CHAPTER I
CHAPTER I
INTRODUCTION

Suicide ideation, threatened suicide, attempted suicide and completed suicide are tragic and painful events both for the individuals who engage in the behaviour as well as for their significant others. Repetition of attempted suicide is not uncommon, and the risk for completed suicide is elevated among suicide attempters. In accordance with the general postulate that “the best predictor of future behaviour is past behaviour” it has been found that a suicide attempt is one of the most powerful risk factors for completed suicide (Park, 2013; Retterstol & Mehlum, 2001; Leon, Friedman, Sweeney, Brown, & Mann, 1990; Van Egmond & Diekstra, 1990; Barraclough, 1987).

The concept “suicidality” refers to thoughts and plans of suicide, suicide attempts and completed suicide, and thus comprises a wide range of phenomena. A concept synonymous to “suicidality” is “suicidal behaviour” (which thus not only refers to acts but also to thoughts). “Suicidal ideation” refers to suicidality without action, i.e. all types of suicidal thoughts and plans. A “suicide attempt” not only refers to an unsuccessful suicide but also comprises deliberate acts of lower lethality and intention. Several definitions have been proposed over the years to define a suicide attempt. Definitions have been broadened over the years to include acts of lesser lethality and intent but at the same time to distinguish a suicide attempt from other forms of more habitual self-destructive behaviours such as drinking or deliberate, repeated self-mutilation (e.g. superficial cutting, cigarette burning) with no intent or risk of dying involved (Skogman, 2006).

Another concept which has been increasingly used over the last years is “parasuicide”, which is defined as “an act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of prescribed or generally recognized therapeutic dosage, and which is aimed at realizing changes which the individual desired via the actual or the expected physical consequences” (Consoli et al., 2013; Platt et al., 1992).

The International Classification of Diseases (2005), which also classifies causes of death, distinguishes between ascertained suicide and “uncertain suicide”.
The term “uncertain suicide” is used when there is uncertainty whether the act was intentional (suicide) or unintentional (accident). The majority of uncertain suicides concern cases of self-poisoning. The statistics describing the overall suicide rates generally include both uncertain and ascertained suicides, as a substantial part of them are believed to be suicides. Through so-called psychological autopsies 70-75% of uncertain suicides have been rated as suicides. Further, there is a substantial number of unrecorded cases of suicide among elderly whose suicides sometimes are mistaken for natural deaths (due to somatic illness) and among victims of road accidents. Balancing for these cases is another reason for including also uncertain suicides in the overall suicide rates (National Centre for Suicide Research and Prevention of Mental Ill-Health, 2005). In individual studies aimed at determining risk factors for suicide it is however more questionable whether uncertain suicides should be included or not.

According to Michel and Valach (2001) the “suicidal process” refers to the development of suicidality over time, starting with suicide ideation. Often the process is described as to consisting of suicide ideation, more specific suicide plans, and suicide acts: attempted and completed suicide. The description of the suicidal process gives a deterministic impression which is quite misleading, as the process only in a few percent of cases will proceed all the way to completed suicide. Suicide ideation has been reported to be common, and a recent study approximated an annual incidence of 2.3% in the general population. However, fewer than 1 in 200 people who experience suicidal thoughts go on to complete suicide (Gunnell, Harbord, Singleton, Jenkins, & Lewis, 2004). Another potentially misleading feature of the concept of the suicidal process is that it hints a linear development of a successively increasing suicidality before a suicidal act. However, there is no evidence for this. It has been suggested that the process may decrease, reappear and fluctuate repeatedly over time (Beskow, 2000). Psychological autopsies of completed suicide have suggested that the length of the suicidal process usually is extended over months, but that it may vary from minutes and hours to years and decades (Runeson, Beskow, & Waern, 1996).

Models of Suicidality

The views on suicidality have differed throughout the history of mankind. The attitude has changed on the range between condemnation and acceptance in different times and cultures. It has been noted, as an overall trend, that perspectives on
suicidality have changed from an outside and rejecting perspective towards an increasing understanding of the suicidal person (Beskow, Beskow Palm, & Ehnvall, 2005).

**Moral Perspective**

During ancient time, the Greeks considered suicide as an acceptable way to avoid humiliation, arrest and death from other causes, but under other circumstances condemned suicide. The Romans similarly permitted suicide under certain circumstances but only for the upper classes (Bradvik, 2000). With Christianity, the theological model came to dominate the view on suicidality. This model regarded suicide as a defiance of God - a deadly sin - and served society by keeping the suicide rate down through bans and prohibition. Beskow and co-workers (2005) suggest that this model of suicidality, although obsolete, still influences people through a remaining sense of taboo concerning suicidality.

On the basis of above description, it could be observed that existential-philosophical perspective includes a moral perspective, through which questions like suicide is right or wrong, courageous or cowardly, have been discussed. It also addresses questions such as whether rational suicide exists, and discussed this in relation to values such as autonomy, creativity and love (Corey, 2013).

**Sociological Perspective**

More than a century ago the French sociologist Emile Durkheim proposed a sociological explanation of suicide. According to this theory, suicide reflects the state of society rather than the state of the individual. Durkheim suggested that the suicide could be triggered by the society on the one hand in situations when individuals loosen the bonds that previously tied them to society or when the normative regulations fail to guide human beings, and on the other hand, in situations when the regulation of the society is too excessive and the regulation of the individuals is too strong (Jones, 1986).

**Psycho-Social Perspective**

In between the sociological and psychological perspectives, the psycho-social perspective has put focus onto the importance of external stressors as risk factors for suicidal behaviour. Examples of external stressors are living alone, unemployment
and having a weak social supportive network. Negative life events such as sexual and physical abuse, bullying and separation through divorce or death have also been emphasized in research from this perspective (Cottler et al., 2005).

Most of the previous studies examined the relationship between recent life events and suicide have focused on both suicide and living control on psychiatric patients, indicating recent life event as a precipitating factor for suicidal behaviour (Heikkinen et al., 1994). In addition to recent life events, family history of suicidal behaviour especially first degree relative suicide and poor parenting may precipitate suicide more often with psychopathology (Cheng, Chen, Chen, & Jenkins, 2000).

**Psychiatric Perspective**

From the psychiatric perspective suicidality has been viewed as a symptom of psychopathology. The model was suggested already in the days of the Roman Empire by Galenos who argued that self-destructive behaviour could be a component of mental illness such as melancholia. The view of suicide as a sign of mental illness contrasts with the theological model of suicide as a sin. As a reflection of this, it can be noted that in the 13th century in Europe where it was forbidden to bury self-killer in cemeteries, exceptions were made for “lunatics” (Bradvik, 2000). It was, however, not until the second half of the 20th century that the psychiatric model of suicidality came to be the dominating one.

The links between psychiatric disorders and suicidality have in turn been explained from different perspectives. From the psychological perspective, dimensions such as hopelessness have been emphasised, and from the biological perspective it has for instance been suggested that a dysfunction of the serotonergic system is the cause of characteristics such as anger and impulsivity, which in turn mediate the relationship between psychiatric disorders and suicidality (Mann, Waternaux, Haas, & Malone, 1999).

Psychological theory and research has provided several models for understanding suicidality. Freud (1917) theorised that suicidality arises if anger towards a lost object cannot be expressed, as the anger then is transformed into self-censure and a wish to harm one-self.

It has been found that more than 90% of suicide attempters as well as suicide victims suffer from a psychiatric disorder at the time of the suicidal act (Haw, Hawton, Houston, & Townsend, 2001; Isometsa et al., 1995), and major depression
has been pointed as the most influential psychiatric disorder in relation to suicidality (Wasserman, 2001; Isometsa et al., 1995). Beskow and colleague (2005) state that the psychiatric model has contributed to suicide prevention by providing a basis for diagnostics and treatment of depressive syndromes, but also criticise this model for taking on an outside perspective with elements of determinism and some remains of tabooing.

**Cry of Pain Model**

Another model, which is a common view of suicidality in general population, views suicidality as a cry for help, which is based on the recognition of the communicative aspects that may be present in the suicidal acts.

Shifting emphasis away from the communicative aspect, Shneidman (1993; 1998) explained suicide as “psycheache”: that the wish to stop psychological pain through reaching unconsciousness is the immediate motivation of suicidal acts.

From a more cognitive approach, Williams (1997) proposed the “cry of pain” model which sees suicidal acts as attempts to escape from perceived entrapment. With this model as a starting point Williams and Pollock (2001) presented the psychological dimensions of the suicidal process in a hypothetical model in which “arrested flight” is a central mechanism. It is suggested that a combination of three factors is needed to elicit the suicidal behaviour: 1) stresses (especially defeat/rejection), 2) inability to see a way of escaping, 3) perceiving “rescue” (primarily by means of social support) as unlikely. It is suggested that when all of these factors are present a biologically mediated “helplessness script” is activated, and served to support suicidal impulses. It is proposed that the psychological mechanisms that contribute to this “arrested flight” reaction involve attention, memory and judgment: suicidal individuals seem to be hypersensitive to stimuli signalling defeat and rejection (attention bias). Further, suicidal individuals have been found to have difficulties in retrieving specific memories, which have been suggested to impair their problem-solving capacity (one needs to have access to the “database” made up of past experiences for hints on how to deal with a new situation). These problem-solving difficulties are hypothesised to contribute to a feeling of being trapped in face of difficulties. It is proposed that hopelessness—the perception rescue is impossible—is caused by difficulties to think of positive things that might happen in the future (rather than anticipating an excess of negative events). It is further assumed that personality
variables (genetically determined temperament and environmentally formed character) play a role in how easily a person will respond with an “arrested flight” reaction. Finally, it is proposed that whether an individual finally acts on a suicidal impulse or not is influenced by a numbers of circumstances, such as availability of methods and display of suicidality in the vicinity of the individual or in media.

**Biological Perspective**

During the 20th century there was quite a pronounced rivalry between explanations which focused primarily on environmental causality (i.e. psychological and social explanations) and biological explanations emphasising genetic causality. In recent years, new knowledge has however changed this picture. We now know that neurons can regenerate in the human adult brain (Eriksson et al., 1998). Brain structures that shrink when a person is depressed, such as the hippocampus, can regenerate in response to treatment with antidepressants (SSRI’s) or ECT- but also in response to physical exercise (Van Praag, Christie, Sejnowski, & Gage, 1999) and mental stimulation such as spatial learning (Ambrogini et al., 2000; Gould, Tanapat, Hastings, & Shors, 1999). Biological changes can thus be induced also by external stimuli. Further, it is now known that genetic expression is controlled by complex mechanisms that include environmental influence (Gabbard, 2000; Kandel, 1998). The genetic code will thus not alone determine the outcome.

To put it down in one sentence, all human activities, including mental activities such as thoughts and feelings, are mediated by biological processes, which in turn are influenced both by genetic and environmental factors. This two-way communication between genes and environment opens up for an integration of different perspectives, such as the biological, social and psychological ones.

Today, there is a general consensus in suicide research and clinical psychiatry that stress-diathesis models are an appropriate way of explaining suicidality, i.e. that both predisposition and external stressors are needed to elicit suicidal behaviours. Integrating findings from different research perspectives, Van Heeringen (2001) proposed one such stress-diathesis model of suicidal behaviour.

**Cognitive Perspective**

Cognitive perspective refers to the influence of depression and hopelessness on suicide ideation.
Depression and Suicide Ideation

Depression is considered as a serious mental health problem that can affect people of all ages, including children and adolescents. Generally, depression is defined as a persistent experience of a sad or irritable mood as well as anhedonia, a loss of the ability to experience pleasure in nearly all activities. It also includes a range of other symptoms such as change in appetite, disrupted sleep patterns, increased or diminished activity level, impaired attention and concentration, and markedly decreased feelings of self-worth. It changes the way the person feels, thinks, and acts and is not a personal weakness or a character flaw. Children and youth with depression cannot just snap out of it on their own. If left untreated, depression can lead to school failure, conduct disorder and delinquency, anorexia and bulimia, school phobia, panic attacks, substance abuse, or even suicide (Ralph, 2004).

Across numerous studies, five psychological constructs have consistently been associated with suicide: impulsivity/aggression, depression, anxiety, hopelessness, and self-consciousness/social disengagement (Conner, Duberstein, Conwell, Seidlitz, & Caine, 2001). Most of these are consistent with the bargaining model in obvious ways.

Depression and other mental health disorders are a significant public health problem on college campuses (Mackenzie et al., 2011). Many students experience their first psychiatric episode while at college, and 12%-18% of students have a diagnosable mental illness (Mowbray et al., 2006). Epidemiological studies suggest that the 15-21 age category (typical college years) has the highest past-year prevalence rate of mental illness at 39%. Eisenberg, Gollust, Golberstein, and Hefner (2007) reported that the general prevalence of depression and anxiety is 16% among undergraduate students and 13% among graduate students. Based on findings from the American College Health Association (ACHA) and National College Health Assessment (NCHA), the rates of students reporting having been diagnosed with depression have increased from 10% in 2000 to 18% in 2008 (2000, 2008). A number of factors contribute to the initial presentation of depression during college. The transition itself from home to college places additional life stressors on young adults as they explore their identity, strive to master new skills, are away from established social support systems, and have increased time demands (Dyson & Renk, 2006).

The consequences of depression are significant. Depression has long been associated with academic impairment (Heiligenstein, Guenther, Hsu, & Herman,
Depression and anxiety are consistently listed among the top 10 factors impairing academic performance in the past 12 months on the NCHA (ACHA, 2008). Diagnosed depression was associated with a 0.49 decrease in student GPA, and treatment was associated with a 0.44 protective effect (Hysenbegasi, Hass, & Rowland, 2005). Depression may also lead to increased risk of self-injury, dropping out of or failing college, attempting or committing suicide, and other risky behaviours (Gollust, Eisenberg, & Golberstein, 2008; Kisch, Leino, & Silverman, 2005). In addition, there is an association between feeling functionally impaired by depression in the past 12 months and accumulation of credit card debt among students (Adams & Moore, 2007). Psychiatric disorders and depressive symptoms have been associated with tobacco use, alcohol consumption, physical inactivity, and partner violence (physical, psychological, or sexual victimization: Sabina & Straus, 2008; Strine et al., 2008).

Depression and suicidality are deeply intertwined (Table 1). Suicidality is a diagnostic symptom for major depression (Table 1), and depression is the most common mental disorder leading to suicide, although substance abuse and schizophrenia are also major contributors (WHO, 2001). A successful theory of depression must explain suicidality, and the bargaining model, building on the work of Giddens (1964), Brown (1986), and Watson and Andrews (2002).

Table 1
The Close Association of Depression and Suicide

<table>
<thead>
<tr>
<th>Percent of suicide who had a mood disorder*</th>
<th>60%</th>
<th>NIMH (2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of severely depressed (inpatient population treated for depression) who commit suicide</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Percent of less severely depressed (mixed inpatient/ outpatient population treated for depression) who commit suicide</td>
<td>2.2%</td>
<td>Bostwick and Pankratz (2000)</td>
</tr>
<tr>
<td>Percent of those treated for nondepression illness who commit suicide</td>
<td>&lt; 0.5%</td>
<td></td>
</tr>
</tbody>
</table>

*Major depression, bipolar disorder, dysthymia.
Suicide permanently removes oneself as a source of valuable benefits for the group. Suicide threats are therefore threats to impose substantial costs on group members and can be viewed as a means to signal cheaply and efficiently to a large social group that it may suffer such costs if assistance or change is not forthcoming.

Depression has consistently been considered a risk factor in suicide, along with substance abuse, adverse life events, family history, a history of sexual abuse, troubled relationships, and difficulties with sexual identity (Agerbo, Nordentoft, & Mortensen, 2002; Cooper, Appleby, & Amos, 2002; Garlow, 2002; Nemeroff, Comptom, & Berger, 2001). The NCHA reveals that 6.1% of female and 6.4% of male respondents have seriously considered suicide in the past year, and 1.2% of female and 1.5% of male respondents have seriously considered suicide in the past 2 weeks (ACHA, 2008). A study by Garlow, Rosenberg and Moore (2008) of suicidal ideation and depression among college students found that 11% of students endorsed current (past 4 weeks) suicidal ideation. The same study found suicidal ideation to be associated with screening positive for depression on the Patient Health Questionnaire-9.

Thus, in addition to depression, substance use disorders are regarded as major risk factors for suicidal behaviour in both clinical and community populations (Wu, Hoven, Liu, Cohen, Fuller, & Shaffer, 2004; Dhossche, Meloukheia, & Chakravorty, 2000; Bukstein et al., 1993). In college students, drug and alcohol abuse has been linked to both suicide ideation and suicide attempts (Brener, Hassan, & Barrios, 1999; Levy & Deykin, 1989), especially for men. While both drug abuse and suicide ideation might be components of a larger cluster of risk-taking behaviours (Barrios, Everett, Simon, & Brener, 2000; Jessor, Donovan, & Costa, 1991; Rivinus, 1990), others have suggested that the link between drug use and suicidal behaviour is more direct, hypothesizing that the intoxicating effects of drug use might lead to impairments in judgment or changes in mood which then increase risk for suicide ideation and attempt (Bukstein et al., 1993). Additional alcohol-specific effects have been implicated in suicidal behaviour include disinhibition and emotional problems such as dysphoria, impulsivity, and aggression (O’Connell & Lawlor, 2005).

Suicide attempts are necessary to underwrite the credibility of suicide threats and must therefore entail a genuine risk of serious injury or death. Failed attempts resulting in injury can still impose costs on group members and indicate the seriousness of future attempts. Completed suicides are the cost of maintaining a
credible threat. A suicidal signaling/bargaining strategy could evolve if it involved warning others beforehand (allowing them to respond to the suicidal person’s needs), if the rate of threats were much higher than the rate of attempts, and if the rates of attempts were much higher than the rate of completions. Under these circumstances, the average benefits received over many generations by genes coding for this strategy, when group members were successfully influenced, could exceed the average costs suffered by those genes when suicide attempts succeeded.

**Hopelessness and Suicide Ideation**

Hopelessness appears to be largely a cognitive variable though because it is a thought and an appraisal about one’s conditions and life circumstances. Hopelessness may occur most often in conjunction with a variety of affective and emotional states, like despair and depression, but hopelessness itself is a cognitive variable.

Hopelessness is characterized as a belief that life conditions will not improve, and this belief itself is a predictor of eventual suicide among suicidal ideators (Freeman & Reinecke, 1993; Weishaar & Beck, 1990; Cole, 1989; Beck, Steer, Kovacs, & Garrison, 1985). In some studies and literature, hopelessness is referred to as an affective and emotional state. The relationship between hopelessness and suicidal behaviours, especially suicide ideation is well supported and documented in a variety of samples, including those with depression (Beevers & Miller, 2004), schizophrenia (Kim, Jayathilake, & Meltzer, 2003; Nordentoft et al., 2002), and bipolar disorder (Newman, Leahy, Beck, Reilly-Harrington, & Gyulai, 2002); college students (Abramson et al., 1998; D’Zurilla, Chang, Nottingham, & Faccini, 1998); psychiatric inpatients (Beevers & Miller, 2004; Beck, Brown, & Steer, 1989; Beck, Steer, Kovacs, & Garrison, 1985); and prisoners (Holden & Kroner, 2003; Holden, Mendonca, & Serin, 1989). This list is not intended to be a comprehensive list of the populations or research that exists to support empirically the correlation between hopelessness and a variety of suicidal behaviours, but it is evident from the extent of this research that hopelessness is an important variable in understanding suicide.

Several attempts have been made to theoretically explain the relationship between hopelessness and suicide, including the hopelessness theory of suicidality (Abramson, Metalsky, & Alloy, 1989), Beck’s theory of depression and suicide (1987), and the diathesis-stress-hopelessness model (Schotte & Clum, 1982, 1987). Both the hopelessness theory of suicidality and Beck’s theory (1987) hypothesize that
a set of particular cognitive vulnerabilities lead to suicide, and this relationship is mediated by hopelessness. The cognitive vulnerabilities are slightly different in each theory: a depressogenic-inferential style in the hopelessness theory, and negative self-schema and dysfunctional attitudes in Beck’s theory. According to the hopelessness theory, those with a depressogenic-inferential style attribute negative life events to stable and global causes, believe that negative outcomes will follow from these negative life events, and the negative events will mean that they are worthless. These individuals are susceptible to developing hopelessness when they are faced with negative life events, and suicidality is a symptom of this hopelessness. In other words, according to the hopelessness theory, those with a depressogenic/negative style of inference will be at risk for suicide, and this risk is mediated by hopelessness (Abramson et al., 1998). Beck’s theory of depression (1987) states that negative self-schema (i.e., personal inadequacy, failure and worthlessness) results in vulnerability to depression. These negative thoughts are believed to develop into hopelessness, low self-esteem and depression when encountering negative life events, and due to this vulnerability to hopelessness, the individual is at an increased risk for suicide. Similar to the hopelessness theory, Beck also believed that cognitive vulnerability is a risk for suicide, and this risk is mediated by hopelessness.

The majority of the research conducted on the relationship between cognitive vulnerabilities and suicide supports the hypothesis of these two theories that hopelessness mediates the relationship (Beevers & Miller, 2004; Weishaar & Beck, 1990; Beck, Kovacs, & Weissman, 1975). One specific example of this support can be seen in a longitudinal study of college students (Abramson et al., 1998). Participants were screened for cognitive vulnerabilities, and those scoring in the highest quartile on measures of cognitive vulnerability (i.e., attributional style, dysfunctional attitudes) were selected for a High-Risk (HR) group, and those in the lowest quartile were selected for a Low-Risk (LR) group. Participants were followed for two and a half years, and findings at follow up were consistent with predictions based upon the hopelessness theory and Beck’s theory. The HR group demonstrated higher levels of suicidality than the LR group during the follow up period. In addition, the hypothesis that hopelessness mediated the relationship between cognitive vulnerability and suicide was supported, and other risk factors, like past history of suicidal behaviours, personality disorders, or history of depressive disorders, did not mediate this relationship.
The diathesis-stress-hopelessness model explores the relationship between problem-solving abilities, hopelessness and suicide. The ability to solve problems interacts with negative life stress to predict hopelessness, so the relationship between problem-solving abilities and suicide also may be linked by hopelessness in this model (Bonner & Rich, 1988).

Additional empirical support for the importance of hopelessness exists that is not linked to these theories. Hopelessness continues to predict suicidality after controlling for a variety of other predictors, including psychiatric diagnosis (Conner, Duberstein, Conwell, Seidlitz, & Caine, 2001), depressed mood (Abramson et al., 1998; Weishaar & Beck, 1990; Bonner & Rich, 1988), and past suicidality (Abramson et al., 1998). Based upon the empirical support of these theories of hopelessness and suicide and the additional research testing the nature of the relationship between these two variables, it can be concluded that hopelessness is a key variable in understanding suicidality.

**Anxiety and Suicide Ideation**

Anxiety is an unpleasant state of inner turmoil, often accompanied by nervous behaviour, such as pacing back and forth, somatic complaints and rumination. It is the subjectively unpleasant feeling of insecurity over something unlikely to happen in the near future. The famous philosopher, Soren Kierkegaard, in *The Concept of Anxiety*, described anxiety or dread associated with the "dizziness of freedom" and suggested the possibility for positive resolution of anxiety through the self-conscious exercise of responsibility and choosing. In *Art and Artist* (1932), the psychologist Otto Rank wrote that the psychological trauma of birth was the pre-eminent human symbol of existential anxiety and encompasses the creative person's simultaneous fear of and desire for-separation, individuation and differentiation.

Anxiety disorders are the most common mental illnesses in America. They affect as many as one in 10 young people. Unfortunately, these disorders are often difficult to recognize, and many who suffer from them are either too ashamed to seek help or they fail to realize that these disorders can be treated effectively. There are some common anxiety disorders like generalized anxiety disorder, panic disorder, obsessive and compulsive disorder, post traumatic stress disorder, phobia and so on. Anxiety affects people of all races and ages without discriminating gender and socioeconomic status.
Some of the major anxiety disorders like Panic disorder, generalized anxiety disorder, phobias and obsessive-compulsive disorder are more consistent to run in the families. It is seen that panic disorder is more prevalent anxiety disorder. The major source of familial risk is genetic factors. It is supported by two large-scale twin studies of panic disorder and generalized anxiety disorder and one of phobias. Since we know of no adoption studies on anxiety disorders, twin studies are the only available means of differentiating potential genetic versus common familial environmental etiologies for their familial aggregation. The models used to proportion the variance in liability into either genetic or familial environmental sources are based on the assumption that greater intrapair resemblance of monozygotic versus dizygotic twins for a phenotype is due to their greater genetic resemblance rather than any greater similarity of their environment, also known as the equal-environments assumption (Hettema, Neale, & Kendler, 2001).

According to Sareen, Houlahan, Cox, and Asmundson (2005), among the anxiety disorders examined in the National Comorbidity Survey (NCS), PTSD was the only anxiety disorder that was significantly associated with suicidal ideation and suicide attempts after accounting for a wide range of other sociodemographic and psychiatric covariates, including the presence of multiple comorbid disorders. These findings, in combination with other data in the literature, suggest that PTSD is a severe and disabling disorder that may place affected individuals at increased risk for a number of negative outcomes and eventual suicidal behaviour.

**Affective Dysregulation and Suicide Ideation**

Another potential contributory factor for suicide ideation among college students is affective dysregulation (Plattner et al., 2007). Affective dysregulation is marked by an inability to regulate emotions appropriately and susceptibility to irritability and negative affect (Mezzich, Tarter, Giancola, & Kirisci, 2001). This construct has been linked to a number of externalizing behaviours in youth, such as drug and alcohol abuse (Tarter, Kirisci, Habeyh, Reynolds, & Vanyukov, 2004), delinquency (Plattner et al., 2007), risky sexual behaviours, and violence (Mezzich et al., 1997). According to Plattner et al. (2007), in stressful situations, affectively dysregulated individuals experience a confluence of negative emotions (i.e., fear, sadness and anger) in a way that causes them to react in an overly aggressive manner. A few prior studies suggest an association between affective dysregulation and
suicide risk (Tarter, Kirisci, Reynolds, & Mezzich, 2004; Mezzich et al., 1997). However, most prior research on affective dysregulation has focused on adolescents, especially delinquent and clinical populations, and therefore little is known about the correlates of affective dysregulation among college students or young adults in general.

**Family Environment and Suicide Ideation**

Family environment plays an important role in the etiology and treatment of adolescent suicidal ideation and behaviour. Research has shown that when family processes are disturbed, there is an increased risk of adolescent suicidal ideation and suicide attempts (Pfeffer, 1989). Family therapy is a recommended treatment modality for suicidal adolescents (Berman & Jobes, 1992; Richman, 1986). Unfortunately, research examining the relationship between family environment and adolescent suicidal behaviour has been limited. As a result, the specific dimensions of family environment that are risk factor for adolescent suicidal ideation and suicide attempts have not been clearly identified. Furthermore, the extent to which family functioning contributes to the risk of suicidal behaviour among adolescents has not been empirically determined.

Both parent-adolescent relationships and the environment of family systems have been examined in relation to adolescent suicidal behaviour. Adolescents’ perceptions of parent-child communication are related to suicide proneness in adolescents (Stivers, 1988). If adolescents perceive emotional disparity between themselves and their parents, the risk of suicidal ideation on the part of the adolescents is increased (Dukes & Lorch, 1989). Thus, parent-adolescent relationships are related to suicidal tendencies among adolescents. However, many dimensions of parent-adolescent relationships remain unexamined in relation to the risk of adolescent suicidal behaviour.

On a family systems level of analysis, suicidal ideation in community adolescents is related to various dimensions of family environment (Meneese & Yutzenka, 1990; Friedrich, Reams, & Jacobs, 1982). Community adolescents admitting to suicidal ideation perceived their families as having high levels of conflict and poor communication, discouraging independence and achievement, and lacking in organization. Furthermore, the severity of suicidal ideation reported is related to level of family dysfunction perceived by the adolescents (King, Segal, & Naylor, 1992).
Adolescent suicide attempts are also related to the functioning of the family as a system. Adolescent suicide attempters are more likely than non-attempters to come from chaotic families (Paluszny, Davenport, & Kim, 1991). In psychiatric inpatient populations, adolescents who have attempted suicide perceive their families as more poorly adjusted than do adolescents who have not attempted suicide (Topol & Reznikof, 1982). Mood disordered adolescents who have attempted suicide, rate their families lower on global functioning and affective responsiveness than do mood-disordered adolescents who have not attempted suicide (King et al., 1992). Furthermore, the seriousness of suicidal intent among adolescent suicide attempters is related to the degree of family dysfunctions reported by the adolescents (Miller, King, Shain, & Naylor, 1992; Brent, Kolko, Allan, & Brown, 1990). Thus, the risk of adolescent suicide attempts and suicidal ideation is increased with perceived family dysfunctional environment.

The results of few studies support clinical impressions (Orbach, 1989; Richman, 1986) and research findings (Pfeffer, 1989) that family environment is an important variable to consider in the study and treatment of adolescent suicidal behaviour. Inpatient suicide attempters resembled high school suicide ideators, whereas nonsuicidal inpatients resembled nonsuicidal students in their perceptions of family environment. Compared with nonsuicidal high school students, the suicide ideators and attempters reported more dysfunction on four dimensions of perceived family environment and on five dimensions of perceived mother-adolescent relationships. Thus, suicidal adolescents differed from the nonsuicidal community adolescents in their perceptions of family environment. However, nonsuicidal psychiatric inpatients did not differ from nonsuicidal community adolescents in their perceptions of family environment.

On a family systems level, suicidal adolescents perceived more problems than did nonsuicidal adolescents on several dimensions of family environment. The suicidal adolescents perceived their family as having trouble adapting to change, poor at problem-solving, and prone to crisis. They described their families as having insufficient, ineffective, or confusing communication. They described families with power struggles and ineffective methods of control. Family members were perceived as emotionally disengaged or family relationships were characterized as enmeshed.

Previous studies using different measures of family environment have also found that suicidal adolescents describe their families as lacking the ability to adapt to
change (Miller et al., 1992) and lacking effective problem-solving strategies (King et al., 1992). In previous studies, suicidal adolescents have reported poor family communication (King et al., 1992; Meneese & Yutrzenka, 1990) and disengagement between family members (Miller et al., 1992). Thus, based on current and previous findings, an increased risk of adolescent suicidal behaviour is related to perceived family environment that does not serve to resolve problems and is characterized by poor communication, power struggles, and a lack of emotional attachment.

Valenstein et al. (2012) adolescents who reported past-month suicidal ideation (7%) had parents who reported suicidal ideation, psychological inflexibility and use of avoidance coping. Adolescents experiencing suicidal ideation were more likely to be unemployed and more depressed, consumed more alcohol and had more drinking problems. Family discord and negative relationship with parents were associated with an increased suicide risk in depressed adolescents. So it appears essential to take intrafamilial relationships into account in depressed adolescents to prevent suicidal behaviours (Consoli et al., 2013).

Cognitive Rigidity and Suicide Ideation

Those who are suicidal also may present with cognitive rigidity and dichotomous, or all-or-nothing, thinking (Weishaar, 2000; Shneidman, 1996; Bonner & Rich, 1988; Ellis, 1986; Neuringer & Lettieri, 1971). Dichotomous thinking has been conceptualized as a form of cognitive rigidity (Weishaar, 2000). These two constructs are involved in the problem-solving process, as rigid thoughts and dichotomous thinking impair abilities to form alternative solutions, and deficits in these two domains may account for the noted problem-solving difficulties in suicidal people (Ellis, 1986). As individuals become increasingly upset, they begin to move into more and more rigid dichotomous thinking and eventually view suicide as the only option to escape their subjective pain (Shneidman, 1987). This becomes a vicious cycle as cognitive rigidity and dichotomous thinking deficits lead to poor problem solving and associated distress, and the distress exacerbates the rigid and dichotomous thinking.

There is empirical support that cognitive rigidity and dichotomous thinking play a role in suicidal thoughts and behaviours. Individuals in a high suicide-risk group evaluated life and death more extremely and displayed more dichotomous thinking in comparison to those with lower risk (Neuringer & Lettieri, 1971). In a
different study, suicidal adolescents continued to use ineffective problem-solving strategies even after more effective strategies were presented, indicating higher levels of rigidity and its importance in problem-solving deficits (Levenson & Neuringer, 1971). These two studies support the fact that rigidity and dichotomous thinking are two additional cognitive factors or causes for suicidal thoughts and behaviours.

Several other cognitive variables are related to suicidality, including a variety of cognitive distortions and the construction of meaning. Most of the cognitive factors related to suicide that already have been discussed can be characterized as cognitive distortions, including hopelessness, rigidity and dichotomous thinking. Negative automatic thoughts, catastrophizing, self-blame, overgeneralization, selective abstraction or confirmatory bias, and personalization are several additional cognitive distortions that are believed to be related to suicidal thoughts and behaviours (Freeman & Reinecke, 1993). These cognitive distortions have a potentially negative impact because they may contribute to significant emotional problems, including depression, and this may be related to suicidal thoughts and behaviours (Freeman & Reinecke, 1993).

The literature on suicide attempters reported evidence of cognitive rigidity in suicide attempters (Patsiokas, Clum, & Luscomb, 1979; Levenson & Neuringer, 1971; Neuringer, 1964). Perrah and Wichman (2010) administered scales of cognitive rigidity on persons who have attempted suicide but well pass the crisis period and found these persons are less rigid than attempters from previous studies on the Rokeach Map Test ($p < .05$) and the Alternate Uses Test ($p < .001$). It is consistent that suicidality of more often with individual who are cognitively rigid and less flexible in their current circumstances.

Another important variable in understanding suicide is problem solving. The ability to solve problems is a well-documented cognitive process that is related to suicide. Suicidal individuals demonstrate limited abilities in finding solutions to interpersonal problems (MacLeod, Williams, & Linehan, 2000; Weishaar & Beck, 1990; Schotte & Clum, 1982, 1987; Linehan, 1981). Their weak problem-solving skills result in a lack of personal resources that are needed when experiencing strong negative feelings (Westefeld et al., 2000). Those with poor interpersonal problem solving may consider or opt for suicide as an attempt to solve their problems or to get rid of their problems rather than to attempt to manage them. Suicidal behaviour may serve the purpose of seeking a solution, so suicide may be a problem-solving
behaviour and may seem to be the only available answer to the individual (Shneidman, 1992).

One model that examines the importance of actual problem solving in suicidal behaviour is the previously mentioned diathesis-stress-hopelessness model (Schotte & Clum, 1982, 1987). Based upon this model, those with poor problem-solving abilities are unable to develop alternative solutions for coping, and this is related to increased hopelessness when they are exposed to naturally occurring negative life stress. As discussed previously, hopelessness is one of the best predictors of suicidal behaviour, so this increased level of hopelessness places those with poor problem-solving at an increased risk for suicidal thoughts and behaviours. Empirical support exists for this model; for example, in a study of college students with suicidal ideation, the interaction of poor problem-solving ability and increased negative life stress was related to hopelessness and suicide intent using the Means-Ends Problem Solving Procedure (MEPS) (Schotte & Clum, 1982). In a different study of inpatients with suicidal ideation and/or suicidal behaviours and non-suicidal inpatients, suicidal individuals demonstrated lower problem-solving abilities and higher levels of life stress than did the non-suicidal controls. As their levels of life stress increased, there was also an increase in hopelessness and suicidal intent (Schotte & Clum, 1987).

Another study also examined the problem-solving skills in those with parasuicide and suicidal ideation. Linehan and colleagues (Linehan et al., 1987) used an abbreviated version of the MEPS to compare the interpersonal problem solving abilities of psychiatric inpatients with current serious suicidal ideation, psychiatric inpatients admitted for current parasuicidal act and a nonsuicidal inpatient psychiatric and nonpsychiatric (medical) control group. This scale measured both active and passive (e.g., allowing someone else to solve problems) strategies. They predicted that those in the suicidal groups would demonstrate more passive and less active problem-solving strategies.

These findings were supported by Pollock and Williams (2004) who likewise concluded that suicide attempters displayed poorer problem-solving abilities, but not more passive ones, than a psychiatric control group. The data from these studies suggest that there is a connection between actual problem-solving abilities and suicidal behaviours.
Overview

1. In the field of suicidology, there are many different definitions of suicide and multiple ways to classify the various types of suicidal behaviour. The definition of suicide is not only a mental health issue, but also a legal matter. The general consensus among mental health and legal experts is that a death can be defined as a suicide when the individual dies from self-inflicted injuries and the individual intended to die from these self-inflicted actions (American Psychiatric Association, 2003; Maris, Berman, & Silverman, 2000). The term ‘suicidal behaviour’ refers to a wide variety of behaviours and includes more than killing oneself. Suicidal behaviour may refer to different concepts including completed suicide, non-fatal deliberate self-harm with or without intent to die, suicide communications including suicide threats, and/or suicide thoughts/ideation.

2. In general, suicidal ideation is defined as “thoughts of serving as the agent of one’s own death” (American Psychiatric Association, 2003; p. 3). Suicidal ideation or thoughts range from milder forms that involve general thoughts about death (e.g., believing that it would be easier to be dead) and suicide (e.g., reactions of others if suicide were attempted) to more serious ideation that involves current plans and/or wishes to die by suicide (Reynolds, 1991). The prevalence of suicidal ideation is estimated to range from approximately 30% to 70% (Kann et al., 1998; Rudd, 1989; Rich & Bonner, 1987) depending upon the research methods used and the population that is sampled.

3. All of these phenomena are usually classified as “suicidal behaviours” in the literature, even though the individual did not die or even take any action in many instances. However, the term behaviour is defined as any observable response by an organism (Weiten & Lloyd, 2003) and cognition is characterized as an internal mental process (Zajonc, 1984). In order to be more consistent with the definitions of cognition and behaviour, suicidal behaviours from this point will refer to actions taken (i.e., suicide attempts), while suicidal cognitions will refer to mental processes focusing upon ending one’s own life. Suicidality is a general term that will refer to all types of suicidal thoughts and behaviours.

4. Not only are there a variety of types of suicidal behaviour, individuals who engage in suicidal behaviours represent a diverse and heterogeneous group.
Suicidal individuals are represented across the life cycle, various psychological/psychiatric diagnoses (e.g., mood disorders, drug and alcohol problems, personality disorders and schizophrenia), demographic groups (Westefeld et al., 2000) and physical health concerns (Maltsberger, 2001). Risk factors for suicidality derived through previous research include, among others, illness, pain, loss, psychiatric illness, previous attempts, sexual orientation, and age (Westefeld et al., 2000; Freeman & Reinecke, 1993; Shneidman, 1992).

5. A majority of suicidal theory and empirical research has emphasized the role of cognition and the importance of intervening at the cognitive level. Some have even stated that suicidal behaviour is “primarily a state of mind” (Freeman & Reinecke, 1993; p. 3). Based upon these theories and empirical studies of risk factors, the conclusion has been made that there are cognitive differences between suicidal and nonsuicidal persons, even after controlling for depression or degree of pathology (Weishaar & Beck, 1990).

6. Some of these cognitive differences are hopelessness (Weishaar & Beck, 1990; Cole, 1989; Bonner & Rich, 1988; Ellis, 1986), problem-solving (Westefeld et al., 2000; MacLeod, Williams, & Linehan, 1992; Weishaar & Beck, 1990; Bonner & Rich, 1988; Linehan, Camper, Chiles, Strosahl, & Shearin, 1987; Ellis, 1986), dichotomous thinking (Shneidman, 1986, 1987; Neuringer & Lettieri, 1971), negative or dysfunctional automatic thoughts (Bonner & Rich, 1987), cognitive rigidity (Weishaar & Beck, 1990; Ellis, 1986) and construction of meaning (Rogers, 2001). Mraz & Runco (1994) found rigidity and inflexibility to be very important in predicting suicide ideation. Schotte and Clum (1987) also found rigidity and inflexibility to be related to suicide ideation. They implicated stress as well but, unlike Mraz and Runco (1994), felt that suicide ideation was more related to depression, hopelessness, and affect than to thinking tendencies. Rigidity and flexibility have been regarded as important variables in creative mental functioning (Guilford & Hoepfner, 1971; Torrance, 1963).

7. Hopelessness is one of the more researched and supported cognitive factors involved in suicide. Hopelessness is characterized as a belief that life conditions will not improve, and this belief itself is a predictor of eventual suicide among suicidal ideators (Freeman & Reinecke, 1993; Weishaar &
Beck, 1990; Cole, 1989; Beck, Steer, Kovacs, & Garrison, 1985). The exact relationship between hopelessness and suicidal behaviours has been examined also, and it appears that hopelessness is an important mediating variable between depression and suicide (Weishaar & Beck, 1990). Based on this finding, hopelessness may be the link between depression and suicide. This finding has been corroborated by other studies that found that hopelessness, rather than depression, predicted intent to die by suicide (Freeman & Reinecke, 1993).

8. Those who are suicidal also may present with cognitive rigidity and dichotomous, or all-or-nothing, thinking (Weishaar, 2000; Shneidman, 1996; Bonner & Rich, 1988; Ellis, 1986; Neuringer & Lettieri, 1971). Dichotomous thinking has been conceptualized as a form of cognitive rigidity (Weishaar, 2000). These two constructs are involved in the problem-solving process, as rigid thoughts and dichotomous thinking impair abilities to form alternative solutions, and deficits in these two domains may account for the noted problem-solving difficulties in suicidal people (Ellis, 1986). As individuals become increasingly upset, they begin to move into more and more rigid dichotomous thinking and eventually view suicide as the only option to escape their subjective pain (Shneidman, 1987).

9. Family functioning plays an important role in the etiology and treatment of adolescent suicidal behaviour. Research has shown that when family processes are disturbed, there is an increased risk of adolescent suicidal ideation and suicide attempts (Pfeffer, 1989). Family therapy is a recommended treatment modality for suicidal adolescents (Berman & Jobes, 1992; Richman, 1986). Unfortunately, research examining the relationship between family functioning and adolescent suicidal behaviour has been limited. As a result, the specific dimensions of family functioning that are risk factor for adolescent suicidal ideation and suicide attempts have not been clearly identified. Furthermore, the extent to which family functioning contributes to the risk of suicidal behaviour among adolescents has not been empirically determined.

The overview suggests that there are many gaps and limitations in the earlier studies, though their importance cannot be minimized. A perusal of earlier studies reveals that the majority of earlier researches have taken cognizance of one or two
variables in order to explain suicide ideation. It is imperative to emphasize that suicide ideation cannot be explained only on the basis of one or two precipitating factors. Numerous variables are essential to explain the variance in suicide ideation.

Thus, as in the present study, a number of psycho-social variables have been included in order to identify the factors of suicidal ideation to prepare a platform as a guiding force for this piece of research.

OBJECTIVES
The present study was planned with the following objectives:

1. To ascertain the nature of distribution of scores on different variables included in the present study.
2. To examine the gender differences on different variables included in the present study.
3. To examine the relationships of suicide ideation with depression, hopelessness, affective dysregulation, anxiety and cognitive rigidity.
4. To examine the relationships of suicide ideation with perceived family environment.