 1979; Beck, Steer, & Ranieri, 1988) which was developed "to measure suicidal intent among ideators by assessing the various components of intent, such as intensity and pervasiveness of the wish to die, degree of planning, etc." (Beck, 1986, p. 91), was among the measures used to assess suicidal thoughts. Hopelessness, as measured by the Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974), and defined as negative expectations about the future, was also used as an indicator of suicide risk. This assertion is based on the belief that hopelessness may be assumed to be a measure of suicide-related thoughts, particularly considering that it is an important indicator of long-term suicide risk (Beck, Steer, Kovacs, & Garrison, 1985). Furthermore, it has been consistently found in association not only with suicide ideation (Nekanda-Trepka, Bishop, & Blackburn, 1983; Beck et al., 1985), but also with suicide attempts (Wetzel, 1976; Weishaar & Beck, 1992) and completed suicides (Beck, Brown, Berchick, Stewart, & Steer, 1990; Weishaar & Beck, 1990).

1.3 Relevance of the study of suicide ideation

The present thesis is mainly concerned with the identification of factors associated with the development of suicide ideation. Factors involved in the mitigation of suicide ideation were also the target of the present study. There are several reasons why suicide ideation research deserves special attention.

As mentioned previously, suicidal thoughts are reported as a common phenomenon among individuals in general, occurring more frequently than both attempted and completed suicide (Kessler et al., 1999). Data from a cross-national study in which epidemiologic surveys were conducted across nine countries, reported that the lifetime prevalence rates/100 for suicide ideation ranged from 2.09 to 18.51 (Weissman et al., 1999). Other studies accomplished in individual countries based on community samples reported similar rates (Bronisch & Wittchen, 1994; Kessler et al., 1999). At the clinical level, suicide ideation is also more prevalent than attempts and completed suicides (Brown, Beck, Steer, & Grisham, 2000; Fawcett et al., 1990). Also important is the fact that the prevalence of suicide ideation among college students reveals even higher rates. For instance, Rudd (1989) found that 44% of his sample of American college students experienced some form of suicide ideation during the previous year. Similarly, Meehan et al. (1992) found that 26% of their sample of American college students had thought about suicide during the past year and 54% had earlier in life thought about committing. Bjerke et al. (1992) found that 15% of Norwegian university students reported suicidal thoughts during the previous year, while over 37% of them had had thoughts about suicide earlier in life. In the present thesis, 18.6% of the young male military recruits reported suicidal thoughts (Paper IV), 6.8% of the university students reported to have had suicidal thoughts (Paper V), and finally, 14.3% of another sample of university students revealed the presence of suicidal thoughts (Paper VI).

Empirical findings suggest that those who communicate suicide ideation, those who attempt suicide and those who commit suicide have different characteristics (Kerkhof &

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Arensman, 2001). There is though accumulating evidence that there is an association between these phenomena. As clearly stated by Lecrubier (2001), it is known that the characteristics of suicide ideators, suicide attempters and suicide completers are substantially different. However, it is also known that ideation is the best predictor for an attempt and attempts predict completion. Actually, suicidal behaviour has long been considered to represent a continuum of constructs with absence of death ideation at one end, suicide ideation and attempts in the middle, and completed suicide on the other. In fact, Bedrosian and Beck (1979) have mentioned that the classification system developed by the United States National Institute of Mental Health (NIMH) Center for studies of Suicide Prevention implies continuity between suicide ideation and other forms of suicidal behaviour. Moreover, Beck (Beck, 1986; Bedrosian & Beck, 1979) has repeatedly emphasized the usefulness of studying suicide ideation. He argues that suicide ideation is a precursor of suicidal actions and states, based on some empirical findings (Lester & Beck, 1977) in which it was found that suicide ideators and attempters manifest similar psychological phenomena.

Different concepts or models have been developed to understand the relationship between these phenomena. Among them there is the suicidal pyramid, the suicidal career and the suicidal process.

The concept of *suicidal pyramid* is used to organize findings from cross-sectional and longitudinal studies to place the individuals according to the prevalence of suicidal behaviour exhibited (Heeringen, 2001). Accordingly, each layer of the pyramid describes the occurrence of non-fatal (suicide ideation, attempts and repetition) and fatal suicides. Thus, the first layer describes the proportion of individuals that report to have experienced suicide ideation. The second layer may consist of those individuals for whom suicide ideation is recurrent and may even have plans for a prospective suicidal behaviour. The third layer consists of those who attempted suicide. This layer may also contain those who have repeated suicide attempts. Finally, the top layer contains those individuals who committed suicide. This concept thus is

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based on the assumption that there is a stepwise progression from suicide ideation, attempts, and completed suicides.

The *suicidal career* concept, on the other hand, is used to describe the pathway that individuals may follow through the layers of the pyramid. This concept postulates that suicide occurs in the context of the entire lifetime experience of the individual and not as a reaction to a time-limited crisis. This concept has the following underlying notions according to Maris (1981): a) it is predicted that the profiles for suicides, nonfatal suicide attempters, and natural deaths on a given set of variables will differ, b) it is necessary to conceive of life-threatening behaviors as having histories, i.e., as being processes in evolution, c) death is never entirely reactive. There is always a relevant biography or, more accurately, a relevant set of biographies which mediates reaction to stress and helps to specify which individuals in so-called high risk groups will be most likely to respond to that stress with self-destructive behavior, d) it follows that lethality can either be acute (the short term probability of self-destruction) or chronic (the long-term probability of self-destruction), and that these types of lethality may be out of phase, e) we need to cast self-destructive behaviors into causal models that span suicidal subjects' lives from birth to death, and to analyse these behaviors using analysis-of-variance and regression techniques rather than merely labelling individuals as members of high-risk groups, f) the concept of suicidal careers implies that death styles can be mapped on relevant indices – for example, on the amount and rate of downward mobility, the numbers of previous acts of self-destruction and so forth. (p. 9)

The *suicidal process* is an approach to understand suicidal behaviour that proposes suicidal behaviour as a development from suicidal thoughts to completed action as expressions of an underlying suicidal tendency. According to Retterstøl (1993), the process can start at any point in an individual's life, usually being triggered by negative life events or stressful experiences. The suicidal thoughts can be chronic and remain active through life, or

can be sporadically activated due to the confrontation with adverse circumstances returning or not to the dormant state. The suicidal process is believed to hold its roots in early childhood.

Figure 1 shows an example of the suicidal process. As can be seen, the process may begin with momentary thoughts about suicide which may disappear and return after a while and eventually progress into a completed action. The dotted line represents the threshold below which the process is not observable, often represented by suicidal thoughts, plans, or impulses which can be found below this line. Suicidal communications and behaviours such as attempts and completed suicide may become observable to others, lying above the line.
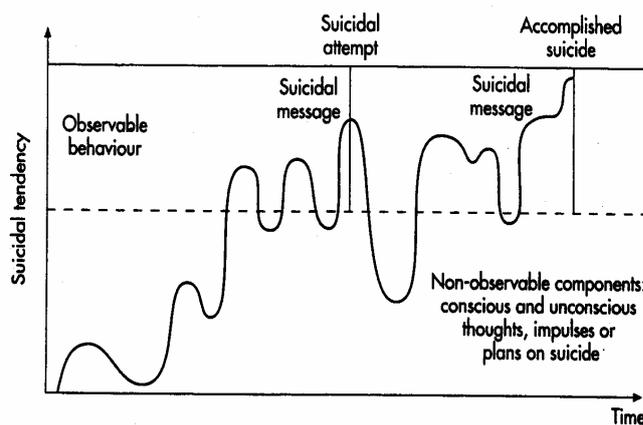
Figure 1. The suicidal process (reproduced by permission of Retterstøl, N. (1993) Suicide: A European Perspective. Cambridge: Cambridge University Press).

Also of paramount importance is the fact that about 90% of unplanned and 60% of planned first attempts occur within one year of the onset of ideation according to the findings of a general population survey conducted in the United States (Kessler et al., 1999). Moreover, suicide ideation significantly predicts eventual suicide in psychiatric patients (Brown et al., 2000; Fawcett et al., 1990). This is particularly evidenced by the findings of a

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recent 20-year prospective study with psychiatric outpatients, in which it was found that higher levels of suicide ideation were significantly associated with suicide, suggesting that presence of suicide ideation represents an independent estimate of the risk for suicide (Brown et al., 2000). In addition, the knowledge of which specific factors are involved in the development of suicide ideation might contribute to preventive efforts through the early recognition of those individuals who may become susceptible to suicide via suicide ideation. Similarly, the identification of some specific risk/protective factors can contribute to the improvement of therapeutic interventions. These facts underscore the importance of research focusing on the development of suicide ideation. Comparably, the investigation of factors involved in the mitigation of suicide ideation can contribute to the development or improvement of therapeutic interventions designed to treat suicidal individuals (Rudd & Joiner, 1998). As mentioned earlier, the continuum of suicidality proposed by Rudd and Joiner (1998) integrates the chronicity of suicidal behaviour, particularly the presence and intensity of suicide ideation, with risk and protective factors. The authors (Rudd & Joiner, 1998) provide the following description of the suggested continuum:

(a) nonexistent: no identifiable suicidal ideation; (b) mild: suicidal ideation of limited frequency, intensity, and duration, no identifiable plans, no intent (i.e., subjective or objective), mild dysphoria/symptomatology (i.e. psychache), good self-control (i.e. subjective and objective), few risk factors, and identifiable protective factors; (c) moderate: frequent suicidal ideation with limited intensity and duration, some specific plans, no intent (i.e. subjective or objective), good self-control (i.e. subjective and objective), limited dysphoria/symptomatology (i.e. psychache), some risk factors present, identifiable protective factors; (d) severe: frequent, intense, and enduring suicidal ideation, specific plans, no subjective intent but some objective markers of intent (e.g. choice of lethal method(s), the method is available/accessible, some limited preparatory behavior), evidence of impaired self-control (i.e. subjective and/or objective), severe dysphoria/symptomatology (i.e. psychache),

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multiple risk factors present, few if any protective factors; (e) extreme: frequent, intense, and enduring suicidal ideation, specific plans, clear subjective and objective intent, impaired self-control (i.e. subjective and objective), severe dysphoria/symptomatology (i.e. psychache), many risk factors, no protective factors. (p.144)

1.4 The construct of hopelessness

Hopelessness is an important psychological variable in suicidal behaviour. Hopelessness is usually defined as negative expectancies about the future (Beck et al., 1974) and has been proposed as central in the understanding and prediction of suicidal behaviour. In fact, some theoretical and empirical models of suicidal behaviour emphasizing the role of hopelessness have been proposed. Among the theoretical models, the most salient ones are the Beck's cognitive model of depression (Beck, 1967, 1976; Beck, Rush et al., 1979), Abramson's hopelessness theory of suicidality (Abramson et al., 2000), and more recently proposed, Rudd's cognitive-behavioral model of suicidality (Rudd, 2000; Rudd, Joiner, & Rajab, 2001).

According to *Beck's cognitive model*, cognitive processes are assumed to mediate the emotional and behavioural responses and are considered crucial in the precipitation and maintenance of various maladaptive psychological states (Beck & Clark, 1988; Beck & Freeman, 1990; Beck, Rush et al., 1979). The cognitive theory of psychopathology is based on an information processing approach which assumes that human functioning can be understood through the manner an individual perceive, interpret, and assign meanings to the events. In psychopathological states, maladaptive idiosyncratic schemas dominate the information processing system. Once the maladaptive schemas are activated they give rise to systematic distortions in the information processing system. The activation of these maladaptive schemas bias the individual's stream of consciousness eliciting automatic thoughts which are a reflection of the content of the underlying beliefs (Beck, 1967, 1976; Beck & Clark, 1988; Beck, Rush et al., 1979). For instance, depression-prone individuals are

believed to possess an enduring and particular set of dysfunctional cognitive structures (schemas) characterized by negativity. These negative maladaptive schemas lead them to view themselves, the world, and the future in a distorted way – the cognitive triad characteristic of depression. The dysfunctional schemas are thought to contain beliefs such as "I must be loved in order to be happy" or "I must be a success in order to be worthwhile" (Beck, 1987, p.22). Once activated under particular stressful life situations they are assumed to distort experience and to mould data into depressive automatic thoughts and images. Thus, the activation of these depressogenic schemas facilitates the emergence of negative automatic thoughts, which are a reflection of the content of the underlying beliefs (Beck, 1967). Suicidal wishes may emerge as the outcome of the negative expectations or as "an extreme expression of the desire to escape from what appear to be insoluble problems or an unbearable situation" (Beck & Rush, 1978, p.237). According to Beck's formulation, hopelessness is a cognitive factor characterized by pervasive negative expectancies which is believed to be among the core features of depression (Beck, 1963, 1967; Clark, Beck, & Brown, 1989). Thus, the cognitive set of the depressed individual is characterized by a negative self-concept and a pervasive pessimistic view of the world and the future. This negativist way of thinking is believed to contribute to the individual's conclusion that life is not worth living, that it is hopeless trying, and that suicide may become an acceptable or an appropriate solution for his/her problems.

The *hopelessness theory of suicidality* (Abramson et al., 2000) is an application of the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989) to the understanding of the psychosocial processes giving rise to suicidal behaviour, ranging from suicide ideation to completed suicide. Based on the supposition that depressive symptoms have multiple causes, this theory proposes an etiological account of one subtype of depression, the hopelessness-depression. Accordingly, it is believed that suicidality, a term used to refer to a continuum from suicide ideation to complete suicide, is a core symptom of hopelessness-

depression. Thus, individuals who become hopeless should become suicidal and develop, in addition, other symptoms of the hopelessness-depression.

According to the theory, it is the cognitive style of each individual that leads (or not) him/her to become hopeless and consequently suicidal when facing negative life events. The theory is based on the belief that it is the inferences that one makes about the events (negative life events) that influences whether or not the person will become hopeless and develop suicidal behaviour. Abramson et al. (2000) proposed that three kinds of inferences (causal attributions, inferred consequences, and inferred characteristics about the self) are crucial in the development of hopelessness and suicidal behaviour. In other words, it is the cognitive style of each individual that influences the content of the person's causal attributions and inferences about consequences and characteristics of the self when experiencing negative life events. Thus, when negative life events are viewed as important, attributed to stable (enduring) and global (likely to affect many outcomes) causes, viewed as likely to lead to other negative consequences or outcomes, feelings of hopelessness will emerged flourished by a lowered self-esteem and the thoughts that the person is flawed, unworthy, and deficient. In summary, individuals who become hopeless, and subsequently suicidal, are believed to possess a cognitive vulnerability characterized by a depressogenic inferential style which is triggered by the occurrence of negative life events.

Recently, Rudd (2000; Rudd et al., 2001) proposed a *cognitive-behavioral model of suicidality*. This model is an elaboration of Beck's (1996) modal theory of psychopathology, a refinement of his original cognitive model. As mentioned by Rudd et al. (2001), before applying cognitive theory to suicidality it is important to mention the fundamental assumptions of cognitive theory. The formal axioms of the cognitive theory of psychopathology as summarized by Alford and Beck (1997) are the following:

1. The central pathway to psychological functioning or adaptation consists of the meaning-making structures of cognition, termed *schemas*. "Meaning" refers to the person's interpretation of a given context and of that context's relationship to the self.

2. The function of meaning assignment (at both automatic and deliberative levels) is to control the various psychological systems (e.g., behavioral, emotional, attentional, and memory). Thus meaning activates strategies for adaptation.

3. The influences between cognitive systems and other systems are interactive.

4. Each category of meaning has implications that are translated into specific patterns of emotion, attention, memory, and behavior. This is termed *cognitive content specificity*.

5. Although meanings are constructed by the person, rather than being preexisting components of reality, they are correct or incorrect in relation to a given context or goal. When *cognitive distortion* or *bias* occurs, meanings are dysfunctional or maladaptive (in terms of systems activation). Cognitive distortions include errors in cognitive content (meaning), cognitive processing (meaning elaboration), or both.

6. Individuals are predisposed to specific faulty cognitive constructions (cognitive distortions). These predispositions to specific distortions are termed *cognitive vulnerabilities*. Specific cognitive vulnerabilities predispose persons to specific syndromes; cognitive specificity and cognitive vulnerability are interrelated.

7. Psychopathology results from maladaptive meanings constructed regarding the self, the environmental context (experience), and the future (goals), which together are termed the *cognitive triad*. Each clinical syndrome has characteristic maladaptive meanings associated with the components of the cognitive triad. All three components are interpreted negatively in depression. In anxiety, the self is seen as inadequate (because of deficient resources), the context is thought to be dangerous, and the future appears uncertain. In anger and paranoid disorders, the self is seen as unfair and opposing one's interests. Cognitive content specificity is related in this manner to the cognitive triad.

8. There are two levels of meaning: (a) the objective or *public meaning* of an event, which may have few significant implications for an individual; and (b) the *personal* or *private meaning*. The personal meaning, unlike the public one, includes implications, significance, or generalizations drawn from the occurrence of the event (Beck, 1976, p. 48). The personal or private level of meaning was earlier presented as the concept "personal domain" (Beck, 1976, p. 48).

9. There are three levels of cognition: (a) the preconscious, unintentional, *automatic* level ("automatic thoughts"); (b) the conscious level; and (c) the metacognitive level, which includes "realistic" or "rational" (adaptive) responses. These serve useful functions, but the conscious levels are of primary interest for clinical improvement in psychotherapy.

10. Schemas evolved to facilitate adaptation of the person to the environment, and are in this sense *teleonomic* structures. Thus, a given psychological state (constituted by the activation of systems) is neither adaptive nor maladaptive in itself, but only in relation to or in the context of the larger social and physical environment in which the person resides. (p. 15-17; emphasis in original)

As mentioned earlier, Rudd's cognitive-behavioral model of suicidality is based on Beck's modal theory of psychopathology published in 1996. Beck's (1996) modal theory is built around the concept of mode, the structural unit that contains schemas. *Modes* are defined as "specific suborganizations within the personality organization [that] incorporate the relevant components of the basic systems of personality: cognitive (information processing), affective, behavioral, and motivational" (p.4). The suicidal mode is thus composed of four systems (a cognitive, an affective, a behavioral, and a physiological system) which in turn are composed of structures identified as schemas. The cognitive system is characterized by the suicidal belief system, which is believed to incorporate maladaptive meaning constructed and assigned by the suicidal individual regarding the self, others, and the future. The suicidal belief system is also proposed to incorporate associated conditional rules/assumptions such as

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If I'm perfect, then people would accept me, as well as compensatory strategies as overcompensation, perfectionism, and subjugation in relationships. Finally, the suicidal belief system is characterized by pervasive hopelessness, the central feature of an active suicidal mode.

The fundamental assumptions of the cognitive-behavioral model of suicidality proposed by Rudd (2000) are as follows:

1. The central pathway for suicidality is cognition, that is, the *private* meaning assigned by the individual. Suicidality is secondary to maladaptive meaning constructed and assigned regarding the self, the environmental, and the future (i.e., the cognitive triad, along with related conditional assumptions/rules and compensatory strategies, referred to as the *suicidal belief system.*

2. The relationship between the suicidal belief system (i.e., cognitive triad specific to the *suicidal mode*) and the other psychological (e.g., behavioral, emotional, attentional, memory) and biological/physiological systems is interactive and interdependent.

3. The suicidal belief system will vary from individual to individual, depending on the content and context of the various psychological systems (e.g., cognitive content specificity). Nonetheless, there will be some uniformity in terms of identified categories (i.e., helplessness, unlovability, poor distress tolerance), which are all tinged by a pervasive sense of hopelessness.

4. Individuals are predisposed to suicidality as a function of cognitive vulnerabilities, or *faulty cognitive constructions,* which covary with specific syndromes. Accordingly, different cognitive vulnerabilities are consistent with different syndromes and patterns of comorbidity, both Axis I and Axis II.

5. Suicidality and the suicidal belief system reside at three distinct levels, the preconscious or *automatic* level, the conscious level, and the metacognitive (i.e., unconscious) level, with the

conscious levels most amenable to psychotherapy change. The structural content of the suicidal belief system, at all three levels, is contained within the *suicidal mode*. (p.21-22)

As mentioned earlier, empirical models in which the role of hopelessness has been addressed have also been proposed and tested. Accordingly, the *Diathesis-Stress-Hopelessness* (Schotte & Clum, 1982) is a model of suicidal behaviour which focuses on the relationship between life stress, deficient problem-solving ability and hopelessness. This model is an extension of an earlier proposed etiological model of suicide attempts (Clum, Patsiokas, & Luscomb, 1979) which suggested that life stress interacts with problem-solving deficits to increase the probability of suicidal behaviour. Schotte and Clum (1982) thus elaborated this model, asserting that cognitively rigid individuals, when facing stressful life events are likely to become hopeless and engage in suicidal behaviour. Accordingly, it was hypothesized that individuals become hopeless due to their cognitive inability to cope with stress which leads them to develop and eventually engage in suicidal behaviour. This model was then tested with college students and the results revealed that students exhibiting high levels of suicide ideation utilized poor problem-solving skills to solve hypothetical problems, they also experienced high levels of stressful life events compared to the non-suicide ideators students. Also relevant were the results of an analysis of the contributions of depression and hopelessness at different levels of suicide ideation. Hopelessness emerged as an increasing salient factor in association with increasing levels of suicide ideation while depression was strongly associated with lower levels of suicide ideation (Schotte & Clum, 1982). A later application of this model with hospitalized suicidal psychiatric patients provided further support for the interaction between problem-solving, stress, and hopelessness (Schotte & Clum, 1987). It was found that, compared to the nonsuicidal psychiatric control group, suicidal inpatients exhibited more deficits in their problem-solving abilities, experienced higher levels of hopelessness and more negative life stress.

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Bonner and Rich (1987) proposed a *transactional stress-vulnerability model* in which environmental, cognitive, and interpersonal factors are believed to lead to suicide ideation and behaviour. They attempted to replicate and extend Schotte and Clum's (1982, 1987) model by adding additional cognitive and social variables. They hypothesized that in response to high environmental stress, individuals high in cognitive distortions and rigidity, low in perceived and/or actual social support, and low in adaptive reasons for living would score highest on a measure that assess a continuum of suicidal behaviour. Since no complete support for this model was found, they suggested that suicide ideation and behaviour may be better conceptualized as a multidimensional process in which social-emotional alienation, cognitive distortions, and deficient adaptive resources serve as a predispositional base to suicide ideation and behaviour. More specifically, once suicide ideation is elicited, the individual is believed to be at risk for increasing alienation, depression, and the exacerbation of stress. Repeated exposure to, and failure to cope with, stress develops a sense of hopelessness which increases the suicide ideation leading to more lethal forms of suicidal behaviour.

This model was further tested with college students (Rich & Bonner, 1987) exhibiting current suicide ideation and self-prediction of future suicide probability, or the probability that the individual would overtly act on his/hers ideation in the future. The results revealed that the combined influence of depression, loneliness, few reasons for living, and negative life stress was found to be significantly associated with current suicide ideation. Of particular interest is the fact that current suicide ideation in association with hopelessness, dysfunctional cognitions, and few reasons for living were highly predictive of self-predicted future suicide probability.

Studies accomplished with psychiatric patients have found support for the hypothesis that hopelessness can place an individual at risk for experiencing suicide ideation and other suicidal behaviours. This is evidenced by the findings by Beck et al. (1985) who reported that initial levels of hopelessness predicted eventual suicides in adult psychiatric inpatients over a

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period of five years. In addition, hopelessness has been found to be a better predictor of

suicide ideation in adult psychiatric inpatient and outpatient samples than depression (Beck,

Steer, Beck, & Newman, 1993; Hughes & Neimeyer, 1993).

1.5 Hopelessness and suicide risk: Empirical evidence

Hopelessness has emerged as a powerful cognitive variable connecting depression and

suicidal behaviour (Beck & Rush, 1978; Beck et al., 1985). Early empirical studies revealed a

significant association between hopelessness and degree of suicide intent in suicide attempters

(Beck, Kovacs, & Weissman, 1975; Minkoff, Bergman, Beck, & Beck, 1973; Wetzel, 1976).

In fact, in the above mentioned studies, hopelessness was found to correlate higher with

suicide intent than depression per se. Moreover, in the study by Beck et al. (1975) and Wetzel,

Margulies, Davis, and Karam (1980), the correlation between suicide intent and depression

became nonsignificant when the effect of hopelessness was controlled for. Later studies have

demonstrated that hopelessness is the cognitive factor most consistently related not only to

suicide intent in suicide attempters (Bedrosian & Beck, 1979), but also to suicide ideation

(Beck et al., 1985) and completed suicide (Beck, Brown et al., 1990). Furthermore,

hopelessness is a better predictor of eventual suicide than depression (Beck, Brown et al.,

1990; Beck, et al., 1985). In a 10-year prospective follow-up study (Beck et al., 1985) of 165

patients hospitalized with suicide ideation, it was found that hopelessness was very powerful

indicator of eventual suicide. This is indicated by the fact that 90.9% of the patients who

eventually committed suicide had hopelessness scores, measured by the Beck Hopelessness

Scale (BHS; Beck et al., 1974) greater than 9. A replication of this study with outpatients

revealed similar findings (Beck, Brown et al., 1990). More specifically, a BHS score of 9 or

higher correctly identified 94.1% of those patients who eventually committed suicide. Finally,

it seems to be an important predictor of repetition of suicidal behaviour (Petrie, Chamberlain,

& Clarke, 1988), which also has been shown to be associated with risk of eventual suicide (Beck et al., 1985).

Despite the considerable consistency regarding adult psychiatric patients, these findings do not seem to be clearly extensive to non-clinical samples. For instance, while there is some evidence of the strong association between hopelessness and high levels of suicide ideation in non-clinical samples as suggested by the studies by Clum and colleagues (Clum et al., 1979, Schotte & Clum, 1982), other research findings suggest that depression, not hopelessness, is the stronger predictor of suicide ideation in young adults. This is evidenced by the findings of a study by Rudd (1990) who reported a stronger association between depression, rather than hopelessness, and suicide ideation.

1.5.1 Anxiety disorders and hopelessness

According to the cognitive model of depression (Beck, 1967, 1976; Beck, Rush et al., 1979), hopelessness is hypothesized as an important cognitive aspect and a major feature of the depressive symptomatology. In fact, hopelessness or negative view of the future is part of the cognitive triad characteristic of a depressed individual. Despite the apparent centrality of hopelessness to depression, this specificity has been questioned by some authors such as Stotland (1969) who initially suggested that hopelessness occurs in other psychiatric disorders such as anxiety disorders and schizophrenia. Based on this assertion, Beck, Riskind, Brown, and Steer (1988) decided to test the hypothesis that hopelessness is in fact an attribute of depression. The results revealed that outpatients meeting the criteria for major depressive disorder without a concurrent anxiety disorder, had significantly higher mean levels of hopelessness compared to generalized anxiety patients with no concurrent depressive disorder and the psychiatric control group comprising patients meeting the criteria for other than affective or anxiety disorders. Furthermore, no significant differences were found between the generalized anxiety disorder patients and the psychiatric control group on the level of

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hopelessness. The major depressive disorder patients also had significantly higher depressive symptoms than the generalized anxiety patients, which in turn had significantly higher depressive symptoms than the psychiatric control patients. The authors concluded that the findings provide partial support for the content-specificity hypothesis (negative cognitive triad) of the cognitive model of depression.

The relationship between hopelessness and anxiety disorders has also been examined by other researchers. Few studies though have assessed levels of hopelessness in patients with anxiety disorders. Overbeek, Rikken, Schruers and Griez (1998) found that patients with panic disorder with and without agoraphobia had higher scores on the hopelessness scale compared with individuals without any psychiatric pathology. However, as mentioned by the authors, the score on the hopelessness scale for the patient group was below the cut-off score of 9 which indicates suicide risk as stated by Beck, Brown et al. (1990). Similarly, Beck, Steer, Sanderson, and Skeie (1991) found that panic patients with or without agoraphobia had significantly lower scores on the hopelessness scale than patients with mood disorders.

Despite the need for additional empirical evidence, some support for Beck's (1976; Beck & Freeman, 1990; Beck, Rush et al., 1979) proposition that each disorder has a characteristic cognitive content which sustains the content-specificity hypothesis, has been provided. The next section presents a brief overview of the literature on the status and current findings of suicide risk research in psychiatric disorders.

1.6 The risk of suicide in psychiatric disorders

1.6.1 Mood disorders

According to most psychological autopsy studies, over 90% of all completed suicides occur in the context of a mental disorder (Moscicki, 1999). This association seems to be independent of age since the findings are consistent across different age groups (Bronisch,

1996). The most frequently diagnoses associated with completed suicides are mood disorders followed by substance abuse (Cheng, 1995; Henriksson et al., 1993) and schizophrenia (De Leo & Spathonis, 2003). Among the mood disorders, major depression is the most frequent diagnosis found in completed suicides (Cheng, 1995; Isometsä, Heikkinen, et al., 1996; Lesage et al., 1994). Other mood disorders such as bipolar disorder (Isometsä, Heikkinen, et al., 1996; Lesage et al., 1994) and dysthymia (Cheng, 1995; Isometsä, Heikkinen, et al., 1996) have also been found among those who committed suicide.

Major depression has also been reported as the main diagnosis associated with suicide attempts (Asnis et al., 1993; Beautrais et al., 1996; Petronis, Samuels, Moscicki, & Anthony, 1990) and ideation (Asnis et al., 1993; Bronisch & Wittchen, 1994). Bipolar disorder has also been reported as associated with suicide attempts (Angst, 1995; Chen & Dilsaver, 1996) and ideation (Asnis et al., 1993). Similarly, dysthymia has been reported as related to high risk of suicide attempts (Bronisch & Wittchen, 1994; Dyck, Bland, Newman, & Orn, 1988) and ideation (Bronisch & Wittchen, 1994; Hintikka et al., 1998).

1.6.2 Anxiety disorders

Contrary to the mood disorders in which certain consistency has been observed across the studies, suicide risk in anxiety disorders is inconclusive. In a review by Noyes (1991) based on retrospective studies in which the broad category of anxiety disorders was considered, the rates of death by suicide among those disorders was noted to range from 6% to 60%. At the specific diagnostic level, panic disorder has been the target of most studies. Panic disorder was mentioned by Coryell, Noyes and Clancy (1982) as having excess mortality with the rate of 20% completed suicides. Henriksson et al. (1996), on the other hand, found that only 1.2% of the suicides occurred in the context of a diagnosis of panic disorder according to data from autopsy reports in Finland. Also not particularly high were

the 2.7% panic disordered individuals who died by suicide as found by Lesage et al. (1994) in a Canadian study. No excess mortality was reported for obsessive-compulsive disorder (Coryell, 1981). However, some individuals diagnosed with generalized anxiety disorder (4%), obsessive-compulsive disorder (2.7%), agoraphobia (2.7%), and social phobia (1.3%) were found among those who committed suicide in the Canadian autopsy study by Lesage et al. (1994).

The risk of suicide attempts and suicide ideation has also been investigated in anxiety disorders and certain inconsistency in the findings can be observed. A recent study by Khan, Leventhal, Khan and Brown (2002), using a large sample of patients with anxiety disorders (N = 20076) from the US Food and Drug Administration (FDA) database, concluded that the incidence of suicide attempts for these patients was higher than in the general population. This assertion was partially based on the findings that 10 of the 4293 patients with panic disorder with or without agoraphobia and 17 of the 9776 patients with obsessive-compulsive disorder had attempted suicide. None of the 917 patients with social phobia attempted suicide and no data was available for generalized anxiety disorder. Most of the studies though have focused on panic disorder. One study has found a relatively high rate (42%) of suicide attempts in outpatients with panic disorder (Lepine, Chignon, & Teherani, 1993). Other studies have reported relatively lower rates ranging from 0% (Beck et al., 1991) to 4% (Borden, 1994; Friedman, Jones, Chernen, & Barlow, 1992; Massion, Warshaw, & Keller, 1993). Additional studies have found rates ranging from 7% to 23% (Dyck et al., 1988; Markowitz, Weissman, Ouellette, Lish, & Klerman, 1989; Weissman, Klerman, Markowitz, & Ouellette, 1989; Johnson, Weissman, & Klerman, 1990; Noyes et al., 1991; Asnis et al., 1993; Massion et al., 1993; Cox, Direnfeld, Swinson, & Norton, 1994; Norton et al., 1996). Similar findings have been reported regarding suicide ideation. Accordingly, some studies have reported relatively moderate to high rates (26%- 50%) of suicide ideation in patients with panic disorder (Weissman et al., 1989; Asnis et al., 1993, Borden, 1994; Cox et al.,

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1994), while others did not find any particular high rate of suicide ideation (Beck et al., 1991; Friedman et al., 1992; Overbeek et al., 1998). Most of the studies though suggest that panic disorder contributes substantially to the risk of suicide ideation when it is comorbid to depressive disorder or depressive symptoms (Cox et al., 1994; Friedman et al., 1992; Lepine et al., 1993; Noyes et al., 1991). Much of the concern about suicide risk in panic disorder, evidenced by high rates of suicide attempts and ideation, was incited by Weissman's et al. (1989) study. In this study it was reported that patients with a lifetime diagnosis of panic disorder present an increased suicide ideation compared to those with other psychiatric disorders or those with no history of psychiatric disorders. The authors also found that an increased risk of suicide ideation occurred independently of both co-existing major depression and agoraphobia. However, another study by Petronis et al. (1990), analysing the same set of Epidemiologic Catchment Area (ECA) study data used by Weissman et al. (1989), did not report panic disorder as a suicide risk factor. Moreover, Beck and co-workers (1991) found that in a large group of psychiatric outpatients, the diagnosis of panic disorder both with and without agoraphobia was negatively related to suicidal ideation, and they concluded that panic disorder does not constitute a risk factor for suicide. A recent study (Starcevic, Bogojevic, Marinkovic, & Kelin, 1999) found that panic disorder was only related to suicide ideation when a comorbid personality or mood disorder was present.

As mentioned by Khan et al. (2002), "little is known about suicide risk in patients with other anxiety disorders" (p.184). Accordingly, fewer studies have investigated the risk of suicide attempts and ideation in other anxiety disorders. Lepine and Lellouch (1995a) found that 18.6% of the individuals who were diagnosed as social phobics in a general survey conducted in France had attempted suicide. Davidson, Hughes, George, and Blazer (1993) reported a rate of 12.1% of attempted suicide in social phobics. Norton et al. (1996) found that 15% of the patients with social phobia had attempted suicide, while Cox et al. (1994) reported a rate of 12% of suicide attempts. Lepine and Lellouch (1995b) also found high rate

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of suicide ideation in women with social phobia. Another study (Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992) examining aspects of social phobia in the general population based on data from an Epidemiologic Catchment Area (ECA) study with adults in four United States communities found similar characteristics with those reported in clinical social phobia samples. The rate of suicidal ideation was statistically significant in individuals with social phobia (Schneier et al., 1992). Cox et al. (1994) reported a rate of 34% of suicide ideation in social phobic patients. All studies so far thus seem to find an increased risk for suicide in patients with social phobia.

The risk of suicidal behaviour has also been investigated in agoraphobia. More specifically, high rate of suicide attempts (12%) and ideation (35%) were found for women with agoraphobia in a study by Lepine and Lellouch (1995b).

Asnis et al. (1993) have assessed suicide attempts and ideation in patients with generalized anxiety disorder. The authors found lower rate of suicide attempts in generalized anxiety disorder (17%) compared with major depression (35%). They also reported significant lower level of suicide ideation (18%) in patients with generalized anxiety disorder compared to several other psychiatric disorders such as depressive disorders (64%) and panic disorder (41%). Finally, in a community survey by Dyck et al. (1988), it was found that 14.8% of suicide attempters met diagnostic criteria for obsessive-compulsive disorder.

1.6.3 Somatization disorder

Despite the fact that patients with somatization disorder may engage in suicidal behaviour such as threats and attempts as it is described in the DSM-IV (1994), relatively little attention has been paid to what extent somatization disorder is associated with risk of suicide. Completed suicides though seem to be a rare event in patients with somatization disorder. Coryell (1981) after following-up a group of women with Briquet's syndrome did not find evidence of excess mortality in this group. He concluded that the risk for completed

suicide among somatization disorder patients appears too be substantially lower than than among patients with primary depression. Morrison (1982) reported similar findings. On the other hand, suicide attempts seem to be a frequent event in patients with somatization disorder as asserted by Woodruff, Clayton, and Guze (1972) who found that 42% of the patients meeting criteria for Briquet's syndrome (a predecessor of somatization disorder) had attempted suicide. Although lower rates of suicide attempts (4%-20%) were reported in earlier studies (Bibb & Guze, 1972; Perley & Guze, 1962; Purtell, Robins, & Cohen, 1951), a marked increase in the rates was observed in later studies. Accordingly, the rates ranged from 44% to 65% (DeSouza & Othmer, 1984; Morrison & Herbstein, 1988; Tomasson, Kent, & Coryell, 1991; Zoccolillo & Cloninger, 1986). Suicidal thoughts seem to be an even more frequent event in patients with somatization disorder as can be observed by the 76% found by DeSouza and Othmer (1984) and 80% by Morrison and Herbstein (1988).

1.6.4 Personality disorders

Personality disorders as a general category are frequently reported as being associated with suicide risk (Black, Warrack, & Winokur, 1985; Pokorny, 1983). Completed suicides (Henriksson et al., 1993) and suicide attempts (Frances, Fyer, & Clarkin, 1988) are mentioned as common in patients with personality disorders. Several autopsy studies have reported high incidence of personality disorders among subjects who have committed suicide (Arato, Demeter, Rihmer, & Somogyi, 1988; Rich & Runeson, 1992). According to Duberstein and Conwell (1997) approximately 30% to 40% of all suicides are committed by patients diagnosed with a personality disorder. Moreover, empirical evidence demonstrates that 55% to 70% of individuals who attempt suicide meet diagnostic criteria for a personality disorder (Casey, 1989; Clarkin, Friedman, Hurt, Corn, & Aronoff, 1984). At the cluster level, Isometsä, Henriksson, et al. (1996) reported that 0.4% of all the suicide victims met diagnostic criteria for cluster A, 18% for cluster B, and 10% for cluster C. At the specific

diagnostic level, borderline personality disorder (Brodsky, Malone, Ellis, Dulit, & Mann, 1997; Gardner & Cowdry, 1985; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994; Soloff, Lynch, Kelly, Malone, & Mann, 2000) has been the target of most studies followed by antisocial personality disorder (Frances et al., 1988). However, there is also evidence that narcissistic personality disorder renders an individual vulnerable to suicidal behaviour (Kernberg, 1984), and that schizoid personality disorder may be associated with suicide risk (Duberstein & Conwell, 1997). It has also been suggested that histrionic personality disorder, paranoid personality disorder and schizotypal personality disorder are associated with suicide risk (Brent et al., 1994). Similarly, some individuals meeting criteria for avoidant, dependent, and obsessive-compulsive personality disorders were found among those who committed suicide according to three psychological autopsy studies (Brent et al., 1994, Isometsä, Henriksson, et al., 1996, Lesage et al., 1994). More specifically, the first one including a total sample of 43 adolescents who committed suicide, reported that 14% met the criteria for avoidant personality disorder, 7% met the criteria for dependent personality disorder, and 2.3% met the criteria for obsessive-compulsive personality disorder (Brent et al., 1994). The second study revealed that, in a total sample of 229 individuals who committed suicide, four individuals (1.7%) met the criteria for avoidant personality disorder, five (2.2%) met the criteria for dependent personality disorder, and two (0.8%) met the criteria for obsessive-compulsive personality disorder (Isometsä, Henriksson, et al., 1996). Finally, the third autopsy study found that two individuals (2.7%) of a total sample of 75 who committed suicide met the criteria for an obsessive-compulsive personality disorder (Lesage et al., 1994).

1.6.5 The role of comorbidity

The term comorbidity refers to the "co-occurrence of at least two different disorders in the same individual" (Brown & Barlow, 1992, p.835). The comorbidity among psychiatric

disorders has emerged as a significant topic not only due to the high prevalence of a secondary diagnosis in one individual, but also due to its documented implication on the symptomatology, course, choice of therapeutic interventions, and treatment outcome of the disorders (Maser & Cloninger, 1990). Comorbidity though does not occur only between and among the Axis I disorders, but also between the Axis I and Axis II personality disorders and among the personality disorders. There is a substantial comorbidity between mood and anxiety disorders (Dozois, & Dobson, 2004; Wittchen & Essau, 1993; Wittchen, Essau, & Krieg, 1991), as well as between Axis I and Axis II personality disorders (Akiskal, Hirschfeld, & Yerevanian, 1983; Black, Bell, Hulbert, Nasrallah, 1988; Brooks, Baltazar, McDowell, Munjack, & Bruns, 1991; Corruble, Ginestet, Guelfi, 1996; Turner, Beidel, Borden, Stanley, & Jacob, 1991). Some studies have emphasized the impact of a comorbid personality disorder in the treatment outcome and course of Axis I disorders (Farmer & Nelson-Gray, 1990; Shea, Widiger, & Klein, 1992).

Most importantly is the fact that comorbid conditions seem to be related to increased suicide risk (Corbitt, Malone, Haas, & Mann, 1996; Henriksson et al., 1993). Studies have reported that patients primarily diagnosed with depression presenting a comorbid Axis II disorder exhibit more suicidal ideation and attempts than those not presenting a comorbid condition (Charney, Nelson, & Quinlan, 1981; Shea, Glass, Pilkonis, Watkins, & Docherty, 1987). Similar findings have been reported regarding completed suicides (McGlashan, 1987). As mentioned previously, a substantial amount of the risk of suicide in panic disorder has been applied to the existence of a comorbid depressive disorder. Empirical evidence has demonstrated that panic disorder contributes substantially to suicide risk when it is comorbid to depressive disorder or depressive symptoms (Cox et al., 1994; Friedman et al., 1992; Lepine et al., 1993; Noyes et al., 1991). A recent study (Starcevic et al., 1999) found that panic disorder was only related to suicide ideation when a comorbid personality or mood disorder was present.

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There is also considerable research stating the role of a secondary diagnosis on the risk of suicide in somatization disorder. For instance, a study by Morrison and Herbstein (1988) compared the characteristics of patients exhibiting a primary diagnosis of somatization disorder with comorbid depression severe enough to qualify for a DSM-III (1980) diagnosis of major depression with patients diagnosed with a primary depression (major depression or bipolar disorder). They found that patients with somatization disorder had significantly more suicidal ideas (80% vs 55%), suicide attempts (65% vs 31%), and multiple suicide attempts (41% vs 3%) compared to patients with primary depression. Accordingly, the reported history of suicide attempts in patients with somatization disorder has often occurred in the context of depressive symptoms (DeSouza & Othmer, 1984) or in the presence of a diagnosable depressive disorder (Morrison & Herbstein, 1988; Tomasson et al., 1991; Zoccolillo & Cloninger, 1986).

1.7 Other risk factors

1.7.1 Cognitive factors

The emphasis on the role of cognition in the etiology of depressive states impelled the examination of the accountability of cognition in the development of suicidal behaviour (Weishaar & Beck, 1990). In addition to hopelessness, selective abstraction and overgeneralization, two specific cognitive distortions, emerged as predictors of suicide ideation in a sample of adults diagnosed with unipolar major depressive disorder (Prezant & Neimeyer, 1988). Dichotomous thinking, another type of cognitive distortion, has also been reported to be characteristic of suicidal individuals (Neuringer & Lettieri, 1971). Suicide ideators have been found to exhibit interpersonal problem-solving deficits (Schotte & Clum, 1982, 1987), a negative attributional style (Joiner & Rudd, 1995; Priester & Clum, 1992), and a negative self-concept (Beck, Steer, Epstein, & Brown, 1990).

Some researchers have thus identified an association between depressogenic beliefs as measured by the Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978) and suicide ideation. For instance, Ranieri et al. (1987) reported a significant association between depressogenic beliefs and suicide ideation in a sample of psychiatric inpatients. Similarly, Ellis and Ratliff (1986) found that hospitalized suicide attempters presenting current suicide ideation had significantly higher scores on the DAS-A compared to non-suicidal patients. However, the findings from various studies seem to be somewhat inconsistent since Beck, Steer and Brown (1993) did not find a significant association between the overall severity of dysfunctional attitudes measured by means of the DAS-100 and suicide ideation in a sample of psychiatric outpatients.

Considering the fact that cognitive therapy emphasizes the modification of dysfunctional beliefs and automatic thoughts in order to alleviate symptomatology and ameliorate maladaptive states (Beck, Rush et al., 1979), it seems of value to investigate the precise relationship between dysfunctional attitudes, automatic thoughts, and suicide ideation. Moreover, the exploration of the role of dysfunctional attitudes and automatic thoughts in the development of suicide ideation may eventually contribute to the advancement of cognitive interventions specifically designed for treating suicidal individuals such as the cognitive-behavioral model of suicidality proposed by Rudd (2000; Rudd et al., 2001).

1.7.2 Personality traits

Personality traits can be defined as "dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions" as proposed by McCrae and Costa (2003, p. 25). Thus, contrary to *state*, which refers to transient reactions to immediate situation, *trait* is relatively stable and lasting referring to the individual's general tendency to react in a particular way.

As mentioned by McCrae and Costa (1995), trait concept of personality is based on the following ideas which were formally elucidated by Loevinger (1957) and Tellegen (1991):

(i)   Personality traits are not descriptive summaries of behavior, but rather dispositions that are inferred from and can predict and account for patterns of thoughts, feelings, and actions.

(ii)   Scientific evidence for the existence of traits is provided (in part) by studies that show patterns of covariation across time, twin pairs, and cultures – covariation that cannot readily be explained by such alternatives as transient influences, learned responses, and cultural norms.

(iii)   Patterns of covariation provide non-circular explanations, because observation of some behaviors allows the prediction of other, non-observed behaviors.

(iv)   Psychological constructs give conceptual coherence to the covarying patterns of thoughts, feelings, and actions; good constructs have surplus meaning that points beyond the known correlates of a trait.

(v)   Trait explanations are not themselves mechanistic; the mechanisms through which they operate may or may not be specified in a psychological theory.

(vi)   When trait standing in an individual is assessed using a validated method, knowledge of the trait's manifestations can legitimately, albeit fallibly, be invoked to explain that individual's behavior. (p.248)

Subsequently, McCrae and Costa (1996) added the following additional assumptions:

(vii)   Personality traits are hypothetical psychological constructs, but they are presumed to have a biological basis.

(viii) Over time, traits interact with the environment to produce culturally conditioned and meaning-laden characteristic adaptations (such as attitudes, motives, and relationships).

(ix)   Specific behaviors occur when these characteristic adaptations interact with the immediate situation; traits are thus best construed as indirect or distal causes of behavior. (p. 248)

The proposition that psychopathologic states arise from pre-existing and predisposing traits that are believed to constitute a premorbid personality dates back to the Hippocratic physicians (Jackson, 1986). This dimensional view paved the way to the emergence of trait psychology which is based on the belief that there is consistency or continuity of an individual's actions, thoughts, and feelings. This dimensional view instigated the interest of researchers in the relationship between personality dimensions and psychiatric disorders (Clark, Watson, & Mineka, 1994; Hirschfeld, Klerman, Clayton, & Keller, 1983; Hirschfeld et al., 1989; Watson, Clark, & Harkness, 1994; Widiger & Trull, 1992). Although much research has been undertaken since the initial speculations on the role of personality in the development of mental illness, the emergence of the five-factor model of personality, a prominent structural model of personality, expanded this type of research. The five-factor model proposes that personality attributes can be grouped along five major dimensions, namely, Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness (Costa, & McCrae, 1978, 1980, 1992a; Digman, 1990). This model is supposed to offer the most comprehensive description of personality structure. The NEO Personality Inventory was then developed to empirically assess the five-factor model of personality (Costa & McCrae, 1992a). Although the NEO Personality Inventory was developed to measure assumedly normal personality traits, it has been used to investigate the relationship between the five dimensions and Axis I mental disorders (Trull & Sher, 1994; Widiger & Trull, 1992) and Axis II personality disorders (Costa & McCrae, 1990, 1992b).

According to the five-factor model of personality, *Neuroticism* is characterized by a predisposition to experience psychological distress such as fear, sadness, embarrassment, anger, guilt, disgust, and other negative affects. It reflects a certain degree of maladjustment

and emotional instability. Individuals are also prone to have irrational ideas, to be less able to control their impulses, and to cope more poorly than others with stress (Costa & McCrae, 1992a). *Extraversion*, on the other hand, is believed to reflect adjustment or emotional stability. It is characterized by a tendency to prefer large groups, gatherings and social activities. Individuals are assertive, talkative, active, like excitement and stimulation, tend to be cheerful, optimistic, and lively. *Openness to experience* is seen as aesthetic sensitivity, intellectual curiosity, attentiveness to inner feelings, need for variety, and nondogmatic attitudes. Open individuals are believed to experience both positive and negative emotions more enthusiastically than do closed individuals. Openness is specially related to divergent thinking contributing to creativity (McCrae, 1987). Low scores on Openness reveal a tendency towards conventionality in behaviour and conservativeness in outlook. Such individuals prefer the familiar to the novel, and their emotional responses are somewhat muted (McCrae, & Costa, 1997). *Agreeableness* involves trust, altruism, and sympathy, and is contrasted with cynical and self-centered antagonism. The agreeable person is fundamentally altruistic, sympathetic to others, and eager to help them. The disagreeable or antagonistic person is egocentric, sceptical of others' intentions, and competitive rather than cooperative. Low scores on Agreeableness have been associated with Narcissistic, Antisocial, and Paranoid Personality Disorders, whereas high scores on Agreeableness have been associated with the Dependent Personality Disorder (Costa & McCrae, 1990). Finally, *Conscientiousness* encompasses both a disciplined striving after goals and strict adherence to principles. It refers to organization and achievement. The conscientious individual is said to be purposeful, strong willed, and determined. High scores are scrupulous, punctual, and reliable while low scores are not necessarily lacking in moral principles, but they are less exacting in applying them, just as they are more lackadaisical in working toward their goals (Costa & McCrae, 1992a).

A considerable amount of empirical research has demonstrated a significant association between Neuroticism, a personality dimension characterized by a general tendency to experience negative affects, and depression. This is evidenced by the findings that clinically depressed individuals exhibit higher levels of Neuroticism compared to controls (Bagby, Joffe, Parker, Kalemba, & Harkness, 1995; Duggan, Sham, Lee, Minne, & Murray, 1995; Enns & Cox, 1997). In fact, Neuroticism has been suggested as a predisposing factor to clinical depression (Flett, Hewitt, Endler, & Bagby, 1995; Widiger & Trull, 1992). Neuroticism has also been related to depression of non-clinical severity. This assertion is evidenced by the studies by Meites, Lovallo, and Pishkin (1980), Hill and Kemp-Wheeler (1986), and Saklofske, Kelly, and Janzen (1995) who found mild levels of depression to be significantly related to Neuroticism in university students. Contrary to Neuroticism, Extraversion reflects positive emotionality and is characterized by a propensity to experience positive emotions. Some association, although less robust and consistent, has been found between Extraversion and depression in clinical (Enns & Cox, 1997) and non-clinical (Meites et al., 1980; Hill & Kemp-Wheeler, 1986; Saklofske et al., 1995) studies.

Contrary to the vast amount of studies on depression and personality, few studies have examined the relationship between hopelessness and putatively normal personality traits. For instance, Dyck (1991) found a positive and significant correlation between hopelessness and Neuroticism and a negative correlation between hopelessness and Extraversion in non-clinical and clinical samples. Similarly, hopelessness was positively predicted by Neuroticism and negatively predicted by Extraversion and Conscientiousness in a study with university students by Velting (1999a).

Personality features have also been reported as correlates of suicidal behaviour. Some studies investigating the relationship between suicide ideation and personality dimensions have reported that the Neuroticism factor is positively related to suicidal thoughts in non-clinical samples (Lester, 1987; Mehryar, Hekmat, & Khajavi, 1977). A recent study

conducted with undergraduate students reported that high scores on the Neuroticism factor scale of the NEO-PI-R is related to a greater incidence of suicidal ideation in young adults (Velting, 1999a). The results further underline the well-established association between Neuroticism and negative affectivity (Costa & McCrae, 1980; Larsen & Ketelaar, 1991; Watson, Clark & Tellegen, 1988). Another study investigating the relation between hopelessness and personality traits found that the construct of hopelessness is positively predicted by Neuroticism and negatively predicted by Extraversion and Conscientiousness (Velting, 1999b).

The idea of investigating the relationship between personality traits and suicide ideation in the present thesis is due not only to the thought that traits influence the individual's perception and appraisal of the environment (McCrae & Costa, 1995), but also to the need to further examine the role of personality in the predisposition to suicidal behaviour. The identification of personality traits which show some association with suicidal behaviour may contribute to the preventive efforts through the specification of high risk groups before the development of an acute suicidal crisis. Furthermore, the detection of specific components of the five personality factors that are associated with the development of suicide-related constructs may provide some insight into the etiology of suicidal behaviour. Such information can also assist the development of therapeutic strategies designed to treat suicidal individuals. As asserted by Matthews, Saklofske, Costa, Deary and Zeidner (1998, p.37), the "assessment of personality traits not only provides rich and systematized information about the patient, but also yields process-related information important for a better understanding of prognosis and therapy".

1.8 Protective factors

As mentioned earlier, protective factors are those factors that ameliorate the individual's response to stressful situations, mitigating the development of distress such as depression,

hopelessness, and suicide ideation. Contrary to the vast amount of research investigating

suicide risk factors, less attention has been paid to the investigation of protective factors. In

the last decades though, suicide researchers have engaged in a trend toward the identification

of specific factors that may have a protective function against suicide. The development of the

Reasons for Living Inventory (Linehan, Goodstein, Nielsen, & Chiles, 1983), a measure of

beliefs that may contribute to the inhibition of suicidal behaviour, is a good example of this

new tendency. This instrument was developed based on the idea that suicidal individuals lack

certain coping abilities that impede them to survive in the face of adverse life situations.

Accordingly, empirical evidence has demonstrated that in fact the content of the belief system

of suicidal and non-suicidal individuals is marked by some crucial differences (Gutierrez et

al., 2002).

Life satisfaction, one of the components of subjective well-being, refers to a cognitive

judgmental process in which individuals judge their life situation according to their own

criteria (Diener, Emmons, Larsen, & Griffin, 1985). High levels of life satisfaction have been

associated with positive indicators of health (Koivumaa-Honkanen et al., 1996), while

decreased life satisfaction has been found to be associated with depression, poor health

behaviour, and poor social support (Koivumaa-Honkanen, Honkanen, Antikainen et al.,

2001). Moreover, level of life satisfaction seems to be associated with risk of suicide as

demonstrated by some longitudinal studies conducted with general populations (Koivumaa-

Honkanen, Honkanen, Koskenvuo, & Kaprio, 2003; Koivumaa-Honkanen et al., 2000;

Koivumaa-Honkanen, Honkanen, Viinamäki et al., 2001).

Self-esteem is one component of the self-concept and can be defined as a positive or a

negative orientation toward oneself (Rosenberg, 1965). High levels of self-esteem have been

reported as having an inverse relationship with suicidal behaviour in several studies (De Man,

& Leduc, 1995; De Man, Leduc, & Labreche-Gauthier, 1992; Lewinsohn, Rodhe, & Seeley,

1994). Perhaps even more important is the finding that a stable self-esteem seems to be a

protective factor against suicidal ideation according to a recent study by De Man and

Gutierrez (2002).

Some researchers have proposed that high levels of perceived social support can prevent

an individual from experiencing psychological distress after experiencing stressful life events

(Cohen & Wills, 1985). Accordingly, *social support* has been reported to have an association

with suicidal behaviour (Heikkinen, Aro, & Lonnqvist, 1993; Heikkinen, Aro, & Lonnqvist,

1994; Lewinsohn et al., 1994). *Perceived support* refers to an individual's positive or negative

perception that his or her social environment could provide supportive behaviours in times of

need (Wethington & Kessler, 1986). Thus perceived social support can be defined as the

perceived availability of support, perceived emotional support, or having at least one person

in whom to confide (Jackson, 1992). Similarly, *perception of family cohesion*, which can be

defined as the emotional connectedness, the degree of commitment, help, and support family

members provide for one another (Harris & Molock, 2000), has also been found to have an

association with suicidal behaviour (Harris & Molock, 2000; Hirsch & Ellis, 1995; Miller,

King, Shain, & Naylor, 1992).

Active engagement in *physical activities* has also been under investigation. A

considerable amount of research has suggested a positive association between physical

activity and psychological health and well being (Biddle, Fox, & Boutcher, 2000; Biddle, &

Mutrie, 2001; Morgan, 1997). Exercise has been reported to reduce negative mood states such

as anxiety and depression in both clinical (Craft & Landers, 1998) and non-clinical

populations (Byrne & Byrne, 1993). Only a few studies though have examined the

relationship between suicide and physical activity. In addition, the results do not seem to be

consistent across the studies. Some have reported significant lower frequencies of suicide

attempts and suicidal thoughts related to higher frequencies of physical activity (Brown &

Blanton, 2002; Oler et al., 1994; Tomori & Zalar, 2000), while others have not (Choquet,

Kovess, & Poutignat, 1993).

Although less extensively investigated, protective factors against the development of hopelessness have also been reported. For instance, parental expectations, attention and support from family have been mentioned among the factors that seem to function as protective (Pharris, Resnick, & Blum, 1997). High scores on the Reasons for Living Inventory were associated with lower levels of hopelessness in a sample of inpatients with major depression as reported by Malone et al. (2000).

2. Objectives and outline of the thesis

Despite the significant advances of suicide risk research there seems to be a consensus on the need for further enlightenment on the knowledge of risk factors (Krug et al., 2002; Heeringen, 2001) particularly considering that suicide risk assessment is a difficult task and relies greatly on the knowledge of risk factors. Also important is the fact that relatively little attention has been paid to the identification of protective factors which can contribute to the mitigation of suicidal ideas and suicide-related thoughts.

The finding that 90% of the completed suicides occur in the context of a psychiatric disorder and that current research findings reveal controversies regarding some particular disorders such as anxiety disorders and the lack of investigation of some personality disorders, highlight the need for clarification of which specific psychiatric disorders are associated with an increased risk of suicide. Also important is the additional examination of the role of a comorbid disorder in the development and aggravation of the risk of suicide. Similarly, little attention has been paid to the role of cognitive factors such as negative automatic thoughts and depressogenic attitudes in the development/mitigation of suicide risk. Given that cognitive therapy emphasizes the modification of dysfunctional beliefs and automatic thoughts in order to alleviate symptomatology and ameliorate maladaptive states, it seems of value to investigate the role of cognition in the development and mitigation of

suicide risk. Equally, the function of personality in the development and mitigation of suicide risk is relevant not only because personality traits represent stable patterns of feelings, thoughts, and behaviours, but also because such knowledge can contribute to suicide risk assessment. Finally, the role of factors such as life satisfaction, social support, family cohesion, and self-esteem deserves further scrutiny as potential protective factors in the development of suicide and suicide-related thoughts due to the fact that such information can contribute to the development and/or improvement of therapeutic interventions. Some of the psychological buffers investigated in the present study are cognitive indicators of positive feelings or of a positive way of thinking. Thus, lower levels of this pattern of thinking can be identified and eventually modified through cognitive-behavioural therapies. In addition, the promotion of social support and family cohesion can be encouraged by certain treatment approaches.

The major relevance of studying suicide ideation lies with the fact that suicide ideation is the entry point into the suicidal process. The fact that suicide phenomenon might be better understood as a process beginning with suicidal thoughts which may evolve to a more serious level of suicidal behaviour underlines the relevance of the identification of factors which may be involved in the development of suicidal ideas. Thus, the knowledge of which specific factors are involved in the development of suicide ideation may contribute to preventive efforts through the early recognition of those individuals who may become susceptible to suicide via suicide ideation. Similarly, the identification of some specific risk/protective factors can contribute to the development and improvement of psychotherapeutic interventions which may reduce the risk of a potential suicide. These facts underscore the importance of research focusing on the development of suicide ideation. Comparably, the investigation of factors involved in the mitigation of suicide ideation can contribute to the development or improvement of therapeutic interventions designed to treat suicidal individuals.

Two main objectives were pursued in the present thesis. The first was to specify which Axis I disorders and Axis II personality disorders are associated with increased risk of suicide via suicide ideation and suicide attempts. The second was to identify risk and protective factors involved in the development and mitigation of suicide ideation. The thesis is thus divided into two main parts. The first comprises of Papers I, II, and III and was intended to investigate which specific Axis I disorders and Axis II personality disorders are associated with an increased risk for suicidal behaviour. The second comprises of Papers IV, V, and VI which was intended to identify cognitive and personality factors which are involved in the development and mitigation of suicide ideation.

More specifically, the purpose of the first Paper was to examine to what extent specific anxiety and depressive disorders are associated with increased risk of suicide ideation and hopelessness. The study also aimed to assess to what extent higher levels of anxiety symptoms in patients with specific mood disorders and higher levels of depressive symptoms in patients with specific anxiety disorders, were associated with increased risk of developing suicide ideation and hopelessness.

The purpose of the second and third Papers were to investigate to what extent somatization disorder (Paper II) and Axis II personality disorders (Paper III) are associated with increased risk for suicide attempts. In these the role of a comorbid disorder in the prediction of suicide attempts was also investigated.

Papers IV and V investigated cognitive and personality factors associated with the development of depressive symptoms (Paper V), hopelessness (Paper V), and suicide ideation (Papers IV and V). Paper IV also investigated the role of engagement in sport as a potential protective factor in the development of suicide ideation.

Finally, Paper VI investigated psychological buffers which may be involved in the mitigation of hopelessness and suicide ideation.

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3. Method

This thesis is composed of two clinical and three non-clinical samples. The clinical

samples consisted of one Brazilian and one Norwegian sample of psychiatric outpatients and

the non-clinical samples consisted of Norwegian young male military recruits and two

independent samples of Norwegian university students. A detailed description of the samples

is provided below.

3.1 Samples

3.1.1 Clinical samples

C*linical sample 1* consisted of 606 outpatients consecutively recruited from several

psychiatric settings (91.4% from general hospitals, 6.3% from a private clinical practice

office, 1.5% from an outpatient clinic, and 0.8% from a psychiatric hospital) in Porto Alegre,

Brazil. The data collection started in 1993 and ended in 1997 as part of the project of adapting

the Beck scales (BDI, BAI, HS, and SSI) to the Brazilian population and Brazilian language

(Portuguese). The patients had the following principal diagnoses: 186 (30.7%) patients with

major depressive episode, 64 (10.6%) patients with dysthymia, 51 (8.4%) patients with

bipolar disorder, 88 (14.5%) patients with panic disorder, 47 (7.8%) patients with obsessive-

compulsive disorder, 26 (4.3%) patients with specific phobia, 54 (8.9%) patients with social

phobia, 43 (7.1%) patients with generalized anxiety disorder, 32 (5.3%) patients with panic

disorder with agoraphobia, and 15 (2.5%) patients with agoraphobia. The total sample

consisted of 439 (72.4%) women and 167 (27.6%) men. The average age was 39 (SD= 12.6),

varying from age 16 to 76. One hundred and ninety nine (32.8%) of the patients were single,

287 (47.4%) were married, 91 (15%) were separated, 26 (4.3%) were widowed, and 3 (0.5%)

omitted the information. In the statistical analyses the variable marital status was aggregated

into two groups, that is, single (199 single, 91 separated, and 26 widowed) and married people. The groups were thus composed of 316 (52.1%) single and 287 (47.4%) married people. Two hundred and fifty seven (42.4%) patients were people from the community admitted to their first consultation with a psychiatrist for assessment and treatment and 344 (56.8%) patients had been in treatment before. Five (0.8%) patients omitted the information. Patients were excluded if they exhibited psychotic or catatonic features, were in partial or full remission, or had a postpartum onset.

Clinical sample 2 consisted of 142 patients (42 males and 100 females) consecutively admitted to a general psychiatric outpatient clinic at the University Hospital of Østmarka in Trondheim, Norway, during the years 1989-1994. The sample consisted of 87 (62%) patients meeting the diagnostic criteria for a personality disorder and 53 (38%) patients not meeting the criteria for a personality disorder, but fulfilling the criteria for an Axis I disorder. Sixty nine percent of the total patient sample met criteria for a lifetime depressive disorder (major depressive disorder = 40.5%, dysthymia = 17.5%, cyclothymia = 4%). The frequency of occurrence of other Axis I diagnoses were generalized anxiety disorder (53%), social phobia (17%), simple phobia (12%), obsessive-compulsive disorder (9%), panic disorder (9%), agoraphobia (9%), posttraumatic stress disorder (3.5%), somatization disorder (18%), and substance (alcohol or drug) abuse (7%). Cluster C diagnoses were subdivided into avoidant, dependent and obsessive-compulsive personality diagnoses, but not into a passive-aggressive diagnosis because only one patient met its diagnostic criteria. Cluster A and cluster B were not subdivided into groups of specific personality disorders due to low prevalence. The number of patients diagnosed with any cluster A was 14 (10%), any cluster B was 13 (9%), and any cluster C was 75 (54%). The prevalence of the specific cluster C diagnostic categories used in the present sample was as follows: avoidant (n = 50), dependent (n = 20), and obsessive-compulsive (n = 28). Due to comorbidity, each patient could be assigned more

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than one personality disorder diagnosis. Table 1 in Paper III provides an overview of the comorbidity prevalence between the specific cluster C personality disorders and the specific clusters A and B personality disorders. The mean age of the total sample was 40.3 (SD = 11.1, age range 21-73). Patients with a lifetime history of psychotic disorder and/or alcohol or drug addiction were not included.

3.1.2 Non-clinical samples

N*on-clinical sample 1* comprised 102 male military recruits serving their compulsory national military service in The Norwegian Army between December 1985 and December 1986. They completed their three months military training at an Army school in Middle Norway (Steinkjer), and were sent to different parts of Northern Norway for nine months of national military service. Their mean age was 19.48 years (SD = 0.72), ranging from 18 to 23. Ninety nine (97%) were single, only three were married. Seventy four (72.5%) were practical workers, 17 (16.7%) students and 10 (9.8 %) were unemployed prior to admission to the army. This group was re-tested three months later, after they were sent to Northern Norway.

N*on-clinical sample 2* comprised 219 university students enrolled in one of the introductory psychology or economics courses at the Norwegian University of Science and Technology (NTNU), in Trondheim, Norway in 2002. The sample consisted of 47 (21.5%) males and 171 (78.1%) females. The ages ranged from 18 to 43 (M = 21.46, SD = 3.63). Of the total sample, 159 (72.6%) were single and 57 (26.3%) were in a cohabiting relationship. Data on the demographic characteristics is missing for four students. The participants voluntarily and individually completed a battery of questionnaires in a single session lasting about 2 hours.

N*on-clinical sample 3* comprised 314 university students enrolled in one of the introductory psychology or sociology courses at the Norwegian University of Science and Technology (NTNU), in Trondheim, Norway in 2004. The sample consisted of 71 (23%) males and 243 (77%) females. The ages ranged from 17 to 44 (M = 22.29, SD = 3.22). Of the total sample, 157 (50%) were single, 113 (36%) had a boyfriend/girlfriend, 42 (13.4%) were in a cohabiting relationship, and 2 (0.6%) were separated. The participants voluntarily and individually completed a battery of self-report questionnaires at home that was estimated to take about 2 hours to be filled out.

3.2 Assessment instruments

3.2.1 Assessment of psychiatric disorders

3.2.1.1 Assessment of Axis I and inter-rater reliability

Most of the patients of clinical sample 1 were initially diagnosed according to the Structured Clinical Interview for DSM-IV (SCID-CV) (First, Spitzer, Gibbon, & Williams, 1997). However, some patients were diagnosed according to the Structured Clinical Interview for DSM-III-R (SCID-I) (Spitzer & Williams, 1984; Spitzer, Williams, Gibbon, & First, 1992) due to the long period of data collection. The clinical interviews were performed by a psychiatric resident under the supervision of a psychiatrist responsible for the department.

The Axis I diagnoses of clinical sample 2 were obtained using the Structured Clinical Interview for DSM-III-R (SCID-I) (Spitzer & Williams, 1984; Spitzer et al., 1992). To evaluate the inter-rater reliability of Axis I diagnoses, 38 interviews were audio- or videotaped and independently rated by another clinical psychologist. Kappa for lifetime history of depressive disorder was 0.78. The inter-rater reliability coefficients (Kappa) for the specific Axis I disorders ranged from 0.83 to 1.0. After the initial assessment interview, the

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patients were administered a standard assessment battery of self-report measures. The SCID-I interviews were conducted by Dr. Tore C. Stiles at the Institute of Psychiatry and Behavioural Medicine, NTNU.

3.2.2.2 Assessment of Axis II and inter-rater reliability

The Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II) (Spitzer, Williams, & Gibbon, 1987) was used to assess Axis II disorders of clinical sample 2. To evaluate the inter-rater reliability of the SCID-II diagnoses, 40 interviews were audio or videotaped and independently rated by another clinical psychologist. Kappas for avoidant, dependent, obsessive-compulsive, cluster A, cluster B, and presence or absence of any personality disorder were 0.95, 0.94, 0.93, 0.94, 0.89 and 0.88, respectively. The inter-rater reliability coefficients (Kappa) for the other specific Axis II personality disorders ranged from 0.76 to 0.98. The SCID-II interviews were conducted by Dr. Tore C. Stiles.

3.2.2 Suicide risk assessment

Suicide risk was assessed differently in the Papers. Accordingly, in Paper I and Paper VI, a Brazilian (Cunha, 2001) and a Norwegian (Chioqueta & Stiles, in press) version of the self-report Scale for Suicide Ideation (SSI; Beck, Kovacs et al., 1979; Beck, Steer, & Ranieri, 1988) was used to assess suicide risk, respectively. The assessment of suicide risk in Papers II and III was obtained by a semistructured interview which provided information about lifetime number of attempts. In Papers IV and V, suicide risk was assessed using item 9 of the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaug, 1961) and item 14 of the HSCL-25 (Derogatis, Lipman, & Covi, 1973), respectively. Suicide risk was also assessed by the Beck Hopelessness Scale (HS; Beck et al., 1974) in the Papers I, IV, V, and VI.

The Beck Scale for Suicide Ideation (SSI; Beck, Steer, & Ranieri, 1988) is a 19-item rating scale used by clinicians to evaluate the intensity of a patient's specific attitudes, behaviour, and plans to commit suicide. This scale was used to assess suicide ideation in Papers I and VI. Each item is rated on a three-point scale that ranges from 0 to 2. The ratings are summed to yield a total score, which may range from 0 to 38. Adequate psychometric properties have been reported for this scale in American studies (Beck & Steer, 1991; Beck, Steer, & Ranieri, 1988), Brazilian studies (Cunha, 2001), and Norwegian study (Chioqueta & Stiles, in press).

Suicide ideation was also assessed from item 9 (suicide ideation) of the Beck Depression Inventory (BDI; Beck et al., 1961) in Paper IV. The following sentences comprise the item assessing suicide ideation: 0 = I do not have any thoughts of killing myself, 1 = I have thoughts of killing myself, but I would not carry them out, 2 = I would like to kill myself, and 3 = I would kill myself if I had the chance. The answer to one of the questions was estimated to indicate the severity of suicide ideation exhibited by the respondents.

Suicide ideation was also operationalized according to the answer given by the respondent to item 14 (suicidal thoughts) of the HSCL-25 (Derogatis, Lipman, Rickels, Uhlenhuth, Covi, 1974) in Paper V. The item which contains the statement "Have thoughts about committing suicide" is assessed on a 4-point scale ranging from 1 (not at all) to 4 (extremely). The answer to the question was estimated to indicate the severity of suicide ideation exhibited by the respondents. Satisfactory reliability and validity have been reported for the suicide ideation item of the HSCL-25 (Hesbacher, Rickels, Morris, Newman, & Rosenfeld, 1980).

Similar procedures for assessing suicide ideation from a single item have been reported in previous studies (Bhui et al., 2003; Dieserud, Røysamb, Ekeberg, & Kraft, 2001; Hintikka et al., 2001; Tanskanen et al., 2001). Despite the fact that the assessment of suicide ideation from a single item seems to be a relatively common practice, it is said not to be the most reliable and valid procedure. However, in a study investigating the psychometric properties of a Norwegian version of the Beck Scale for Suicide Ideation, we found that item 9 of the BDI and item 14 of the HSCL-25 had a high correlation with the BSI ($r = .68$, $p < .001$ and $r = .67$, $p < .001$, respectively). Very similar correlations were found between the BSI and the BHS ($r = .49$, $p < .01$), the BDI-item 9 and the BHS ($r = .45$, $p < .01$), and the HSCL-25 item 14 and the BHS ($r = .39$, $p < .01$). Also very close correlations were found between the BSI and the HSCL-25 depressive scale ($r = .48$, $p < .001$), the BDI-item 9 and the HSCL-25 depressive scale ($r = .46$, $p < .01$), and the HSCL-25 item 14 and the HSCL-25 depressive scale ($r = .47$, $p < .01$) (Chioqueta & Stiles, in press). These estimates suggest that they very similarly measure the same construct.

The presence or absence of suicide attempts was obtained by a carefully administered semistructured interview conducted by Prof. Tore C. Stiles, which provided specific information about lifetime number of attempts and a precise and detailed description of each attempt. This interview was used to assess suicide attempts in Papers II and III.

The Beck Hopelessness Scale (HS; Beck et al., 1974) was used to assess severity of hopelessness in Paper I, IV, V, and VI. The HS is a 20 item self-rating scale consisting of statements that assesses thoughts or feelings about the future which the subject rates true or false. Eleven items are keyed true and nine false with a total score of 20 for maximum hopelessness. This test is a more unidimensional test of hopelessness toward the future. Satisfactory psychometric properties have been reported for this scale for American (Beck &

Steer, 1988; Steed, 2001) and Norwegian non-clinical and clinical samples (Chioqueta &

Stiles, 2004a).

3.2.3 Assessment of psychiatric symptoms

The Beck Depression Inventory (BDI; Beck et al., 1961) was used to assess depression

severity in Papers I and IV. The BDI is a 21-item self-report inventory that measures a variety

of depressive symptoms. The scores can range from 0 to 63, where the greater the score the

greater the severity of syndrome depression. It is used extensively and has been shown to be a

reliable and valid measure of depression severity in both clinical and nonclinical populations

(Beck, Steer, & Garbin, 1988). Studies with Brazilian samples suggested adequate

psychometric properties for the BDI (Cunha, 2001).

Depressive symptoms were also assessed by the depressive scale of the Hopkins

Symptom Check List (HSCL-25) in Papers V and VI . The HSCL-25 is a shortened version of

the original 90-item HSCL (Derogatis et al., 1973) which measures severity of anxiety and

depressive symptoms. Individuals record their own estimates of symptom severity, present

during the past week, on a 4-point scale ranging from 1 (not at all) to 4 (extremely).

Responses are summed and divided by the number of answered items to generate an anxiety

score, a depression score, and a total score ranging from 1 to 4. The adequacy of the HSCL-25

for screening purposes has been reported in several studies (Eberhard-Gran, Eskild, Tambs,

Schei, & Opjordsmoen, 2001; Hesbacher et al., 1980; Sandanger et al., 1998; Veijola et al.,

2003). The HSCL-25 score was calculated as the sum score of items divided by the number of

items answered.

The Beck Anxiety Inventory (BAI; Beck & Steer, 1993) was used to measure level of anxiety in Paper I. The BAI is a 21-item self-report instrument employed to rate the severity of anxiety. Each symptom is rated on a 4-point scale ranging from 0 to 3, and the total scores can range from 0 to 63. Appropriate psychometric properties were reported for the original version of the inventory (Beck, Epstein, Brown, & Steer, 1988) and the Brazilian version of the BAI (Cunha, 2001).

3.2.4 Assessment of cognitive factors

The Automatic Thoughts Questionnaire (ATQ-30; Hollon & Kendall, 1980) was used to assess frequency of automatic thoughts in Paper IV. More specifically, the ATQ-30 is a self-report instrument designed to identify and measure the frequency of automatic thoughts associated with depression. Subjects are asked to rate each item on a 5-point scale indicating frequency of rumination (1 = not at all, 5 = all the time). Total scores are obtained by summing across the 30 items. The scores can range from 30 to 150, a high score indicates frequent occurrence of negative automatic thoughts. It has been shown to measure depression-related cognitions in both college (Hollon & Kendall, 1980; Dobson & Breiter, 1983) and clinical populations (Hollon, Kendall, & Lumry, 1986). It has been reported to successfully discriminate between depressed outpatients from nondepressed psychiatric controls and normal controls (Harrel & Ryon, 1983). Satisfactory psychometric properties were identified for the Norwegian version of the ATQ-30 (Chioqueta & Stiles, 2004b).

The Dysfunctional Attitude Scale (Form A) (DAS-A; Weissman & Beck, 1978) was used to assess dysfunctional beliefs in Paper IV. The scale is a 40-item self-report questionnaire that measures a subject's agreement with statements of dysfunctional beliefs about perfectionistic performance standards and rigid ideas about the world, and concerns

about the judgements of others. Subjects rate their degree of beliefs on a 7-point scale ranging

from 1 (not at all) to 7 (totally). Total scores are obtained by summing across the 40 items.

The scores can range from 40 to 280, with higher scores indicating a greater propensity for

beliefs held by depressed individuals. The DAS-A has been shown to exhibit satisfactory

internal consistency and test-retest reliability (Weissman & Beck, 1978). Depressed inpatients

have been found to have higher scores on the instrument compared to nondepressed

psychiatric controls and nondepressed normal controls (Hamilton & Abramson, 1983).

Studies with Norwegian samples demonstrated adequate reliability and validity properties for

the DAS-A (Chioqueta & Stiles, 2004c).

3.2.5 Assessment of personality traits

The revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992a) is a 240-

item questionnaire designed to operationalize a five-factor model of personality. The NEO-PI-

R was used in Paper V. The Neuroticism (N), Extraversion (E), Openness (O), Agreeableness

(A), and Conscientiousness (C) factors are comprised of six subscales or facets which

measure more specific traits. Responses are made on a 5-point scale from strongly disagree to

strongly agree. The NEO-PI-R domain and facet scales have adequate internal consistency

(Costa, McCrae, & Dye, 1991), good test-retest reliability (McCrae & Costa, 1983), and

adequate convergent and discriminant validity (Costa & McCrae, 1992a). Satisfactory

psychometric properties have been reported for the Norwegian version of the revised NEO

Personality Inventory (Sickel & Nordvik, 2002).

3.2.6 Assessment of psychological buffers

Engagement in sport was assessed using a 9-item questionnaire in which two of the

questions investigated engagement in sport. This questionnaire was used in Paper IV. The

first question asked whether or not the subject had actively been engaged in some form of sport prior to the admission to the army. If they had, they were asked to specify what type (s) of sport. The second question asked whether or not the subjects were engaged in some form of sport at the Army school beyond the compulsory physical training. If they were, they were asked to specify what type (s).

Self-reported life satisfaction was assessed by the Satisfaction With Life Scale (SWLS; Diener et al., 1985), which is a 5-item self-rating scale developed as a cognitive measure of life satisfaction. It was used in Paper VI. Individuals were asked to rate on a 7-point Likert scale their level of satisfaction with life. The scale contains statements such as "I am satisfied with my life", "In most ways my life is close to my ideal", and "If I could live my life again, I would almost not change anything". The range of total possible scores is 5-35, with higher scores indicating greater satisfaction with life. Satisfactory psychometric properties have been reported for this scale (Pavot & Diener, 1993).

Self-esteem was assessed by Rosenberg's (1965) Self-Esteem Scale, a well-validated measure of global self-regard (Demo, 1985), in Paper VI. The scale consists of 10 items rated on 4-point scales ranging from strongly agree to strongly disagree. Scores may vary from 10 (lowest self-esteem) to 40 (highest self-esteem). Satisfactory psychometric properties have been reported for this scale (Demo, 1985; Hagborg, 1993).

Perception of family cohesion was assessed from the Family Coherence sub-scale of the Resilience Scale for Adults (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003; Hjemdal, Friborg, Martinussen, & Rosenvinge, 2001), which measures the presence of family conflicts, cooperation, support, loyalty, and stability. It was used in Paper VI. The Family Coherence sub-scale consists of 7-items such as "I enjoy being with my family", "there are few conflicts

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in my family", and "there are strong bonds in my family", which are rated on a seven-point scale. Satisfactory psychometric properties have been reported for the Family Coherence sub-scale (Friborg et al., 2003; Hjemdal et al., 2001).

Perception of social support was assessed from the Social Support sub-scale of the Resilience Scale for Adults (Friborg et al., 2003; Hjemdal et al., 2001) that measures access to external support from friends and relatives. It was used in Paper VI. The Social Support sub-scale consists of 8-items such as "I have some close friends/family members who really care about me" and "I always have someone who can help me when needed", which are measured on a seven-point scale. Satisfactory reliability and validity have been reported for this sub-scale (Friborg et al., 2003; Hjemdal et al., 2001).

3.3. Ethical considerations

All the projects in which each of the samples pertained were submitted and approved by the local or regional Ethical Committees. For instance, all the Norwegian projects referents to the Norwegian samples were approved by the Regional Committee for Ethics in Medical Research. The same procedure applies to the Brazilian sample (clinical sample 1).

4. Overview of the studies and main conclusions

4.1 Paper I: Suicide risk in outpatients with specific mood and anxiety disorders

The aim of this study was to examine the relationships between specific anxiety and mood disorders and levels of hopelessness and suicide ideation. A sample consisting of 606 outpatients recruited from several psychiatric settings was used to conduct the study. By controlling for the potential confounding effects of age, sex, marital status, level of anxiety and depression symptoms, the results indicated that only dysthymia was significantly associated with hopelessness. Patients presenting a major depressive episode with higher anxiety symptoms had significantly increased scores on the hopelessness scale. Major depressive episode and bipolar disorder, but not dysthymia, were significantly associated with higher levels of suicide ideation. Increased levels of anxiety symptoms in patients with dysthymia were associated with increased levels of suicide ideation, while increased depressive symptoms in patients with specific phobia and generalized anxiety disorder were associated with significantly lower levels of suicide ideation. The findings suggest that depressive disorders, but not anxiety disorders constitute risk for suicide.

4.2 Paper II: Suicide risk in patients with somatization disorder

The aim of the study was to assess suicide risk in a total sample of 120 psychiatric outpatients with and without somatization disorder. Twenty-nine of the patients met diagnostic criteria for somatization disorder. The results indicated that somatization disorder was significantly associated with suicide attempts even when the effects of both a comorbid major depressive disorder and a comorbid personality disorder were statistically controlled for. The results suggest that although a patient meets the criteria for a principal diagnosis of major depressive disorder and/or a personality disorder, it is still of significant importance to decide whether or not the patient also meets the criteria for a somatization disorder in order to

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assess suicide risk more optimally. The findings highlight the fact that the potential for suicide in patients with somatization disorder should not be overlooked when a diagnosable depressive disorder or a personality disorder is not present.

4.3 Paper III: Assessing suicide risk in cluster C personality disorders

The aim of this study was to assess suicide risk in psychiatric outpatients with specific cluster C personality disorders. A sample composed of 87 outpatients meeting diagnostic criteria for a personality disorder and 53 psychiatric outpatients meeting criteria for an Axis I disorder only was used to accomplish the study. The results showed that dependent, but not avoidant or obsessive-compulsive, personality disorder, as well as the clusters A and B personality disorders, were significantly associated with suicide attempts. This association remained significant after controlling for both a lifetime depressive disorder and severity of depression for the cluster A and the cluster B personality disorders, but not for dependent personality disorder. The results underline the importance of assessing suicide risk in patients with cluster A and cluster B personality disorders, while the assessment of suicide risk in patients with cluster C personality disorders seems to be relevant when a comorbid depressive disorder is present.

4.4 Paper IV: Cognitive factors, engagement in sport, and suicide ideation

This study is a prospective study in which a sample of 102 male military recruits were initially assessed at the Army School (Pretest) and re-tested three months later (Posttest). The aim of this study was two-fold. Initially, it was aimed to identify cognitive vulnerabilities to suicide ideation, and then to examine the protective role of active engagement in sport in the development of suicide ideation. The results of a hierarchical logistic regression analysis revealed that scores on the Automatic Thoughts Questionnaire (ATQ-30), but not on the Dysfunctional Attitude Scale (DAS-A), predicted presence of suicide ideation three months

later. Military recruits that were actively engaged in sport activities at the Army School exhibited reduced risk of suicide ideation at posttest.

4.5 Paper V: Personality traits and the development of depression, hopelessness, and suicide ideation

This study investigated the relationship between depression, hopelessness, suicide ideation, and personality traits. The participants were university students (N = 219) who completed, among other instruments, the NEO Personality Inventory Revised (NEO-PI-R), the Beck Hopelessness Scale (BHS), and the Hopkin's Symptom Checklist-25. The results of the factor-level multiple regression analyses revealed that depressive symptoms were positively predicted by Neuroticism and Openness, and negatively predicted by Extraversion. Hopelessness was positively predicted by Neuroticism and negatively predicted by Extraversion. Finally, suicide ideation was positively predicted by Neuroticism. More detailed results were obtained from facet-level multiple regression analyses. Accordingly, depressive symptoms were positively predicted by the Neuroticism facets, *angry hostility* and *depression*, and negatively predicted by the Extraversion facet, *positive emotions*, and by the Openness facet, *actions*. Hopelessness was positively predicted by the Neuroticism facet, *depression*, and negatively predicted by the Extraversion facets, *assertiveness and positive emotions*. Among the Neuroticism facets, *depression* positively predicted suicide ideation, while *self-consciousness* negatively predicted suicide ideation.

4.6 Paper VI: The relationship between psychological buffers, hopelessness, and suicide ideation: Identification of protective factors

In this study we examined the role of psychological buffers (life satisfaction, self-esteem, perception of family cohesion, and perception of social support) in the development

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of hopelessness and suicide ideation. The participants were 314 university students, 71 males and 243 females, who were asked to complete a battery of instruments measuring the psychological buffers mentioned above. The results of an initial set of hierarchical multiple regression analyses revealed that not all the psychological buffers were significantly associated with lower levels of hopelessness, while all the psychological buffers were associated with lower levels of suicide ideation when levels of depression were controlled for. Results obtained from additional analyses suggested that life satisfaction and self-esteem are independent predictors of lower levels of hopelessness, while perception of social support seems to be the major predictor of lower levels of suicide ideation independent of depression and hopelessness severity. Thus, hopelessness thoughts seem to be minimized by the level of life satisfaction and level of self-esteem exhibited by the individuals, while the key factor to the mitigation of suicidal ideas seems to be perception of social support.

5. Discussion

5.1 Suicide risk in Axis I clinical and Axis II personality disorders

Many previous studies have investigated risk of suicide in psychiatric disorders (Moscicki, 1999). However, most of them have focused on depressive disorders, while fewer examined the risk of suicide in anxiety disorders. The findings in this thesis indicate, primarily, that it is essentially the depressive disorders that are associated with increased suicide risk. This is evidenced by the fact that a diagnosis of major depressive episode and bipolar disorder were significantly associated with higher levels of suicide ideation, while dysthymia was significantly associated with increased levels of hopelessness. These findings stand in accordance with previous studies in which the prevalence of suicide ideation among patients with depressive disorders (major depression, bipolar disorder, and dysthymia) was found to range from 46% to 69% (Asnis, 1993, Bronisch & Wittchen, 1994, Hintikka et al., 1998). It also provides further support for the assertion that mood disorders are the most frequent psychiatric diagnoses associated with suicide ideation, suicide attempts, and/or eventual suicide (Brown et al., 2000; Sokero et al., 2003). Most of the studies on the prevalence of suicidal behaviour in mood disorders report major depression as the main diagnosis related to suicide (Isometsä, Heikkinen, et al., 1996; Sokero, et al., 2003; Spalletta, Troisi, Saracco, Ciani, & Pasini, 1996).

A major depressive episode was also significantly associated with increased levels of hopelessness when symptom severity was not statistically controlled for. This finding is consistent with Beck's formulation (Beck, 1963, 1967; Clark et al., 1989) which proposes that hopelessness is among the core features of depression. Also important and in line with the findings in the present study, is the fact that other investigators have found that major depressive disorder patients presenting current suicide ideation have significantly higher levels of depression and hopelessness compared to depressed patients without suicide ideation

(Sokero et al., 2003). These findings provide further evidence of the importance of the severity of symptoms, particularly depressive and hopelessness, in the development of suicide ideation.

The fact that none of the anxiety disorders were associated with increased levels of suicide risk and that specific phobia was associated with significantly lower levels of suicide ideation, merits scrutiny. Broadly, these findings differ from the outcomes of a recent meta-analysis study (Khan et al., 2002) in which it was found that the risk of suicide in panic disorder, social phobia, generalized anxiety disorder, and obsessive-compulsive disorder, measured by incidence of suicide and suicide attempts, was significantly higher than in the general population. It may be that the conflicting results are due to the fact that in the present investigation suicide risk was assessed via the presence of suicide ideation and levels of hopelessness, while in the above mentioned study, suicide risk was assessed by incidence of suicide and suicide attempts. The differences may also be due to the fact that in the above mentioned study the authors compared incidence of suicidal behaviour in psychiatric patients with a control group (general population) while in the present investigation no control group was used. However, also in line with our findings were the ones by Lepine and Lellouch (1995a) who did not find an association between social phobia and suicide ideation when the effect of a comorbid depressive disorder was controlled for, and the ones by Coryell (1981) who did not find a high risk of suicide in patients with obsessive-compulsive disorder. Furthermore, the fact that panic disorder, whether or not associated with agoraphobia, was not found to be associated with either hopelessness or suicide ideation is in accordance with a study by Overbeek et al. (1998) who did not find higher suicide risk for the panic disordered patients, even though they found higher levels of hopelessness compared to the control group, as well as similar to those by Beck et al. (1991) who failed to find increased suicidality in panic disordered patients when a comorbid depressive disorder was ruled out. It seems more likely that suicide risk in panic disorder is to some extent related to the existence of a

comorbid disorder, especially a depressive or personality disorder as suggested by some authors (Friedman et al., 1992; Lepine et al., 1993). Finally, similarly to Asnis et al. (1993) and Beck, Riskind et al. (1988) we did not find increased suicide risk associated with generalized anxiety disorder even when higher levels of depressive symptoms were present.

Symptom severity also seems to have an effect on the risk of suicide in some disorders. More specifically, symptoms of anxiety and depression, respectively, seem to play different roles in depressive disorders compared to anxiety disorders. This is evidenced by the fact that higher levels of anxiety in patients with major depressive episode were associated with significantly increased levels of hopelessness, while higher levels of anxiety in patients with dysthymia were significantly associated with increased levels of suicide ideation. On the other hand, patients with anxiety disorders who possessed higher levels of depressive symptoms exhibited lower levels of suicide risk. More specifically, patients with generalized anxiety disorder who possessed higher levels of depressive symptoms exhibited significantly lower levels of both hopelessness and suicide ideation, while patients with specific phobia who possessed higher levels of depressive symptoms exhibited significantly lower levels of suicide ideation. The results concerning anxiety disorders were in accordance with a study by Beck, Riskind et al. (1988) who reported a nonsignificant relationship between anxiety and hopelessness. These findings thus provide additional support for the suggestion that hopelessness is a specific attribute of depression (Beck, Riskind et al., 1988). These findings also seem to be in accordance with the supposition of Beck's cognitive model (Beck, 1976) that each disorder is characterized by a cognitive content specific to that disorder. This fact may explain why symptoms of anxiety and depression seem to have a different effect in depressive disorders and anxiety disorders regarding the emergence of hopelessness and suicide ideation.

Somatization disorder was significantly associated with suicide attempts even when the effects of a comorbid depressive disorder or personality disorder were statistically controlled

for, suggesting that this disorder may represent an independent risk factor for suicide. This finding is particularly relevant considering that this is the first study which empirically examined and demonstrated that a diagnosis of somatization disorder may represent an independent risk factor for suicide since previous reports have examined only prevalence rates of suicide attempts in patients with somatization disorder (DeSouza & Othmer, 1984; Morrison & Herbstein, 1988; Tomasson et al., 1991; Zoccolillo & Cloninger, 1986). Also relevant is the fact that the investigation of the role of a comorbid disorder in the development and augmentation of the risk of suicide attempts in patients with somatization disorder had not yet been provided. More generally, the findings suggest that a single diagnosis of somatization disorder seem to be associated with an increased risk of suicidal behaviour via suicide attempts.

Finally, among the personality disorders, dependent, but not avoidant or obsessive-compulsive, personality disorder was significantly associated with suicide attempts. However, this association was no longer significant when the effect of a comorbid lifetime depressive disorder was statistically controlled for. On the other hand, both cluster A and B personality disorders were significantly associated with suicide attempts even after controlling for the effects of both a lifetime depressive disorder and concurrent level of syndrome depression. These findings are of particular relevance considering that it has been reported that the risk of suicide among individuals with personality disorders often seems to be associated with a comorbid depressive disorder or substance abuse (Goldsmith, Fyer, & Frances, 1990). It is still possible though that a comorbid affective disorder in cluster A and B personality disorders further increases the likelihood of suicide and suicidal behaviour as asserted by Blumenthal and Kupfer (1986). In general, the findings, besides being in agreement with studies demonstrating that the number of comorbid diagnoses substantially aggravates the risk for suicidal behaviour (Beautrais et al., 1996; Lecrubier, 2001), also emphasize that some

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single diagnoses may be associated with an increased risk of suicidal behaviour independent of the existence of a comorbid condition.

The initial part of the present study has some important methodological limitations which must be acknowledged aside from the limitations already mentioned in each Paper. Initially, the assessment of comorbidity in the clinical sample 1 (Paper I) was not performed, making it impractical to investigate the role of comorbid conditions in the development of suicide ideation and hopelessness. This is a topic which has received little or no attention (Hintikka et al., 1998) contrary to the amount of studies demonstrating that psychiatric comorbidity is an important risk factor for attempted and completed suicide (Beautrais et al., 1996, Henriksson et al., 1993). A second potential limiting factor which is also related to clinical sample 1 (Paper I) is that suicide risk was assessed by measuring levels of suicide ideation and hopelessness, but did not measure actual suicidal behaviour. However, suicide ideation and hopelessness have consistently been found to be significant predictors of eventual suicide (Beck, Brown et al., 1990; Beck et al., 1985) and repetition of suicidal behaviour (Petrie et al., 1988).

In sum, despite the limitations, the findings provide useful information regarding suicide prevention since it has been found that current suicide ideation and hopelessness are significantly associated with long-term suicide risk (Beck, Brown et al., 1990; Beck et al., 1985; Brown et al., 2000) and widely reported that those who attempt suicide present substantial risk for a subsequent suicide (Harris & Barraclough, 1997). Moreover, these findings all together demonstrate that it seems vital for clinicians to differentiate between a depressive disorder and an anxiety disorder as the principal diagnosis when assessing suicide risk. In addition, the results suggest that it is of special value to assess levels of anxiety symptoms in patients with major depressive episode and dysthymia, while less emphasis is needed regarding the assessment of levels of depressive symptoms in patients with anxiety disorders. It is also important to assess whether the patient meets the diagnostic criteria for a

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somatization disorder even when the presence of a major depressive disorder and /or a personality disorder already have been diagnosed. Finally, it is also recommended to assess suicide risk in patients with both cluster A and cluster B personality disorders, while the assessment of suicide risk in patients with cluster C personality disorders seems of particular relevance when a comorbid depressive disorder is present.

5.2 Cognitive and personality vulnerabilities as risk/protective factors

Regarding the cognitive vulnerabilities it was found that only negative automatic thoughts, but not depressogenic beliefs, were predictive of long-term presence of suicide ideation. More specifically, it was found that higher frequencies of negative automatic thoughts predicted presence of suicide ideation at posttest, but higher frequencies of depressogenic beliefs did not. In addition, active engagement in sport seems to have some effect on the emergence of suicide ideation. This is evidenced by the fact that current active engagement in sport was associated with absence of suicide ideation at posttest, while it did not seem to matter whether or not the individuals had been actively engaged in sport earlier in life. These findings suggest that active engagement in physical activity seems to play a protective role in the development of negative automatic thoughts and suicidal thoughts.

The fact that only negative automatic thoughts emerged as a significant predictor of suicide ideation may be related to the fact that the ATQ-30 measures negative automatic thoughts which are associated with both depression and suicidal thoughts, while the DAS-A is sensitive to or measures a kind of dysfunctional beliefs which are associated with depression or depressive mood but not necessarily taps the cognitive content of the belief system of suicidal individuals. The finding that dysfunctional attitudes as measured by the DAS was not significantly associated with suicide ideation is in accordance with some previous reports by Beck, Steer and Brown (1993) and Ranieri et al. (1987) using samples of psychiatric outpatients in a cross-sectional design. The protective effect of physical activity in relation to

the development of suicide ideation is in line with studies reporting on the positive effects of physical exercise on psychological health and well-being (Biddle, Fox, & Boutcher, 2000; Biddle, & Mutrie, 2001). It is also in accordance with the findings from a study by Lash (2000) who reported an improvement of depressive cognitions (automatic thoughts and dysfunctional attitudes) after physical exercise in women presenting clinical symptoms of depression.

Among the five personality domains, Neuroticism was significantly associated with both hopelessness and suicide ideation. Neuroticism was also associated with depressive symptoms. Extraversion, on the other hand, was negatively associated with hopelessness and depression, revealing no significant relationship with suicide ideation. Interestingly, Openness was also positively associated with depression. At the facet-level, it was found that depressive symptoms were positively predicted by the Neuroticism facets, *angry hostility* and *depression*, and negatively predicted by the Extraversion facet, *positive emotions*, and by the Openness facet, *actions*. Hopelessness was positively predicted by the Neuroticism facet, *depression*, and negatively predicted by the Extraversion facets, *assertiveness and positive emotions*. Among the Neuroticism facets, *depression* positively predicted suicide ideation, while *self-consciousness* negatively predicted suicide ideation. In general, the findings suggest that Neuroticism represents a vulnerability factor, while Extraversion seems to function more as a protective factor against the development of depressive symptoms, hopelessness, and suicide ideation. More specifically, angry hostility, depression, and vulnerability are personality traits which seem to render an individual more vulnerable to the development of depressive symptoms, hopelessness, and eventually suicide ideation. On the contrary, personality traits such as positive emotions, actions, and self-consciousness seem to be involved in the mitigation of negative affectivity evidenced by depressive symptoms, hopelessness, and suicidal thoughts.

The findings, in general, further underline the well-established association between Neuroticism and negative affectivity (Costa & McCrae, 1980; Watson et al. 1988). It also supports the view that Extraversion represents an independent dimension of positive affectivity (Watson et al., 1988; Watson & Tellegen, 1985) and the conceptualization of Extraversion as a tendency to experience positive affect (Costa & McCrae, 1980; Watson et al., 1988; Furnham & Brewin, 1990).

Finally, life satisfaction, self-esteem, perception of family cohesion, and perception of social support were significantly associated with lower levels of both hopelessness and suicide ideation. All the psychological buffers remained statistically significant associated with lower levels of suicide ideation when levels of depression were controlled for, but only some remained significantly associated with lower levels of hopelessness when levels of depression were controlled for. More specifically, perception of family cohesion did not seem to have an association with lower levels of hopelessness independent of depressive symptoms. Additional analyses suggested that satisfaction with life and self-esteem are independent predictors of lower levels of hopelessness, while perception of social support seems to be the major predictor of lower levels of suicidal ideas independent of both depression and hopelessness severity. The findings all together suggest a strong relationship between positive affect and the mitigation of suicidal ideas and feelings of hopelessness.

Some similarities can be found between the present findings and results from other studies regarding the development/mitigation of suicide ideation. Self-esteem, perception of social support and family cohesion, and satisfaction with life have been mentioned earlier as being negatively associated with suicide ideation (Anteghini, Fonseca, Ireland, & Blum, 2001; De Man & Gutierrez, 2002; De Man, & Leduc, 1995; De Man et al., 1992; Harris & Molock, 2000; Heikkinen et al., 1993; Koivumaa-Honkanen, Honkanen, Viinamäki et al., 2001; Lewinsohn et al., 1994). However, none of these studies have investigated to what extent each of them contributes uniquely for the mitigation of suicide ideas.

The second part of the present study also has some methodological limitations which warrant discussion. Initially, the use of a single item to assess presence and severity of suicide ideation raises questions concerning the validity of the findings. However, it is not unusual to screen and assess level of suicide ideation through the Beck Depression Inventory item-9 (BDI; Beck et al., 1961) since this assessment procedure has been used in several studies (Bhui et al., 2003; Hintikka et al., 2001; Ivarsson, Larsson, & Gillberg, 1998; Lester & Beck, 1977; Tanskanen et al., 2001). Furthermore, satisfactory psychometric properties have been reported for the suicide item of the HSCL-25 (Derogatis et al., 1974) by other investigators (Hesbacher et al., 1980). In order to examine the adequacy of the use of a single item to assess suicide ideation, a follow-up study (Chioqueta & Stiles, in press) was conducted with university students to verify the psychometric properties of the Norwegian version of the Beck Scale for Suicide Ideation (BSI; Beck, Steer, & Ranieri, 1988) and the utility of the single items. The results revealed satisfactory reliability for the full scale and the single items. The validity estimates for all three measures evidenced by the moderately high correlations found among them and among related constructs suggesting the adequacy of such measures in the assessment of suicide ideation.

A second potential source of debate refers to the fact that two of the studies (Papers V and VI) were accomplished with university students, a fact that may limit the generalizability of the results to other populations, particularly clinical. However, students represent an important analogue group for empirically evaluating theoretical models of depression and suicidal behaviour (Schotte & Clum, 1982). Research findings, concerning depression, have demonstrated that the results of studies with students and clinical samples are similar suggesting that sub-clinical depression levels exhibited by students provide a fairly accurate model of clinical depression (Hill, Kemp-Wheeler, & Jones, 1987; Vredenburg, Flett, & Krames, 1993). Similarly, correlations between hopelessness scores, measured by means of the Beck Hopelessness Scale (BHS), and depression have been reported to be similar for

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college students and clinical populations (Alford, Lester, Patel, Buchanan, & Giunta, 1995). In addition, the BHS has been used to detect hopelessness in normal adult and adolescent populations (Alford et al., 1995; Durham, 1982). Finally, suicide ideation is common in the general population, especially among college students, occurring more frequently than attempts and completed suicides (Bjerke et al., 1992; Meehan et al., 1992; Rudd, 1989) as mentioned previously. Thus, empirical evidence supports the utilization of data obtained from college students to investigate psychological vulnerabilities to maladaptive states (Vredenburg et al., 1993).

Finally, the cross-sectional nature of two of the studies (Papers V and VI) limits the ability to make causal inferences since such designs allow only the exploration of possible associations between the variables under investigation (Kraemer, Yesavage, Taylor, & Kupfer, 2000). A longitudinal design is thus necessary and recommended in future studies to investigate the long-term stability of such associations. However, a replication (Chioqueta & Stiles, 2004d) of the study described in Paper VI using a longitudinal design with a three month interval between the test and retest revealed some consistencies regarding the development/mitigation of hopelessness. More specifically, it was found that, after statistically controlling for initial level of depression, severity of hopelessness measured three months later, was significantly predicted by satisfaction with life and self-esteem. These variables are the same as found in the cross-sectional study described in the present thesis. Nevertheless, some differences emerged regarding suicide ideation. In the cross-sectional study, level of self-esteem and perceived social support were strongly associated with severity of suicide ideation, while in the longitudinal study, satisfaction with life emerged as the significant predictor of long-term suicide ideation, after statistically controlling for initial levels of depression. There was though a tendency for perceived social support to become significantly associated with the mitigation of suicidal ideas ($\beta = -.16$, t = 1 1.84, p = .067). Although further replication of the present studies is necessary, preferably using a time

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interval longer than three months, the findings provide useful insights in suicide protective factors research. Satisfaction with life has been found to be a significant predictor of long-term suicide ideation, as it has been level of self-esteem and perceived social support.

Similar patterns of associations were also found on a replication (Chioqueta & Stiles, 2004e) of the study of personality traits and the development of suicide ideation and hopelessness (Paper V), particularly regarding the facet level. Accordingly, similar to the previous study, Neuroticism and Extraversion were significantly associated with higher and lower levels, respectively, of hopelessness measured three months later. Differently though, Conscientiousness also emerged as a significant predictor of future lower levels of hopelessness. The results were practically the same for the prediction of future levels of suicide ideation, observed by the fact that only Neuroticism was significantly associated with long-term suicide ideation. At the trait level, some differences were observed. Among the Neuroticism traits, only depression was associated with higher levels of both hopelessness and suicide ideation, while among the Extraversion traits, warmth and positive emotions were significantly associated with lower levels of hopelessness. Competence and achievement striving were the Conscientiousness's traits which emerged as significant predictors of lower levels of hopelessness.

In summary, the findings provide useful information concerning the development and mitigation of suicide ideation and hopelessness. Initially, suicide ideation is the entry point into the suicidal process or the beginning of the continuum which starts with suicidal ideas and may or may not evolve to a more serious behaviour. Thus, the early recognition of such thoughts may contribute to suicide prevention. Furthermore, current suicide ideation has been empirically demonstrated to be associated with and predictive of future suicidal behaviour. Similarly, there is considerable evidence stating the usefulness of hopelessness, as measured by the Beck Hopelessness Scale (BHS; Beck et al., 1974) in the assessment and prediction of suicide potential (Beck, Kovacs & Weissman, 1975; Petrie & Chamberlain, 1983). As stated

by Beck (1986) "hopelessness is an important clue that should alert clinicians to long-term suicide potential" (p. 93). Also relevant is the fact that very few studies have investigated vulnerability and protective factors which may be involved in the development and mitigation of hopelessness. Thus, the present findings are particularly interesting considering that hopelessness is a set of beliefs that can be modified through cognitive therapy as asserted by Brown et al. (2000).

5.3 Major conclusions

The main conclusions that can be drawn from the studies presented in this thesis are:

(1) It is essentially the mood disorders, especially major depressive episode and dysthymia, that are associated with increased risk for suicidal behaviour.

(2) Higher levels of anxiety in patients with major depressive disorder are associated with significantly increased levels of hopelessness, while higher levels of anxiety in patients with dysthymia are significantly associated with increased levels of suicide ideation.

(3) Somatization disorder represents an independent risk factor for suicidal behaviour.

(4) Anxiety disorders are not associated with increased risk for suicidal behaviour.

(5) Clusters A and B personality disorders represent independent risk factors for suicidal behaviour.

(6) No specific personality disorder in the Cluster C were found to be independent risk factors for suicidal behaviour. However, dependent personality disorder is associated with increased risk for suicidal behaviour, but not when the presence of comorbid depressive disorder is accounted for.

(7) Higher frequencies of negative automatic thoughts are associated with increased risk for suicide ideation.

(8) Active engagement in sport seems to mitigate the frequency of negative automatic thoughts and suicidal thoughts.

(9) Neuroticism seems to be the main personality factor associated with the development of suicide ideation, while Extraversion is the personality factor associated with the mitigation of hopelessness.

(10) Life satisfaction and perception of social support are uniquely associated with the development/mitigation of suicide risk, independent of the severity of depressive symptoms.

6. References

Abramson, L. Y., Alloy, L B., Hogan, M. E., Whitehouse, W. G., Gibb, B. E., Hankin, B. L.,
& Cornette, M. M. (2000). The hopelessness theory of suicidality. In T. Joiner & M. D.
Rudd (Eds.), Suicide science: Expanding the boundaries (pp. 17-32). London: Kluver
Academic publishers.

Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-
based subtype of depression. Psychological Review, 96, 358-372.

Akiskal, H.S., Hirschfeld, R. M. A, & Yerevanian, B. I. (1983). The relationship of
personality to affective disorders. Archives of General Psychiatry, 40, 801-810.

Alford, B. A., & Beck, A. T. (1997). The integrative power of cognitive therapy. New York:
Guilford Press.

Alford, B. A., Lester, J. M., Patel, R. J., Buchanan, J. P., & Giumta, L. C. (1995).
Hopelessness predicts future depressive symptoms: A prospective analysis of cognitive
vulnerability and cognitive content specificity. Journal of Clinical Psychology, 51, 331-
339.

American Psychiatric Association. (1980). Diagnostic and statistical manual of mental
disorders (3rd ed.). Washington, DC: Author.

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental
disorders (4th ed.). Washington, DC: Author.

Angst, J. (1995). The epidemiology of depressive disorders. European
Neuropsychopharmacology Supplement, 95-98.

Anteghini, M., Fonseca, H., Ireland, M., & Blum, R. W. (2001). Health risk behaviors and
associated risk and protective factors among Brazilian adolescents in Santos, Brazil.
Journal of Adolescent Health, 28, 295-302.

Arato, M., Demeter, E., Rihmer, Z., & Somogyi, E. (1988). Retrospective psychiatric
  assessment of 200 suicides in Budapest. Acta Psychiatrica Scandinavica, 77, 454-456.

Asnis, G. M., Friedman, T. A, Sanderson, W. C., Kaplan, M. L., Van Praag, H. M., Harkavy
  Friedman, J. M. (1993). Suicidal behaviors in adult psychiatric outpatients I: Description
  and prevalence. American Journal of Psychiatry, 150, 108-112.

Bagby, R. M., Joffe, R. T., Parker, J. D. A., Kalemba, V., & Harkness, K. L. (1995). Major
  depression and the five-factor model of personality. Journal of Personality Disorders, 9,
  224-234.

Beautrais, A. L., Joyce, P. R., Mulder, R. T., Fergusson, D. M., Deavoll, B. J., & Nightingale,
  S. K. (1996). Prevalence and comorbidity of mental disorders in persons making serious
  suicide attempts: A case-control study. American Journal of Psychiatry, 153, 1009-
  1014.

Beck, A.T. (1963). Thinking and distortion. Archives of General Psychiatry, 4, 561-567.

Beck, A. T. (1967). Depression: Causes and treatment. Philadelphia: University of
  Pennsylvania Press.

Beck, A. T. (1976). Cognitive therapy and the emotional disorders. New York: International
  University Press.

Beck, A. T. (1986). Hopelessness as a predictor of eventual suicide. Annals of the New York
  Academy of Sciences, 487, 90-96.

Beck, A. T. (1987). Cognitive models of depression. Journal of Cognitive Psychotherapy, 1,
  5-37.

Beck, A. T. (1996). Beyond belief: A theory of modes, personality, and psychopathology. In
  P. Salkovskis, (Ed.), Frontiers of cognitive therapy (pp. 1-25). London: The Guilford
  Press.

Beck, A. T., Brown, G. K., Berchick, R. J., Stewart, B. L., & Steer, R. A. (1990). Relationship between hopelessness and ultimate suicide: A replication with psychiatric patients. American Journal of Psychiatry, 147, 190-195.

Beck, A. T., & Clark, D. A. (1988). Anxiety and depression: An information processing perspective. Anxiety Research, 1, 23-36.

Beck, A. T., Davis, J. H., Frederick, C. J., Perlin, S., Pokorny, A., Schulman, R., Seiden, R., & Wittlin, B. (1973). Classification and nomenclature. In H. L. P. Resnick & B. Hathorne (Eds.), Suicide prevention in the seventies. Washington, D.C.: U. S. Government Printing Office.

Beck, A. T., Epstein, N., Brown G., & Steer R. (1988). An inventory for measuring clinical anxiety: Psychometric properties. Journal of Consulting and Clinical Psychology, 56, 893-897.

Beck, A. T., & Freeman, A. M. (1990). Cognitive therapy of personality disorders. New York: Guilford Press.

Beck, A. T., Kovacs, M., & Weissman, A. (1975). Hopelessness and suicidal behavior. Journal of the American Medical Association, 234, 1146-1149.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal ideation: The scale for suicide ideation. Journal of Consulting and Clinical Psychology, 47, 343-352.

Beck, A. T., Riskind, J. H., Brown, G., & Steer, R. A. (1988). Levels of hopelessness in DSM-III disorders: A partial test of content specificity in depression. Cognitive Therapy and Research, 12, 459-469.

Beck, A. T., & Rush, A. J. (1978). Cognitive approaches to depression and suicide. In G. Serban (Ed.), Cognitive defects in the development of mental illness. New York: Brunner/Mazel.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). Cognitive therapy of depression. New York: Guilford Press.

Beck, A. T., & Steer, R. A. (1988). <u>Manual for the Beck Hopelessness Scale</u>. San Antonio, TX: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1993). <u>Manual for the Beck Anxiety Inventory</u>. San Antonio, TX: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1991). <u>Manual for the Beck Scale for Suicide Ideation</u>. San Antonio, TX: Psychological Corporation.

Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. <u>Suicide and Life Threatening Behavior, 23</u>, 139-145.

Beck, A. T., Steer, R. A., & Brown, G. (1993). Dysfunctional attitudes and suicidal ideation in psychiatric outpatients. <u>Suicide and Life Threatening Behavior, 23</u>, 11-20.

Beck, A. T., Steer, R. A., Epstein, N., & Brown, G. (1990). The Beck Self-Concept Test. <u>Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2</u>, 191-197.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. <u>Clinical Psychology Review, 8</u>, 77-100.

Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. <u>American Journal of Psychiatry, 142</u>, 559-563.

Beck, A. T., Steer, R. A., & Ranieri, W. F. (1988). Scale for suicide ideation: Psychometric properties of a self-report version. <u>Journal of Clinical Psychology, 44</u>, 499-505.

Beck, A. T., Steer, R. A., Sanderson, W. C., & Skeie, T. M. (1991). Panic disorder and suicidal ideation and behavior: Discrepant findings in psychiatric outpatients. <u>American Journal of Psychiatry, 148</u>, 1195-1199.

Beck, A. T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.

Beck, A. T., Weissman, M., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The Hopelessness Scale. Journal of Consulting and Clinical Psychology, 42, 861-865.

Bedrosian, R. C., & Beck, A. T. (1979). Cognitive aspects of suicidal behavior. Suicide and Life Threatening Behavior, 2, 87-96.

Bertolote, J. M., Fleischmann, A., De Leo, D., & Wasserman, D. (2003). Suicide and mental disorders: Do we know enough? British Journal of Psychiatry, 183, 382-383.

Bhui, K., Abbi, A., Abdi, M., Pereira, S., Dualeh, M., Robertson, D., Sathyamoorthy, G., & Ismail, H. (2003). Traumatic events, migration characteristics and psychiatric symptoms among Somali refugees. Social Psychiatry and Psychiatric Epidemiology, 38, 35-43.

Bibb, R., & Guze, S. (1972). Hysteria (Briquet's syndrome) in a psychiatric hospital: The significance of secondary depression. American Journal of Psychiatry, 129, 224-228.

Biddle, S. J. H., Fox, K. R., & Boutcher, S. H. (2000). Physical activity and psychological well-being. London: Routledge.

Biddle, S. J. H., & Mutrie, N. (2001). Psychology of physical activity, well-being and interventions. London: Routledge.

Bjerke, T., Svarva, K., & Stiles, T.C. (1992). Self-reported suicidal thoughts and suicide attempts among university students. Nordisk Psykologi, 44, 144-151.

Black, D. W., Bell, S., Hulbert, J., & Nasrallah, A. (1988). The importance of axis II in patients with major depression; a controlled study. Journal of Affective Disorders, 14, 115-122.

Black, D. W., Warrack, G., & Winokur, G. (1985). The Iowa record-linkage study, I: suicides and accidental deaths among psychiatric patients. Archives of General Psychiatry, 42, 71-74.

Blumenthal, S. J. (1990). An overview and synopsis of risk factors, assessment, and treatment of suicidal patients over the life cycle. In S. J. Blumenthal & D. J. Kupfer (Eds.), Suicide over the life cycle: risk factors, assessment, and treatment of suicidal patients (pp.685-733). Washington, DC: American Psychiatric Press.

Blumenthal, S. J., & Kupfer, D. J. (1986). Generalizable treatment strategies for suicidal behavior. In J. J. Mann & M. Stanley (Eds.), Psychobiology of suicidal behavior (pp. 327-340). New York: New York Academy of Sciences.

Bonner, R. L., & Rich, A. R. (1987). Toward a predictive model of suicidal ideation and behavior: Some preliminary data in college students. Suicide and Life-Threatening Behavior, 17, 50-63.

Borden, J. W. (1994). Panic disorder and suicidality: Prevalence and risk factors. Journal of Anxiety Disorders, 8, 217-225.

Brent, D. A., Johnson, B. A., Perper, J., Connolly, J., Bridge, J., Bartle, S., & Rather, C. (1994). Personality disorder, personality traits, impulsive violence, and completed suicide in adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 33, 1080-1086.

Brodsky, B. S., Malone, K. M., Ellis, S. P., Dulit, R. A., & Mann, J. J. (1997). Characteristics of borderline personality disorder associated with suicidal behavior. American Journal of Psychiatry, 154, 1715-1719.

Bronisch, T. (1996). The relationship between suicidality and depression. Archives of Suicide Research, 2, 235-254.

Bronisch, T., & Wittchen, H-U. (1994). Suicidal ideation and suicide attempts: Comorbidity with depression, anxiety disorders, and substance abuse disorder. European Archives of Psychiatry and Clinical Neuroscience, 244, 93-98.

Brown, T. A., & Barlow, D. H. (1992). Comorbidity among anxiety disorders: Implications for treatment and DSM-IV. Journal of Consulting and Clinical Psychology, 60, 835-844.

Brown, G. K., Beck, A. T., Steer, R. A., & Grisham, J. R. (2000). Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. Journal of Consulting and Clinical Psychology, 68, 371-377.

Brown, D. R., & Blanton, C. J. (2002). Physical activity, sports participation, and suicidal behavior among college students. Medicine and Science in Sports and Exercise, 34, 1087-1096.

Brooks, R. B., Baltazar, P. L., McDowell, D. E., Munjack, D. J., & Bruns, J. R. (1991). Personality disorders co-occurring with panic disorder with agoraphobia. Journal of Personality Disorders, 5, 328-336.

Byrne, A., & Byrne, D. G. (1993). The effect of exercise on depression, anxiety and other mood states: A review. Journal of Psychosomatic Research, 37, 565-574.

Casey, P. R. (1989). Personality disorder and suicide intent. Acta Psychiatrica Scandinavica, 79, 290-295.

Charney, D. S., Nelson, J. C., & Quinlan, D. M. (1981). Personality traits and disorder in depression. American Journal of Psychiatry, 138, 1601-1604.

Cheng, A. T. A. (1995). Mental illness and suicide: A case-control study in East Taiwan. Archives of General Psychiatry, 52, 594-603.

Chen, Y. W., & Dilsaver, S. (1996). Lifetime rates of suicide attempts among subjects with bipolar and unipolar disorders relative to subjects with other axis I disorders. Society of Biological Psychiatry, 39, 896-899.

Chioqueta, A. P. & Stiles, T. C. (in press). Psychometric properties of the Beck Scale for Suicide Ideation: A Norwegian study. Nordic Journal of Psychiatry.

Chioqueta, A. P. & Stiles, T. C. (2004a). The measurement of hopelessness: A Norwegian study. Manuscript submitted for publication.

Chioqueta, A. P., & Stiles, T. C. (2004b). Norwegian version of the Automatic Thoughts Questionnaire: A reliability and validity study. Cognitive Behaviour Therapy, 33, 79-82.

Chioqueta, A. P., & Stiles, T. C. (2004c). Reliability and validity of the Norwegian version of the Dysfunctional Attitude Scale (Form A). Cognitive Behaviour Therapy, 33, 83-86.

Chioqueta, A. P., & Stiles, T. C. (2004d). The mitigation of hopelessness and suicide ideation: A longitudinal study. Manuscript in preparation for submission.

Chioqueta, A. P., & Stiles, T. C. (2004e). The role of personality in the development of hopelessness and suicide ideation: A longitudinal study. Manuscript in preparation for submission.

Choquet, M., Kovess, V., & Poutignac, N. (1993). Suicidal thoughts among adolescents: An intercultural approach. Adolescents, 32, 113-129.

Clark, D. A., Beck, A. T., & Brown, G. (1989). Cognitive mediation in general psychiatric outpatients: A test of the content-specificity hypothesis. Journal of Personality and Social Psychology, 56, 958-964.

Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and the mood and anxiety disorders. Journal of Abnormal Psychology, 103, 103-116.

Clarkin, J. F., Friedman, R. C., Hurt, S. W., Corn, R., & Aronoff, M. (1984). Affective and character pathology of suicidal adolescent and young adult inpatients. Journal of Clinical Psychiatry, 45, 19-22.

Clum, G., Patsiokas, A., & Luscomb, R. (1979). Empirically based comprehensive treatment program for parasuicides. Journal of Consulting and Clinical Psychology, 47, 937-945.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. Psychosocial Bulletin, 98, 310-357.

Corbitt, E. M., Malone, K. M., Haas, G. L., & Mann, J. J. (1996). Suicidal behavior in patients with major depression and comorbid personality disorders. Journal of Affective Disorders, 39, 61-72.

Corruble, E., Ginestet, D., Guelfi, J. D. (1996). Comorbidity of personality disorders and unipolar major depression: a review. Journal of Affective Disorders, 37, 157-170.

Coryell, W. (1981). Obsessive-compulsive disorder and primary unipolar depression: comparisons of background, family history, course, and mortality. Journal of Nervous and Mental Disease, 169, 220-224.

Coryell, W., Noyes, R., & Clancy, J. (1982). Excess mortality in panic disorder: A comparison with primary unipolar depression. Archives of General Psychiatry, 39, 701-703.

Costa, P. T., & McCrae, R. R. (1978). Objective personality assessment. In M. Storandt, I. C. Siegler, & M. F. Elias (Eds.), The clinical psychology of aging (pp. 119-143). New York: Plenum Press.

Costa, P. T., & McCrae, R. R. (1980). Influence of Extraversion and Neuroticism on subjective well-being: Happy and unhappy people. Journal of Personality and Social Psychology, 38, 668-678.

Costa, P. T., & McCrae, R. R. (1990). Personality disorders and the five-factor model of personality. Journal of Personality Disorders, 4, 362-371.

Costa, P. T., & McCrae, R. R. (1992a). Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (1992b). The five-factor model of personality and its relevance to personality disorders. Journal of Personality Disorders, 6, 343-359.

Costa, P. T., McCrae, R. R., & Dye, D. A. (1991). Facet scales for Agreeableness and Conscientiousness: A revision of the NEO Personality Inventory. Personality and Individual Differences, 12, 887-898.

Cox, B. J., Direnfeld, D. M., Swinson, R. P., & Norton, G. R. (1994). Suicidal ideation and suicide attempts in panic disorder and social phobia. American Journal of Psychiatry, 151, 882-887.

Craft, L. L., & Landers, D. M. (1998). The effect of exercise on clinical depression and depression resulting from mental illness: A meta-analysis. Journal of Sport and Exercise Psychology, 20, 339-357.

Cunha, J. A. (2001). Manual da Versão em Português das Escalas Beck (Manual of the Portuguese version of the Beck Scales). São Paulo: Casa do Psicólogo.

Davidson, J. R. T., Hughes, D. L., George, L. K., & Blazer, D. G. (1993). The epidemiology of social phobia: Findings from the Duke Epidemiological Catchment Area study. Psychological Medicine, 23, 719-729.

De Leo, D., & Spathonis, K. (2003). Do Psychosocial and Pharmacological Interventions Reduce Suicide in Schizophrenia and Schizophrenia Spectrum Disorders? Archives of Suicide Research, 7, 353-374.

De Man, A. F., & Gutierrez, B. I. B. (2002). The relationship between level of self-esteem and suicidal ideation with stability of self-esteem as moderator. Canadian Journal of Behavioural Science, 34, 235-238.

De Man, A. F., & Leduc, C. P. (1995). Suicidal ideation in high school students: Depression and other correlates. Journal of Clinical Psychology, 51, 173-181.

De Man, A. F., Leduc, C. P., & Labreche-Gauthier, L. (1992). Correlates of suicide ideation in French-Canadian adults and adolescents. Journal of Clinical Psychology, 48, 811-816.

Demo, D. H. (1985). The measurement of self-esteem: Refining our methods. Journal of Personality and Social Psychology, 48, 1490-1502.

Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale – preliminary report. Psychopharmacology Bulletin, 9, 13-28.

Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. Behaviour Science, 19, 1-15.

DeSouza, C., & Othmer, E. (1984). Somatization disorder and Briquet's syndrome. <u>Archives of General Psychiatry, 41</u>, 334-336.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. <u>Journal of Personality Assessment, 49</u>, 71-75.

Dieserud, G., Røysamb, E., Ekeberg, Ø., & Kraft, P. (2001). Toward an integrative model of suicide attempt: A cognitive psychological approach. <u>Suicide and Life-Threatening Behavior, 31</u>, 153-168.

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. <u>Annual Review of Psychology, 41</u>, 417-440.

Dobson, K. S., & Breiter, H. J. (1983). Cognitive assessment of depression: Reliability and validity of three measures. <u>Journal of Abnormal Psychology, 92</u>, 107-109.

Dozois, D. J. A., & Dobson, K. S. (2004). <u>The prevention of anxiety and depression: Theory, research, and practice.</u> Washington, DC, US: American Psychological Association.

Duggan, C., Sham, P., Lee, A., Minne, C., & Murray, R. (1995). Neuroticism: A vulnerability marker for depression evidence from a family study. <u>Journal of Affective Disorders, 35,</u> 139-143.

Duberstein, P.R., & Conwell, Y. (1997). Personality disorders and completed suicide: a methodological and conceptual review. <u>Clinical Psychology: Science and Practice, 4,</u> 359-376.

Durham, T. W. (1982). Norms, reliability and item analysis of the hopelessness scale in general, psychiatric, forensic psychiatric, and college populations. <u>Journal of Clinical Psychology, 38, </u>597-600.

Dyck, M. J. (1991). Positive and negative attitudes mediating suicide ideation. <u>Suicide and Life-Threatening Behavior, 21</u>, 360-373.

Dyck, R. J., Bland, R. C., Newman, S. C., & Orn, H. (1988). Suicide attempts and psychiatric disorders in Edmonton. <u>Acta Psychiatrica Scandinavica, 77</u>, 64-71.

Eberhard-Gran, M., Eskild A., Tambs, K., Schei, B., & Opjordsmoen, S. (2001). The

Edinburg Postnatal Depression Scale: Validation in a Norwegian community sample.

Nordic Journal of Psychiatry, 55, 113-117.

Ellis, T. E., & Ratliff, K. G. (1986). Cognitive characteristics of suicidal and nonsuicidal

psychiatric inpatients. Cognitive Therapy and Research, 10, 625-634.

Enns, M. W., & Cox, B. J. (1997). Personality dimensions and depression: Review and

commentary. Canadian Journal of Psychiatry, 42, 274-284.

Farmer, R., & Nelson-Gray, R. O. (1990). Personality disorders and depression. Hypothetical

relations, empirical findings, and methodological considerations. Clinical Psychology

Review, 10, 453-476.

Fawcett, J., Scheftner, W., Fogg, L., Clark, D. C., Young, M. A., Hedeker, D., & Gibbons, R.

(1990). Time-related predictors of suicide in major affective disorder. American Journal

of Psychiatry, 147, 1189-1194.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). User's guide for the

structured clinical interview for DSM-IV axis I disorders-clinician version (SCID-CV).

Washington, DC: American Psychiatric Press.

Flett, G. L., Hewitt, P. L., Endler, N. S., & Bagby, R. M. (1995) Conceptualization and

assessment of personality factors in depression. European Journal of Personality, 9, 309-

350.

Frances, A., Fyer, M., & Clarkin, J. (1988). Personality and suicide. Annals of the New York

Academy of Sciences (Psychobiology of suicidal behavior), 487, 281-293.

Friborg, O., Hjemdal, O., Rosenvinge, J. H., Martinussen, M. (2003). A new rating scale for

adult resilience: What are the central protective resources behind healthy adjustment?

International Journal of Methods in Psychiatric Research, 12, 65-76.

Friedman, S., Jones, J., Chernen, L., & Barlow, D. (1992). Suicidal ideation and suicide

    attempts among patients with panic disorder: A survey of two outpatient clinics.

    American Journal of Psychiatry, 149, 680-685.

Furnham, A., & Brewin, C. R. (1990). Personality and happiness. Personality and Individual

    Differences, 11, 1093-1096.

Gardner, D. L., & Cowdry, R.W. (1985). Suicidal and parasuicidal behavior in borderline

    personality disorder. Psychiatric Clinics of North America, 8, 389-403.

Goldsmith, S. J., Fyer, M., Frances, A. (1990). Personality and suicide. In S. J. Blumenthal &

    D. J. Kupfer (Eds.), Suicide over the life cycle: Risk factors, assessment, and treatment

    of suicidal patients (pp.155-176). England: American Psychiatric Press.

Gutierrez, P. M., Osman, A., Barrios, F. X., Kopper, B. A., Baker, M. T., & Haraburda, C. M.

    (2002). Development of the Reasons for Living Inventory for young adults. Journal of

    Clinical Psychology, 58, 339-357.

Hagborg, W. J. (1993). The Rosenberg Self-Esteem Scale and Harter's Self-Perception

    Profile for Adolescents: A concurrent validity study. Psychology in the Schools, 30,

    132-136.

Hamilton, E., & Abramson, L. (1983). Cognitive patterns and major depressive disorder: A

    longitudinal study in a hospital setting. Journal of Abnormal Psychology, 92, 173-184.

Harrel, T. & Ryon, N. (1983). Cognitive-behavioral assessment of depression: Clinical

    validation of the automatic thoughts questionnaire. Journal of Consulting and Clinical

    Psychology, 51, 721-725.

Harris, E. C., & Barraclough, B. (1997). Suicide as an outcome for mental disorders: A meta-

    analysis. British Journal of Psychiatry, 170, 205-228.

Harris, T. L., & Molock, S. D. (2000). Cultural orientation, family cohesion, and family

    support in suicide ideation and depression among African American college students.

    Suicide and Life-Threatening Behavior, 30, 341-353.

Heeringen, K. V. (2001). <u>Understanding suicidal behavior: The suicidal process, approach to research, treatment and prevention</u>. New York: John Wiley & Sons.

Heikkinen, M., Aro, H., & Lonnqvist, J. (1993). Life events and social support in suicide. <u>Suicide and Life-Threatening Behavior, 23</u>, 343-358.

Heikkinen, M., Aro, H., & Lonnqvist, J. (1994). Recent life events, social support and suicide. <u>Acta Psychiatrica Scandinavica, 377</u>, 65-72.

Henriksson, M. M., Aro, H. M., Marttunen, M. J., Heikkinen, M. E., Isometsä, E. T., Kuoppasalmi, K. I., & Lönnqvist, J. K. (1993). Mental disorders and comorbidity in suicide. <u>American Journal of Psychiatry, 150</u>, 935-940.

Henriksson, M. M., Isometsa, E. T., Kuoppasalmi, K. I., Heikkinen, M. E., Marttunen, M. J., & lonnqvist, J. K. (1996). Panic disorder in completed suicide. <u>Journal of Clinical Psychiatry, 57</u>, 275-281.

Hesbacher, P. T., Rickels, K., Morris, R. J., Newman, H., & Rosenfeld, H. (1980). Psychiatric Illness in family practice. <u>Journal of Clinical Psychiatry, 41</u>, 6-10.

Hill, A. B., & Kemp-Wheeler, S. M. (1986). Personality, life events and sub-clinical depression in students. <u>Personality and Individual Differences, 7</u>, 469-478.

Hill, A. B., Kemp-Wheeler, S. M., & Jones, S. A. (1987). Subclinical and clinical depression: Are analogue studies justifiable? <u>Personality and Individual Differences, 8</u>, 113-120.

Hintikka, J., Pesonen, T., Saarinen, P., Tanskanen, A., Lehtonen, J., & Viinamäki, H. (2001). Suicidal ideation in the Finnish general population: A 12-month follow-up study. <u>Social Psychiatry and Psychiatric Epidemiology, 36</u>, 590-594.

Hintikka, J., Viinamäki, H., Koivumaa-Honkanen, H. T., Saarinen, P., Tanskanen, A., & Lehtonen, J. (1998). Risk factors for suicidal ideation in psychiatric patients. <u>Social Psychiatry and Psychiatric Epidemiology, 33</u>, 235-240.

Hirsch, J., & Ellis, J. B. (1995). Family support and other social factors precipitating suicidal ideation. <u>International Journal of Social Psychiatry, 41</u>, 26-30.

Hirschfeld, R. M. A., Klerman, G. L., Clayton, P. J., & Keller, M. B. (1983). Personality and

depression: Empirical findings. Archives of General Psychiatry, 40, 993-998.

Hirschfeld, R. M. A., Klerman, G. L., Lavori, P., Keller, M. B., Griffith, P., & Coryell, W.

(1989). Premorbid personality assessments of first onset of major depression. Archives

of General Psychiatry, 46, 345-350.

Hjelmeland, H., & Bjerke, T. (1996). Parasuicide in the county of Sør-Trøndelag, Norway:

General epidemiology and psychological factors. Social Psychiatry and Psychiatric

Epidemiology, 31, 272-283.

Hjelmeland, H., Stiles, T. C., Bille-Brahe, U., Ostamo, A., Salander Renberg, E., &

Wasserman, D. (1998). Parasuicide: The value of suicidal intent and various motives as

predictors of future suicidal behaviour. Archives of Suicide Research, 4, 209-225.

Hjemdal, O., Friborg, O., Martinussen, M., & Rosenvinge, J. H. (2001). Mestring og

psykologisk motstandsdyktighet hos voksne. Utvikling og foreløpig validering av et nytt

instrument (Preliminary results from the development and validation of a Norwegian

scale for measuring adult resilience). Tidsskrift for Norsk Psykologforening, 38, 310-

317.

Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development

of an automatic thoughts questionnaire. Cognitive Therapy and Research, 4, 383-395.

Hollon, S. D., Kendall, P. C., & Lumry, A. (1986). Specificity of depressotypic cognitions in

clinical depression. Journal of Abnormal Psychology, 95, 52-59.

Hughes, S. L., & Neymeyer, R. A. (1993). Cognitive predictors of suicide risk among

hospitalized psychiatric patients: A prospective study. Death Studies, 17, 103-124.

Isometsä, E., Heikkinen, M., Henriksson, M., Aro, H., Marttunen, M., Kuoppasalmi, K., &

Lönnqvist, J. (1996). Suicide in non-major depression. Journal of Affective Disorder,

36, 117-127.

Isometsä, E. T., Henriksson, M. M., Heikkinen, M. E., Aro, H. M., Marttunen, M. J., Kuoppasalmi, K. I., & Lönnqvist, J. K. (1996). Suicide among subjects with personality disorders. American Journal of Psychiatry, 153, 667-673.

Ivarsson, T., Larsson, B., & Gillberg, C. (1998). A 2-4 year follow-up of depressive symptoms, suicidal ideation, and suicide attempts among adolescent psychiatric inpatients. European Child and Adolescent Psychiatry, 7, 96-104.

Jackson, P. B. (1992). Specifying the buffering hypothesis: Support, strain, and depression. Social Psychology Quarterly, 55, 363-378.

Jackson, S. W. (1986). Melancholia and depression: From Hippocratic times to modern times. New Haven, CT: Yale University Press.

Johnson, J., Weissman, M. M., & Klerman, G. L. (1990). Panic disorder, comorbidity and suicide attempts. Archives of General Psychiatry, 47, 805-808.

Joiner, T. E., & Rudd, M. D. (1995). Negative attributional style for interpersonal events and the occurrence of severe interpersonal disruptions as predictors of self-reported suicidal ideation. Suicide and Life Threatening Behavior, 25, 297-304.

Kerkhof, A. J. F. M., & Arensman, E. (2001). Pathways to suicide: The epidemiology of the suicidal process. In K. V. Heeringen (Ed.), Understanding suicidal behavior: The suicidal process, approach to research, treatment amd prevention (pp.15-39). New York: John Wiley & Sons.

Kernberg, O. F. (1984). Severe personality disorders. Psychotherapeutic strategies. New Haven: Yale University Press.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. Archives of General Psychiatry, 56, 617-626.

Khan, A., Leventhal, R. M., Khan, S., & Brown, W. A. (2002). Suicide risk in patients with

anxiety disorders: A meta-analysis of the FDA database. <u>Journal of Affective Disorders,</u>

<u>68</u>, 183-190.

Klerman, G. L. (1987). Clinical epidemiology of suicide. <u>Journal of Clinical Psychiatry, 48,</u>

33-38.

Koivumaa-Honkanen, H., Honkanen, R., Antikainen, R., Hintikka, J., Laukkanen, E.,

Honkalampi, K., & Viinamäki, H. (2001). Self-reported life satisfaction and recovery

from depression in a 1-year prospective study. <u>Acta Psychiatrica Scandinavica, 103</u>, 38-

44.

Koivumaa-Honkanen, H., Honkanen, R., Koskenvuo, M., & Kaprio, J. (2003). Self-reported

happiness in life and suicide in ensuing 20 years. <u>Social Psychiatry and Psychological</u>

<u>Epidemiology, 38</u>, 244-248.

Koivumaa-Honkanen, H., Honkanen, R., Viinamäki, H., Heikkilä, K., Kaprio, J., &

Koskenvuo, M. (2000). Self-reported life satisfaction and 20-year mortality in healthy

Finnish adults. <u>American Journal of Epidemiology, 152</u>, 983-991.

Koivumaa-Honkanen, H., Honkanen, R., Viinamäki, H., Heikkilä, K., Kaprio, J., Koskenvuo,

M. (2001). Life satisfaction and suicide: A 20-year follow-up study. <u>American Journal</u>

<u>of Psychiatry, 158</u>, 433-439.

Koivumaa-Honkanen, H., Viinamäki, H., Honkanen, R., Tanskanen, A., Antikainen, R.,

Niskanen, L., Jääskeläinen, J., Lethonen, J. (1996). Correlates of life satisfaction among

psychiatric patients. <u>Acta Psychiatrica Scandinavica, 94</u>, 372-378.

Kraemer, H. C., Yesavage, J. A., Taylor, J. L., & Kupfer, D. (2000). How can we learn about

developmental processes from cross-sectional studies, or can we? <u>American Journal of</u>

<u>Psychiatry, 157</u>, 163-171.

Krug, E. G., Dahlberg, L. L., Mercy, J. A., Zwi, A. B., & Lozano, R. (2002). <u>World report on</u>

<u>violence and health</u>. Geneva: World Health Organization.

Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. Journal of Personality and Social Psychology, 61, 132-140.

Lash, J. M. (2000). The effects of acute exercise on cognitions related to depression. Dissertation Abstracts International, 60 (12-B), 6371.

Lecrubier, Y. (2001). The influence of comorbidity on the prevalence of suicidal behaviour. European Psychiatry, 16, 395-399.

Lepine, J.-P., Chignon, J., & Teherani, M. (1993). Suicide attempts in patients with panic disorders. Archives of General Psychiatry, 50, 144-149.

Lepine, J.-P., & Lellouch, J. (1995a). Classification and epidemiology of social phobia. European Archives of Psychiatry and Clinical Neuroscience, 244, 290-296.

Lepine, J.-P., & Lellouch, J. (1995b). Diagnosis and epidemiology of agoraphobia and social phobia. Clinical Neuropharmacology, 18, s15-s26.

Lesage, A. D., Boyer, R., Grunberg, F., Vanier, C., Morissette, R., Menard-Buteau, C., & Loyer, M. (1994). Suicide and mental disorders: A case-control study of young men. American Journal of Psychiatry, 151, 1063-1068.

Lester, D. (1987). Suicidal preoccupation and dysthymia in college students. Psychological Reports, 61, 762.

Lester, D., & Beck, A. T. (1977). Suicidal wishes and depression in suicidal ideators: A comparison with attempted suicides. Journal of Clinical Psychology, 33, 92-94.

Lewinsohn, P. M., Rodhe, P., Seeley, J. R. (1994). Psychosocial risk factors for future adolescent suicide attempts. Journal of Consulting and Clinical Psychology, 62, 297-305.

Linehan, M. M., Goodstein, J. L., Nielsen. S. L., & Chiles, J. A. (1983). Reasons for staying alive when you are thinking of killing yourself: The Reasons for Living Inventory. Journal of Consulting and Clinical Psychology, 51, 276-286.

Loevinger. J. (1957). Objective tests as instruments of psychological theory. <u>Psychological Reports, 3</u>, 635-694.

Malone, K. M., Oquendo, M. A., Haas, G. L., Ellis, S. P., Li, S., Mann, J. J. (2000). Protective factors against suicidal acts in major depression: Reasons for living. <u>American Journal of Psychiatry, 157</u>, 1084-1088.

Maris, R. W. (1981). <u>Pathways to suicide: A survey of self-destructive behaviors</u>. London: The Johns Hopkins Press.

Markowitz, J. S., Weissman, M. M., Ouellette, R., Lish, J. D., & Klerman, G. L. (1989). Quality of life in panic disorder. <u>Archives of General Psychiatry, 46</u>, 984-992.

Maser, J. D., & Cloninger, C. R. (1990). <u>Comorbidity of Mood and Anxiety Disorders</u>. England: American Psychiatric Press.

Massion, A. O., Warshaw, M. G., & Keller, M. B. (1993). Quality of life and psychiatric morbidity in panic disorder and generalize anxiety disorder. <u>American Journal of Psychiatry, 150</u>, 600-607.

Matthews, G., Saklofske, D. H., Costa, P. T., Deary, I. J., & Zeidner, M. (1998). Dimensional models of personality: A framework for systematic clinical assessment. <u>European Journal of Psychological Assessment, 14</u>, 36-49.

McCrae, R. R. (1987). Creativity, divergent thinking, and Openness to experience. <u>Journal of Personality and Social Psychology, 52</u>, 1258-1265.

McCrae, R. R., & Costa, P. T. Jr. (1983). Joint factors in self-reports and ratings: Neuroticism, Extraversion, and Openness to Experience. <u>Personality and Individual Differences, 4</u>, 245-255.

McCrae, R. R., & Costa, P. T., Jr. (1995). Trait explanations in personality psychology. <u>European Journal of Personality, 9</u>, 231-252.

McCrae, R. R., & Costa, P. T., Jr. (1996). Toward a new generation of personality theories: Theoretical contexts for the five-factor model . In J. S. Wiggins (Ed.), The five-factor model of personality: Theoretical perspectives. New York: The Guilford Press.

McCrae, R. R., & Costa, P. T., Jr. (1997). Conceptions and correlates of Openness to Experience. In R. Hogan, J. Johnson, & S. Briggs (Eds.), Handbook of personality psychology (pp.269-290). Orlando, FL: Academic Press.

McCrae, R. R., & Costa, P. T., Jr. (2003). Personality in adulthood: A five-factor theory perspective. London: The Guilford Press.

McGlashan, T. H. (1987). Borderline personality disorder and unipolar affective disorder. Journal of Nervous and Mental Disease, 175, 467-473.

Meehan, P. J., Lamb, J. A., Saltzman, L. E., & O'Carroll, P. W. (1992). Attempted suicide among young adults: Progress toward a meaningful estimate of prevalence. American Journal of Psychiatry, 149, 41-44.

Mehryar, A. H., Hekmat, H., & Khajavi, A. F. (1977). Some personality correlates of contemplated suicide. Psychological Reports, 40, 1291-1294.

Meites, K., Lovallo, W., & Pishkin, V. (1980). A comparison of four scales for anxiety, depression, and Neuroticism. Journal of Clinical Psychology, 36, 427-432.

Miller, K. E., King, C. A., Shain, B. N., & Naylor, M. W. (1992). Suicidal adolescents's perceptions of their family environment. Suicide and Life-threatening Behavior, 22, 226-239.

Minkoff, K., Bergman, E., Beck, A. T., & Beck, J. (1973). Hopelessness, depression, and attempted suicide. American Journal of Psychiatry, 130, 455-459.

Morgan, W. P. (1997). Physical activity and mental health. Washington: Taylor & Francis.

Morrison, J. (1982). Suicide in psychiatric practice population. Journal of Clinical Psychiatry, 43(9), 348-352.

Morrison, J., & Herbstein, J. (1988). Secondary affective disorder in women with

somatization disorder. Comprehensive Psychiatry, 29, 433-440.

Moscicki, E. K. (1999). Epidemiology of suicide. In D. G. Jacobs (Ed.), The Harvard Medical

School Guide to Suicide Assessment and Intervention (pp. 40-51). San Francisco:

Jossey-Bass Publishers.

Nekanda-Trepka, C. J. S., Bishop, S., & Blackburn, I. M. (1983). Hopelessness and

depression. British Journal of Clinical Psychology, 22, 49-60.

Neuringer, C., & Lettieri, D. J. (1971). Cognition, attitude, and affect in suicidal individuals.

Suicide and Life-Threatening Behavior, 1, 106-124.

Norton, G. R., Mcleod, L., Guertin, J., Hewitt, P. L., Walker, J. R., & Stein, M. B. (1996).

Panic disorder or social phobia: Which is worse? Behaviour Research and Therapy, 34,

273-276.

Norwegian Board of Health (1995). The National Plan for Suicide Prevention 1994-1998.

Oslo: Norwegian Board of Health.

Noyes, R. (1991). Suicide and panic disorder: A review. Journal of Affective Disorders, 22, 1-

11.

Noyes, R. Jr., Christiansen, J., Clancy, J., Garvey, M. J., Suelzer, M., & Anderson, D. J.

(1991). Predictors of serious suicide attempts among patients with panic disorder.

Comprehensive Psychiatry, 32, 261-267.

O'Carroll, P. W., Berman, A. L., Maris, R., Moscicki, E., Tanney, B., & Silverman, M.

(1996). Beyond the Tower of Babel: A nomenclature for suicidology. Suicide and Life-

Threatening Behaviour, 26, 237-252.

Oler, M. J., Maious, A. G., Martin, C. A., Richardson, E., Haney, A., Wilson, D., & Adams,

T. (1994). Depression, suicidal ideation, and substance use among adolescents. Are

athletes at less risk? Archives of Family Medicine, 3, 781-785.

Overbeek, T., Rikken, J., Schruers, K., & Griez, E. (1998). Suicidal ideation in panic disorder patients. Journal of Nervous and Mental Disease, 186(9), 577-580.

Pavot,W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. Psychological Assessment, 5, 164-172.

Perley, M., & Guze, S. (1962). Hysteria – the stability and usefulness of clinical criteria. New England Journal of Medicine, 266, 421-426.

Petrie, K. J., & Chamberlain, K. (1983). Hopelessness and social desirability as moderator variables in predicting suicidal behavior. Journal of Consulting and Clinical Psychology, 51, 485-487.

Petrie, K., Chamberlain, K., & Clarke, D. (1988). Psychological predictors of future suicidal behavior in hospitalized suicide attempters. British Journal of Clinical Psychology, 27, 247-257.

Petronis, K. R., Samuels, J. F., Moscicki, E. K., & Anthony, J. C. (1990). An epidemiological investigation of potential risk factors for suicide attempts. Social Psychiatry and Psychiatric Epidemiology, 25, 193-199.

Pharris, M. D., Resnick, M. D., Blum, R. W. (1997). Protecting against hopelessness and suicidality in sexually abused American Indian adolescents. Journal of Adolescent Health, 21, 400-406.

Pokorny, A. D. (1983). Prediction of suicide in psychiatric patients: report of a prospective study. Archives of General Psychiatry, 40, 249-257.

Prezant, D. W., & Neimeyer, R. A. (1988). Cognitive predictors of depression and suicide ideation. Suicide and Life-Threatening Behavior, 18, 259-264.

Priester, M. J., & Clum, G. A. (1992). Attributional style as a diathesis in predicting depression, hopelessness, and suicide ideation in college students. Journal of Psychopathology and Behavioral Assessment, 14, 111-122.

Purtell, J. J., Robins, E., & Cohen, M. E. (1951). Observations on clinical aspects of hysteria: A quantitative study of 50 hysteria patients and 156 control subjects. Journal of the American Medical Association, 146, 902-909.

Ranieri, W. F., Steer, R. A., Lavrence, T. I., Rissmiller, D. J., Piper, G. E., & Beck, A. T. (1987). Relationships of depression, hopelessness, and dysfunctional attitudes to suicide ideation in psychiatric patients. Psychological Reports, 61, 967-975.

Retterstøl, N. (1993). Suicide: A European perspective. Cambridge University Press.

Rich, A. R., & Bonner, R. L. (1987). Concurrent validity of a stress-vulnerability model of suicidal ideation and behavior: A follow-up study. Suicide and Life Threatening Behavior, 17, 265-270.

Rich, C. L., & Runeson, B. S. (1992). Similarities in the diagnostic comorbidity between suicide among young people in Sweden and the United States. Acta Psychiatrica Scandinavica, 86, 335-339.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton: Princeton University Press.

Rudd, M. D. (1989). The prevalence of suicidal ideation among college students. Suicide and Life Threatening Behavior, 19, 173-183.

Rudd, M. D. (1990).An integrative model of suicidal ideation. Suicide and Life Threatening Behavior, 20, 16-30.

Rudd, M. D. (2000).The suicidal mode: A cognitive-behavioral model of suicidality. Suicide and Life Threatening Behavior, 30, 18-33.

Rudd, M. D., & Joiner, T. (1998). The assessment, management, and treatment of suicidality: Toward clinically informed and balanced standards of care. Clinical Psychology: Science and Practice, 5, 135-10.

Rudd, M. D., Joiner, T., Rajab, M. H. (Eds.) (2001). Treating suicidal behavior: An effective, time-limited approach. London: Guilford Press.

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to

    psychiatric disorder. British Journal of Psychiatry, 147, 598-611.

Saklofske, D. H., Kelly, I. W., & Janzen, B. L. (1995). Neuroticism, depression, and

    depression proneness. Personality and Individual Differences, 18, 27-31.

Sandanger, I., Moum, T., Ingebrigtsen, G., Dalgard, O. S., Sørensen, T., & Bruusgaard, D.

    (1998). Concordance between symptom screening and diagnostic procedure: The

    Hopkins Symptom Checklist-25 and the Composite International Diagnostic Interview I.

    Social Psychiatry and Psychiatry Epidemiology, 33, 345-354.

Schneier, F. R., Johnson, J., Hornig, C. D., Liebowitz, M. R., & Weissman, M. M. (1992).

    Social phobia: Comorbidity and morbidity in an epidemiologic sample. Archives of

    General Psychiatry, 49, 282-288.

Schotte, D. E., & Clum, G. A. (1982). Suicide ideation in a college population: A test of a

    model. Journal of Consulting and Clinical Psychology, 50, 690-696.

Schotte, D. E., & Clum, G. A. (1987). Problem-solving skills in suicidal psychiatric patients.

    Journal of Consulting and Clinical Psychology, 55, 49-54.

Shea, T. M., Glass, D. R., Pilkonis, P. A., Watkins, J., & Docherty, J. P. (1987). Frequency

    and implications of personality disorders in a sample of depressed outpatients. Journal

    of Personality Disorders, 1, 27-42.

Shea, T. M., Widiger, T. A., & Klein, M. H. (1992). Comorbidity of personality disorders and

    depression: implications for treatment. Journal of Consulting and Clinical Psychology,

    60, 857-868.

Shneidman, E. S. (1985). Definition of suicide. New York: Wiley.

Sickel, R., & Nordvik, H. (2002). Validity of the grafological method in terms of the five-

    factor model of personality traits. Tidskrift for Norsk Psykologforening, 39, 110-114.

Sokero, T. P., Melartin, T. K., Rytsälä, H. J., Leskelä, Lestelä-Mielonen, P. S., & Isometsä, E. T. (2003). Suicidal ideation and attempts among psychiatric patients with major depressive disorder. Journal of Clinical Psychiatry, 64, 1094-1100.

Soloff, P. H., Lis, J. A., Kelly, T., Cornelius, J., & Ulrich, R. (1994). Risk factors for suicidal behavior in borderline personality disorder. American Journal of Psychiatry, 151, 1316-1323.

Soloff, P. H., Lynch, K. G., Kelly, T. M., Malone, K. M., & Mann, J. J. (2000). Characteristics of suicide attempts of patients with major depressive episode and borderline personality disorder: a comparative study. American Journal of Psychiatry, 157, 601-608.

Sommers-Flanagan, J. & Sommers-Flanagan, R. (1995). Intake interviewing with suicidal patients: A systematic approach. Professional Psychology: Research and Practice, 26, 41-47.

Spalletta, G., Troisi, A., Saracco, M., Ciani, N., & Pasini, A. (1996). Symptom profile, Axis II comorbidity and suicidal behavior in young males with DSM-III-R depressive illnesses. Journal of Affective Disorders, 39, 141-148.

Spitzer, R. L., & Williams, J. B. W. (1984). The structured clinical interview for DSM-III disorders, (SCID-P 5/1/84). New York: Biometrics Research Department.

Spitzer, R. L., Williams, J. B. W., & Gibbon, M. (1987). Structured Clinical Interview for DSM-III-R personality disorders (SCID-II). New York: New York State Psychiatric Psychiatric Institute, Biometrics Research.

Spitzer, R. L., Williams, J. B. W., Gibbon, M., First, M. B. (1992). The Structured Clinical Interview for DSM-III-R, I: History, rationale and description. Archives of General Psychiatry, 49, 624-629.

Starcevic, V., Bogojevic, G., Marinkovic, J., & Kelin, K. (1999). Axis I and Axis II comorbidity in panic/agoraphobic patients with and without suicidal ideation. Psychiatric Research, 88, 153-161.

Statistics Norway. (2004). Health, social conditions and crime statistics. http://www.ssb.no/english/subjects/03/01/10.

Steed, L. (2001). Further validity and reliability evidence for Beck Hopelessness Scale scores in a non-clinical sample. Educational and Psychological Measurement, 61, 303-316.

Stotland, E. (1969). The psychology of hope. San Francisco: Jossey-Bass.

Tanskanen, A., Hibbeln, J. R., Hintikka, J., Haatainen, K., Honkakampi, K., & Viinamäki, H. (2001). Fish consumption, depression, and suicidality in a general population. Archives of General Psychiatry, 58, 512-513.

Tellegen, A. (1991). Personality traits: Issues of definition, evidence, and assessment. In D. Cicchetti & W. Grove (Eds.), Thinking clearly about psychology: Essays in Honor of Paul Everett Meehl (pp.10-35). Minneapolis: University of Minnesota Press.

Tomasson, K., Kent, D., & Coryell, W. (1991). Somatization and conversion disorders: comorbidity and demographic presentation. Acta Psychiatrica Scandinavica, 84, 288-293.

Tomori, M., & Zalar, B. (2000). Sport and physical activity as possible protective factors in relation to adolescent suicide attempts. International Journal of Sport Psychology, 31, 405-413.

Trull, T. J., & Sher, K. J. (1994). Relationship between the five-factor model of personality and Axis I disorders in a non-clinical sample. Journal of Abnormal Psychology, 103, 350-360.

Turner, S. M., Beidel, D. C., Borden, J. W., Stanley, M. A., & Jacob, R. G. (1991). Social phobia: axis I and II correlates. Journal of Abnormal Psychology, 100, 102-106.

Veijola, J., Jokelainen, J., Läksy, K., Kantojärvi, L., Kokkonen, P., Järvelin, M-R, & Joukamaa, M. (2003). The Hopkins Symptom Checklist-25 in screening DSM-III-R axis-I disorders. Nordic Journal of Psychiatry, 57, 119-123.

Velting, D. W. (1999a). Personality and negative expectancies: Trait structure of the Beck Hopelessness Scale. Personality and Individual Differences, 26,913-921.

Velting, D. W. (1999b). Suicidal ideation and the five-factor model of personality. Personality and Individual Differences, 27,943-952.

Vredenburg, K., Flett, G. L., & Krames, L. (1993). Analogue versus clinical depression: A critical reappraisal. Psychological Bulletin, 113, 327-344.

Watson, D., Clark, L. A., & Harkness, A. R. (1994). Structures of personality and their relevance to psychopathology. Journal of Abnormal Psychology, 103, 18-31.

Watson, D., Clark, L. A., & Tellegen, A. (1988), Development and validation of brief measures of positive and negative affect: The PANAS scales. Journal of Personality and Social Psychology, 54, 1063-1070.

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. Psychological Bulletin, 98, 219-235.

Weishaar, M. E., & Beck, A. T. (1990). Cognitive approaches to understanding and treating suicidal behavior. In S. J. Blumenthal, & D. J. Kupfer (Eds.), Suicide over the life cycle (pp. 469-498). London: American Psychiatric Press.

Weishaar, M. E., & Beck, A. T. (1992). Hopelessness and suicide. International Review of Psychiatry, 4, 177-184.

Weissman, A. N., & Beck, A. T. (1978). Development and validation of the Dysfunctional Attitudes Scale. Paper presented at the annual meeting of the Association for Advancement of Behavioral Therapy, Chicago.

Weissman, M. M., Bland, R. C., Canino, G. J., Greenwald, S., Hwu, H-G, Joyce, P. R., Karam, E. G., Lee, C-K, Lellouch, J., Lepine, J-P, Newman, S. C., Rubio-Stipec, M.,

Wells, J. E., Wickramaratne, P. J., Wittchen, H-U, Yeh, E-K. (1999). Prevalence of suicide ideation and suicide attempts in nine countries. Psychological Medicine, 29, 9-17.

Weissman, M. M., Klerman, G. L., Markowitz, J. S., & Ouellette, R. (1989). Suicide attempts in panic disorder and attacks. New England Journal of Medicine, 18, 1209-1214.

Welch, S. S. (2001). A review of the literature on the epidemiology of parasuicide in the general population. Psychiatric Services, 52, 368-375.

Wethington, E., & Kessler, R. C. (1986). Perceived support, received support, and adjustment to stressful life events. Journal of Health and Social Behavior, 27, 78-89.

Wetzel, R. D. (1976). Hopelessness, depression and suicide intent. Archives of General Psychiatry, 33, 1069-1073.

Wetzel, R. D., Margulies, T., Davis, R., & Karam, E. (1980). Hopelessness, depression, and suicide intent. Journal of Clinical Psychiatry, 41, 159-160.

Widiger, T. A., & Trull, T. J. (1992). Personality and psychopathology: An application of the five-factor model. Journal of Personality, 60, 363-394.

Wittchen, H.-U., & Essau, C. A. (1993). Comorbidity and mixed anxiety-depressive disorders: Is there epidemiologic evidence? Journal of Clinical Psychiatry, 54, 9-15.

Wittchen, H.-U., Essau, C. A., & Krieg, J.-C. (1991). Anxiety disorders: Similarities and differences of comorbidity in treated and untreated groups. British Journal of Psychiatry, 159, 23-33.

Woodruff, R. A., Clayton, P. J., & Guze, S. B. (1972). Suicide attempts and psychiatric diagnosis. Diseases of the Nervous System, 33, 617-621.

World Health Organization (2001). The World Health Report 2001. Mental Health: New Understanding, New Hope. Geneva: Author.

Zoccolillo, M., & Cloninger, C. R. (1986). Somatization disorder: Psychologic symptoms, social disability, and diagnosis. Comprehensive Psychiatry, 27, 65-73.

Papers I-VI