ADOLESCENT SELF-HARM IN A SCHOOL-BASED POPULATION: PREVALENCE AND CORRELATES

by

AVIVA M. LAYE

B.A. McGill University, 1992

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

Faculty of Education; Department of Educational and Counselling Psychology and Special Education; School Psychology

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April, 2002

© Aviva Laye, 2002
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of ECPS

The University of British Columbia
Vancouver, Canada

Date April 22nd, 2002
ABSTRACT

A paucity of research exists that has examined self-harming behaviour within the nonclinical adolescent population, despite evidence that it is a significant problem that typically originates during this age period (Ross & Heath, 2002; Simeon & Favazza, 2001; van der Kolk, Perry, & Herman, 1991). The present investigation sought to extend previous research, which has primarily focused on self-harm in clinical populations, by examining self-harm in a general school-based adolescent population. More specifically, the current study was designed to: (a) identify the prevalence of overall self-harm and subtypes; (b) explore the nature and subjective experience of self-harm using adolescents’ conceptualizations of the behaviour; (c) elucidate the underlying motivations for self-harming; and, (d) evaluate the relation of psychological adjustment, sociodemographic, and health risk variables to self-harming behaviour. To this end, adolescents (N = 424) in grades 9 and 11 completed self-report questionnaires assessing self-harm, psychological adjustment, social desirability, health behaviours, background information, and suicide history.

Results revealed that almost half of the adolescents in the present investigation reported self-harm ideation. Further, 15% of adolescents reported engaging in some form of self-harming behaviour, with more females than males reporting doing so. Types of self-harm reported included: cutting-type behaviours, self-battery (i.e., hitting, biting), pill abuse/misuse, eating disordered behaviour, reckless and suicidal-type behaviour, and bonebreaking/falling/jumping. Significant overlap was noted between suicide and self-harm.

Results supported, in part, that self-harm functions as a coping mechanism. For instance, adolescents' descriptions of affect revealed that negative emotions, frequently reported prior to self-harming, were reduced through harming, whereas relief and self-conscious emotions (i.e.,
shame, guilt) increased following an incident of self-harm. Most frequently nominated motivations for self-harm included: depression, loneliness, feelings of failure, self-dislike, anger, and distraction. These findings suggest that self-harm may function as an effective form of affect regulation in response to negative emotions. Results also revealed that motivations that underlie self-harming behaviour differ by gender.

Results indicated that anger discomfort and both internalizing and externalizing dimensions of psychological adjustment were significantly associated with self-harm, as hypothesized. Moreover, these relations occurred across genders and were sustained even when social desirability was controlled. Results from logistic regression analyses indicated that suicidal ideation, risky behaviours, antisocial behaviour, and emotional distress were significant in a predictor model of self-harm. Implications for prevention and intervention efforts and suggestions for future research are discussed.
<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td></td>
</tr>
<tr>
<td>Overview</td>
<td>1</td>
</tr>
<tr>
<td>Rationale</td>
<td>4</td>
</tr>
<tr>
<td>Summary</td>
<td>5</td>
</tr>
<tr>
<td>2. Literature Review</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td>Self-Harm: Overview</td>
<td>7</td>
</tr>
<tr>
<td>Definition and Terminology</td>
<td>8</td>
</tr>
<tr>
<td>Classifications and Categorizations</td>
<td>11</td>
</tr>
<tr>
<td>Self-Harm versus Suicide</td>
<td>18</td>
</tr>
<tr>
<td>Diagnostic Issues</td>
<td>20</td>
</tr>
<tr>
<td>Prevalence</td>
<td>21</td>
</tr>
<tr>
<td>Adolescent Prevalence</td>
<td>22</td>
</tr>
<tr>
<td>Special Populations' Prevalence</td>
<td>23</td>
</tr>
<tr>
<td>Gender Prevalence</td>
<td>24</td>
</tr>
<tr>
<td>Risk and Associated Factors</td>
<td>25</td>
</tr>
<tr>
<td>Cultural Factors: Contemporary Subculture</td>
<td>25</td>
</tr>
<tr>
<td>Biological Factors</td>
<td>27</td>
</tr>
<tr>
<td>Familial and Environmental Factors</td>
<td>28</td>
</tr>
<tr>
<td>Social Factors</td>
<td>31</td>
</tr>
<tr>
<td>Developmental Factors</td>
<td>33</td>
</tr>
<tr>
<td>Psychological Factors</td>
<td>35</td>
</tr>
<tr>
<td>Understanding Adolescent Self-Harm: Theoretical and Methodological Issues</td>
<td>38</td>
</tr>
<tr>
<td>Adolescent Studies</td>
<td>39</td>
</tr>
<tr>
<td>Methodological Issues</td>
<td>41</td>
</tr>
<tr>
<td>Adolescent Perspective</td>
<td>43</td>
</tr>
<tr>
<td>Summary</td>
<td>44</td>
</tr>
<tr>
<td>3. Statement of the Problem</td>
<td></td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>46</td>
</tr>
<tr>
<td>Research Questions, Hypotheses, and Rationales</td>
<td>48</td>
</tr>
</tbody>
</table>
4. Method

Participants ........................................................................................................... 55
Procedures ............................................................................................................. 57
Participant Recruitment ......................................................................................... 57
Data Collection ....................................................................................................... 58
Measures .................................................................................................................. 60
Background Information ......................................................................................... 60
Self-Harm Survey .................................................................................................... 60
Motivations Underlying Self-Harm Questionnaire .................................................. 63
Reynolds' Adolescent Adjustment Screening Inventory .......................................... 64
Anger Discomfort Scale ......................................................................................... 66
Marlowe-Crowne Social Desirability Scale, Short Form ....................................... 67

5. Results

Overview .................................................................................................................. 69
Preliminary Analyses .............................................................................................. 69
Prevalence and Sociodemographic Characteristics ................................................ 70
Prevalence of Self-Harm Ideation .......................................................................... 69
Prevalence of Self-Harm Behaviour ....................................................................... 70
Self-Harm and Sociodemographic Characteristics ............................................... 72
The Adolescent Conceptualization and Experience of Self-Harm ......................... 74
Self-Harm Ideation .................................................................................................. 74
Self-Harm Subtypes ................................................................................................ 75
Self-Harm Action: Timing, Duration, and Frequency .............................................. 77
Self-Harm, Disclosure, and Help-Seeking ................................................................ 77
Self-Harm Among Peers ......................................................................................... 78
Self-Harm and Surrounding Circumstances ............................................................ 78
Self-Harm and Emotions ......................................................................................... 79
Self-Harm and Underlying Motivations .................................................................. 81
Self-Harm and Risky Behaviours ............................................................................ 84
Self-Harm and Suicide ............................................................................................. 85
Relations of Self-Harm to Anger Discomfort and Psychological Adjustment .......... 85
Intercorrelations Among Variables By Gender ...................................................... 86
Gender and Group Differences Among Psychological Variables ......................... 89
Correlates as Predictors of Self-Harm: Individual Variable Contributions .......... 91
6. Discussion

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>97</td>
</tr>
<tr>
<td>Adolescents' Conceptualizations of Self-Harm</td>
<td>98</td>
</tr>
<tr>
<td>Prevalence of Self-Harm</td>
<td>101</td>
</tr>
<tr>
<td>Nature of Self-Harm</td>
<td>103</td>
</tr>
<tr>
<td>Function of Self-Harm</td>
<td>106</td>
</tr>
<tr>
<td>Correlates of Self-Harm</td>
<td>110</td>
</tr>
<tr>
<td>Psychological Adjustment</td>
<td>110</td>
</tr>
<tr>
<td>Sociodemographic Variables</td>
<td>113</td>
</tr>
<tr>
<td>Health-Compromising and Risky Behaviours</td>
<td>113</td>
</tr>
<tr>
<td>Predicting Self-Harm</td>
<td>116</td>
</tr>
<tr>
<td>Clinical Implications</td>
<td>116</td>
</tr>
<tr>
<td>Strengths, Limitations, and Future Directions</td>
<td>118</td>
</tr>
<tr>
<td>Strengths of the Study</td>
<td>118</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>119</td>
</tr>
<tr>
<td>Future Directions for Research</td>
<td>120</td>
</tr>
<tr>
<td>Summary</td>
<td>122</td>
</tr>
</tbody>
</table>

References .............................................................................................................. 124

Appendixes .................................................................................................................. 140

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Student Recruitment Letter</td>
<td>140</td>
</tr>
<tr>
<td>B. Parental/Guardian Consent Form</td>
<td>142</td>
</tr>
<tr>
<td>C. Questionnaire Package Cover Page</td>
<td>147</td>
</tr>
<tr>
<td>D. Background Information Form</td>
<td>149</td>
</tr>
<tr>
<td>E. Self-Harm Survey</td>
<td>154</td>
</tr>
<tr>
<td>F. Motivations Underlying Self-Harm Questionnaire</td>
<td>161</td>
</tr>
<tr>
<td>G. Optional, Request For Help Form</td>
<td>164</td>
</tr>
<tr>
<td>H. Reynolds' Adolescent Adjustment Screening Inventory</td>
<td>166</td>
</tr>
<tr>
<td>I. Anger Discomfort Scale</td>
<td>167</td>
</tr>
<tr>
<td>J. Marlowe-Crowne Social Desirability Scale, Short Form</td>
<td>170</td>
</tr>
<tr>
<td>K. Results of 2 (Gender) x 2 (Self-Harming vs. Non-Self-Harming)</td>
<td>172</td>
</tr>
<tr>
<td>ANOVA's</td>
<td></td>
</tr>
<tr>
<td>L. Results of 2 (Gender) x 2 (Self-Harming vs. Non-Self-Harming)</td>
<td>173</td>
</tr>
<tr>
<td>ANCOVA's Controlling for Social Desirability</td>
<td></td>
</tr>
</tbody>
</table>
List of Tables

Table 1. Self-Harming Behaviour: Illustrative Terms .................................................. 10

Table 2. Sociodemographic Characteristics of Participants ............................................. 56

Table 3. Sociodemographic Differences Between Adolescent Self-Harmers and Non-Self-Harmers .......................................................... 73

Table 4. Frequencies of Self-Harm Subtypes as Reported by Self-Harmers .................... 76

Table 5. Self-Harmers' Emotional States Surrounding Self-Harming Incidents ............... 80

Table 6. Motivational Aspects of Self-Harming Behaviour ............................................ 82

Table 7. Intercorrelations of Psychological Adjustment, Anger Discomfort, and Suicide History for Males and Females ........................................... 88

Table 8. Descriptive Characteristics Across Psychological Variables ............................... 90

Table 9. Logistic Regression Analyses of Predictors of Self-Harm Status Using Full Model ............................................................. 94

Table 10. Logistic Regression Analyses of Predictors of Self-Harm Status Using Reduced Model ............................................................. 94
List of Figures

Figure 1. The Self-Destructive Behaviour Continuum ......................................................... 17
CHAPTER 1

Introduction

Overview

In the last few decades of the 20th century, following the refutation of adolescence as a period of necessary psychological turmoil and deep confusion (Arnett, 1999; Powers, Hauser, & Kilner, 1989; Schonert-Reichl & Offer, 1992), a burgeoning literature has focused on specific aspects of adolescent development, problem behaviours, and psychopathology. Despite this surge, still relatively little recognition has been given to understanding the nature and function of adolescents' self-harming behaviours. In recent years, health-compromising behaviours including eating disorders, substance use and abuse, and suicide have received increasing attention (e.g., Forman & Kalafat, 1998; Joffe, Offord, & Boyle, 1988; Resnick et al., 1997; Windle, Miller-Tutzauer, & Domenico, 1992; Zweig, Lindberg, & McGinley, 2001), whereas other types of nonsuicidal intentional self-harm such as cutting, burning, and bruising have received minimal attention. Even within books, chapters, and journals devoted to adolescence and concomitant problems or issues, mention of these types of self-inflicted injuries is rare. Following a long-standing tradition within the literature, references to self-harming behaviour are typically subsumed under the more general heading of suicidal behaviour although their respective phenomenology and topography have shown to be vastly dissimilar (see Favazza, 1996; Ross & McKay, 1979; Walsh & Rosen, 1988). An exhaustive survey of the literature reveals a significant gap in research on adolescent self-harm, despite recent but limited evidence that it is a widespread phenomenon (Garrison et al., 1993; Lloyd, 1997; Patton et al., 1997; Ross & Heath, 2002).

Methodological and conceptual problems abound in the literature on self-harm. A plethora of classification systems and conceptualizations have been utilized to study this
phenomenon, resulting in prevalence data that is either over- or under-inclusive and mixed information regarding the nature and description of the problem (Feldman, 1988; Garrison et al., 1993; Lloyd, 1997; MacAniff Zila & Kiselica, 2001; Ross & McKay, 1979; Walsh & Rosen, 1988). Criteria for self-harm have shifted from study to study as there has been no definitional or terminological consensus, thus making it impossible to generalize across studies. Data representing a more general and well-defined conceptualization of self-harm is scant; rather, studies have idiosyncratically operationalized self-harm and examined specific self-harming behaviours or subgroups of self-harm including suicidal behaviour (e.g., Garrison, Jackson, Addy, McKeown, & Waller, 1991; Patton et al., 1997), deliberate self-harm (e.g., Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999; Kahan & Pattison, 1984), self-mutilation (e.g., Favazza, DeRosear, & Conterio, 1989; Raine, 1982), and acute self-destructiveness (e.g., Boudewyn & Liem, 1995).

Most of the available information on self-harm has been derived from a psychoanalytic perspective and has utilized case studies or small biased samples of special populations (i.e., clinical, incarcerated). Research within a nonclinical community context is almost nonexistent. Further, although prevalence appears to be high and perhaps even increasing (Conterio & Lader, 1998), very few studies on self-harm attempt a solid systematic and empirical approach. Studies often do not distinguish homogeneous subgroups within the more heterogeneous clinical samples and many do not provide group comparison. With the exception of a few studies with incarcerated male samples (i.e., Chowanec, Josephson, Coleman, & Davis, 1991; Haines, Williams, & Brain, 1995; Inch, Rowlands, & Soliman, 1995), studies have focused on these behaviours exclusively in females. It is often cited that this is a predominately female phenomenon, however minimal empirical evidence is available to support this supposition. Because the majority of the research has utilized adult or mixed adult-adolescent samples, the
adolescent experience has not been adequately represented. This fact is particularly alarming
given that self-harming behaviour typically has its genesis during adolescence (Favazza &

In the limited research investigating correlates of self-harming behaviour, results have
demonstrated an association between self-harming behaviour and suicidal ideation and behaviour
although the link is far from clear (Garrison et al., 1993; Lloyd, 1997; Patton et al., 1997).
Whereas self-harm was previously viewed as a variant of suicide or as a suicidal gesture, it is
only recently been more commonly conceptualized as distinct from suicide and without suicidal
intent (see Conterio & Lader, 1998; Favazza, 1996; Garrison et al., 1993; Walsh & Rosen, 1988).
Self-harm has been hypothesized to play an "adaptive" or therapeutic coping role, although there
is substantial anecdotal and descriptive evidence that this equilibrium comes at a cost (Conterio
& Lader, 1998; Favazza, 1996; Ross & McKay, 1979; Simeon & Favazza, 2001; Solomon &
Farrand, 1996; Walsh & Rosen, 1988).

Self-harm involves a complex interaction among multiple factors, including biological,
cultural, social, familial and environmental, developmental, and psychological factors. The
current cultural milieu in which body art, modification, and alteration (i.e., tattooing, piercing,
branding, scarification) is popular means that these behaviours are no longer considered deviant
or socially unacceptable. Researchers report associations between early childhood experiences
and attachment and self-harming behaviour (de Young, 1982; Ross & McKay, 1979; Simpson &
Porter, 1981; van der Kolk et al., 1991; Walsh & Rosen, 1988), specifically a history of
maltreatment and/or loss. Findings from animal studies have been utilized to support an
association between the functioning of various neurotransmitters, especially those that regulate
pain and adrenalin, leading to biological disinhibition (Ashton, Marshall, Hassanyeh, Marsh, &
Wright-Honari, 1994; Winchel & Stanley, 1991). An association with depression, anxiety, self-
esteem, and anger has been found, although these results are not always consistent across the literature (Bennum, 1983; Darche, 1990; Fennig, Carlson, & Fennig, 1995; Ross & Heath, 2002; Schwartz, Cohen, Hoffman, & Meeks, 1989). The research also supports correlations with antisocial behaviour (Chowanec et al., 1991; Hastings, Anderson, & Kelley, 1996; Patton et al., 1997), although this area has been little explored.

The purpose of the present investigation was to expand the current understanding of adolescent self-harm within a nonclinical school-based population. Specifically, the study identified and described the magnitude, nature, and experience of self-harm and elucidated the underlying motivational aspects of the behaviour. Further, the study provided insight into the psychological adjustment and anger expression of self-harming adolescents as compared to non-self-harming adolescents.

Rationale

Although limited, the available prevalence data suggests that self-harm is a significant and potentially increasing problem in adolescence (Conterio & Lader, 1998; Garrison et al., 1993; Patton et al., 1997; Ross & Heath, 2002). Evidence suggests that self-harm typically begins in adolescence and may become a sustained habit that continues through adulthood. Despite this "peak" incidence, very few investigations have been conducted to examine self-harm in adolescence specifically and even fewer have looked at the phenomenon within community school-based adolescents. It is imperative that researchers seek to understand self-harming behaviour as it occurs in adolescence. Furthermore, by incorporating adolescents' own constructions of self-harm, the present investigation sought to clarify the salient issues from an adolescent experience and perspective. Importantly, study results augment the current understanding of self-harming behaviour in adolescents.
Summary

Although the research base on self-harm has grown steadily over the past few decades, the phenomenon remains little understood, especially as it occurs in adolescents. The paucity of available information is related to the lack of systematic and empirical study of the behaviour. Much of the current knowledge on self-harm is derived from early psychoanalytic conceptualizations, attempts to distinguish suicidal self-harm from nonsuicidal self-harm, and from studies investigating the correlates among psychiatric and incarcerated youth and adults. Longitudinal studies would be beneficial to enhance understanding of predictive factors and the etiology of the behaviour. Research involving community school-based adolescents is vital. Understanding the behaviour as it occurs in nonclinical population proves useful in informing prevention and intervention efforts. Clearly, further research is necessary to improve the current understanding of adolescent self-harming behaviour.
CHAPTER 2

Literature Review

Introduction

Despite abundant references in the early psychiatric literature, self-harm -- defined as deliberate and voluntary physical self-injury that is generally not life-threatening and is without any conscious suicidal intent (e.g., Borges, Anthony, & Garrison, 1995; Favazza, 1996, 1998; Garrison et al., 1993; Herpetz, 1995) -- has been an understudied phenomenon. Although the past few decades have witnessed increased interest in the study of self-harm (i.e., Darche, 1990; Farberow, 1980; Favazza et al., 1989; Kahan & Pattison, 1984; Ross & McKay, 1979; Simpson & Porter, 1981; Walsh & Rosen, 1988), relatively few studies have focused on adolescents and even fewer have investigated self-harm behaviour in the nonclinical adolescent population (Garrison et al., 1993; Patton et al., 1997). Given the consensus among researchers and clinicians that self-harming behaviour typically originates during adolescence (Favazza et al., 1989; Garrison et al., 1993; Pattison & Kahan, 1983; van der Kolk et al., 1991), this gap in the research is particularly surprising. Clearly, adolescent self-harm remains an area in which greater understanding is needed.

Among adolescents, prevalence rates of self-destructive behaviours including completed suicide, suicide attempts, tobacco use, substance use and abuse, and eating disorders have steadily increased over the last few decades (Borges et al., 1995; Joffe et al., 1988; McCreary Centre Society, 1999; Resnick et al., 1997). Numerous studies have highlighted the interrelationships among self-destructive behaviours. In other words, individuals practicing one behaviour are more likely to engage in other self-harm behaviours (Doctors, 1981; Favazza & Conterio, 1988; Favazza et al., 1989; Herpetz, 1995; Jessor, 1991; Kahan & Pattison, 1984;
Pattison & Kahan, 1983; Patton et al., 1997; Zweig et al., 2001). Further, a theoretical relation has been presumed and explored between suicidal behaviour and self-harm (Favazza, 1996; Kahan & Pattison, 1984; Pattison & Kahan, 1983; Raine, 1982; Ross & McKay, 1979; Simpson & Porter, 1981; Suyemoto, 1998; Suyemoto & MacDonald, 1995; Walsh & Rosen, 1988). Given the increase in prevalence of self-destructive behaviours among adolescents, it can be assumed that the rate of adolescent self-harm is also increasing. Yet, research delineating the nature and function of self-harm behaviours is relatively nonexistent.

Self-Harm

Overview

This section begins with a review of the terminology utilized in the extant literature on self-harm and the various classification systems that have been developed. In order to counter the notion that self-harming behaviour is synonymous with or a derivation of suicidal behaviour, a review of the literature distinguishing between these two behaviours is presented. Next, a discussion of prevalence within the general population and within special populations ensues. Methodological issues related to the research on self-harm are reviewed, with a specific focus on the existing research involving adolescents. However, due to the scarcity of research involving adolescents, the studies reviewed include those that have utilized either only adults or a combination of adolescents and adults. Following is a discussion of the multiple factors that have been found to be associated with the development and maintenance of self-harming behaviour including biological, familial and environmental, cultural, social, developmental, and psychological factors. These risk factors or vulnerabilities are discussed in order to provide a deeper understanding of the behaviour. Finally, the role these factors play in the development and maintenance of self-harming behaviour is explored with a review of the extant research and links to underlying theory.
Definition and Terminology

Although consensus exists among researchers that self-harm should be conceptualized along a continuum, opinions differ as to its precise definition and nature. Self-harm is often used as a broad concept to describe a range of self-destructive behaviours that do not include culturally or socially sanctioned activities that are cosmetic, religious, and/or ritualized, such as ear piercing, tattooing, and birth or puberty rites (Favazza, 1996). Maris (1992) refers to the suicidal continuum, which includes overtly suicidal behaviours (i.e., suicidal ideation, suicide gestures, attempts, and completions) as well as more ambiguous self-destruction (indirect suicide and indirect self-destructive behaviour). These behaviours may frequently overlap, but each is unique and takes its place along the continuum.

Farberow (1980) posits a continuum that has direct self-destructive behaviour (i.e., overt suicide) at one end and indirect self-destructive behaviour (i.e., from self-mutilation to tobacco smoking) at the other end. In this model, the criteria of time and awareness are utilized to distinguish indirect from direct self-harm. By explanation, for indirect self-harm, the behaviour occurs over an extended time period (time criteria) and the individual is unaware of or disregards the effects of the behaviour and there is no intent to die (awareness criteria). According to Farberow, self-harm such as self-mutilation should be considered indirect self-destruction as it is dynamically closer to other indirect forms. Given the wide range of behaviours that have been said to fall along the self-harm continuum, it is not surprising that defining and categorizing self-harm has been a complicated endeavour.

Much of the literature on self-harm is confused by imprecise terminology as well as by the practice of treating self-harming behaviour as a suicidal gesture. Across studies, identical terms have frequently been used to indicate behaviours that present very different topographies and functions. Research has utilized a plethora of terms to refer to self-harming behaviour,

In an effort to highlight the terminological confusion, Ross and McKay (1979) provide a list of 33 different terms utilized by researchers to refer to self-harm (see Table 1). According to both Favazza (1988, 1992, 1998) and Walsh and Rosen (1988), self-harm does not include ingestion or inhalation of toxic substances because of the ambiguity and invisibility of the degree of harm involved. In contrast, because Ross and McKay (1979) view self-harm as representing a broader spectrum of behaviours that have in common a direct effect on the body, they include ingestion and inhalation in their typology of self-harm.
Table 1

Self-Harming Behaviour: Illustrative Terms

| 1. A little suicide                     | 18. Self-attacking behaviour  |
| 3. Attenuated suicide                  | 20. Self-destructive behaviour|
| 5. Deliberate disability              | 22. Self-hurting behaviour    |
| 10. Intentional injury                 | 27. Self-wounding behaviour   |
| 11. Local self-destruction             | 28. Self-directed aggression  |
| 12. Malingering                        | 29. Self-mutilation           |
| 13. Masochism                          | 30. Small suicide             |
| 14. Munchausen syndrome                | 31. Symbolic wounding         |
| 15. Self-abusive behaviour/conduct     | 32. Parasuicide               |
| 16. Self-aggressive behaviour          | 33. Purposive accidents       |
| 17. Self-assaultive behaviour          |                                |

More recent additions to this list would include:

34. Self-inflicted violence
35. Self-cutting
36. Delicate self-cutting
37. Coarse cutting

Note. This table is adapted from Ross & McKay, 1979, p. 13.

Many researchers studying self-harm do not distinguish between direct self-injury, such as cutting, and other methods of self-harm, such as self-poisoning or overdosing. Studies tend to be overinclusive or underinclusive depending on the definition of self-harm utilized. The differing terminologies and conceptualizations makes comparability across studies difficult and renders the development of a systematic empirical research base challenging. Much as O'Carroll et al. (1996) proclaimed an urgent need for a generally accepted nomenclature for suicidal behaviour, this necessity is also apparent in the self-harm literature. It is unfortunate that
O’Carroll et al. did not extend their approach to include self-harming behaviour that involves neither suicidal intention nor instrumental suicidal behaviour. Because much of the research cited in the present review has used the term self-mutilation to refer to self-harming behaviour as defined in the Introduction to this chapter, the terms self-harm and self-mutilation are used interchangeably.

Classifications and Categorizations

Aside from attempting to derive a more precise definition and nomenclature for self-harm, researchers and clinicians have been involved in efforts to classify the various types of self-harm in order to both improve the current understanding and aid in diagnostic clarity. However, the development of a classification scheme or typology is a step beyond deciding on a standardized set of terms. Given the lack of consensus regarding definitions and terminology, it is not surprising that among researchers and clinicians, efforts to classify and categorize the behaviour have also not met with consensus. Conceptual confusion along with the lack of consistency in early attempts to categorize self-harm has led to confusion about what actually constitutes the behaviour. Despite attempts to increase clarity and create some uniformity, none of the classification systems appear to have been widely adopted and the literature on self-harm remains conceptually confusing.

Menninger (1938) was the first to develop a classification scheme for self-destructive behaviour and his effort paved the way for future research. He examined a wide variety of self-destructive behaviours and suggested possible links among self-mutilation, suicide, and other more indirect self-harming behaviour including smoking, substance abuse, and obesity. Within the category of self-mutilation specifically, Menninger discussed six different types: neurotic (e.g., skin picking), religious (e.g., ascetic self-flagellation), puberty rites (e.g., circumcision),
organic disease self-mutilation (e.g., self-enucleation in sufferers of encephalitis), and customary
and conventional self-mutilation in normal people (e.g., nail clipping). Importantly, his
formulation was multidimensional, emphasizing several interrelated factors including level of
psychological/physiological disturbance, subcultural context and meaning of the self-mutilation,
the degree of harm and bodily location, and the psychodynamic determinants.

Farberow (1980) continued with Menninger's (1938) scheme, carrying it one step further
when he published a volume on indirect self-destructive behaviour that included a chapter on
self-mutilation. According to Farberow's broader conceptualization of self-harm, suicide is the
only direct self-destructive behaviour and all other behaviours, including self-mutilation, are
considered indirect. Farberow's classification model consists of four groups of indirect self-
destructive behaviour: (1) individual has a physical illness and uses it against him/herself by
making it or other physical conditions worse (e.g., asthma, ulcer); (2) injury or damage to the
body from self-initiated activities (e.g., smoking, self-mutilation) or to the person (e.g., severe
sexual disorders, asceticism); (3) injury or damage to the body (e.g., rioting, repeated accidents)
or to the person (e.g., compulsive gambling, delinquency) is potential; and, (4) stress-seeking and
risk-taking behaviour may result in potential damage to the body (e.g., skydiving, motorcycle
racing) or to the person (e.g., games of risk, stock market speculation).

Oddly, Farberow's conceptualization of self-mutilation as an indirect self-destructive
behaviour partially challenges his own criteria for inclusion in this category, namely that the
behaviour is not overt such that the individual either ignores or is not conscious of the effects.
Nevertheless, Farberow's work further legitimized the study of self-destructive behaviour and
specifically focused attention on the indirect types of self-harm and their relation to both each
other and to more direct types of self-harm.
In an attempt to address some of the problems evident in previous classifications, Ross and McKay (1979) adopted a behavioural-descriptive perspective for their classification scheme. With the overarching construct of self-injury, they proposed a link between direct and indirect self-injurious behaviour, with the differentiation resting on temporal aspects (immediate/remote) and outcome (unequivocal/ equivocal) between behaviour and bodily consequences. Direct self-injurious behaviour refers to nine different types of self-mutilation: cutting, biting, abrading, severing, inserting, burning, ingesting/inhaling, hitting, and constricting. In contrast, according to these researchers, indirect self-injurious behaviour includes: alcohol abuse, obesity, smoking, drug abuse, refusal of medical treatment, and maceration. Interestingly, Ross and McKay carefully avoided mentioning suicide in their schema and, by explanation, state that to do so would be premature. Although this categorization is helpful in establishing the types of self-harm, with its reliance on an exclusively behavioural description, it does little to advance the understanding of the behaviour.

By consciously incorporating elements from Menninger's (1938) multidimensional classification and Ross and McKay's (1979) objective format, Walsh and Rosen (1988) have opted for the middle-ground in their heuristic schema of "self-alteration of physical form" (p. 6). According to Walsh and Rosen, behaviours under the rubric of "self-alteration of physical form" fall along a continuum with four distinct types that are differentiated mainly with regard to the degree of physical damage they entail, the psychological state of the individual at the time of the act, and the social acceptability of the behaviour. In order to qualify as self-mutilation, the behaviour must be deviant on all three dimensions. The four types are as follows: (1) Type I -- common behaviours such as ear piercing, professional tattoos, superficial to mild damage, benign psychological state, high acceptability; (2) Type II -- symbolically meaningful,
subcultural experiences such as punk rock piercing, ritualistic scarring among cultural clans, mild to moderate damage, benign to agitated psychological state, socially acceptable within a specific subculture only; (3) Type III -- dysfunctional self-mutilation such as wrist and body cutting, burning, self-inflicted tattooing, mild to moderate damage, psychic crisis, generally not socially acceptable although peers may also engage; and, (4) Type IV -- pathological self-mutilation such as autocastration and amputation, severe damage, psychotic decompensation, entirely socially unacceptable. The continuum aspect is important in the way that it emphasizes that behaviours beginning with culturally acceptable forms of self-alteration may progress and intensify to reach more extreme levels of self-alteration that actually become self-mutilation.

As part of their argument supporting the inclusion of "deliberate self-harm syndrome (DSH)" as a distinctive class of self-destructive behaviour that should be included in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994) as an Axis I diagnosis of impulse control disorder, Pattison and Kahan (1983; Kahan & Pattison, 1984) combined the three variables of direct/indirect, low/medium/high lethality, and single/multiple episode to develop a new classification model. Whereas lethality occurs along a continuum, direct and indirect self-harm are linked with specific behavioural descriptions that are categorized according to single or multiple episode. For example, a suicide attempt is a direct self-destructive behaviour that is a single episode of high lethality. In contrast, deliberate self-harm syndrome (encompassing self-mutilation) is a multiple episode, direct self-destructive behaviour, of generally low to medium lethality. These researchers report that drug and alcohol abuse, indirect self-destructive behaviours, are common concomitants of deliberate self-harm although they are excluded from the deliberate self-harm criteria, along with other indirect self-harm. Pattison and Kahan's (1983; Kahan & Pattison,
1984) classification scheme eliminated some of the conceptual and terminological confusion surrounding self-harm, but was not adopted for the DSM-IV.

In his "dynamic taxonomy," Figueroa (1988) utilizes self-destructive behaviour as an umbrella term and refers to five specific types of self-destruction: (a) self-injurious behaviour that is genetic or organic in nature; (b) intentional suicide attempts and completions; (c) self-mutilation with character pathology; (d) psychotic self-mutilation; and, (e) failures in self-care which includes risk-taking, self-defeating behaviour, and obsessive-compulsive behaviours (i.e., hair pulling, picking).

Winchel and Stanley (1991) proposed to categorize self-harming behaviour according to the type of patient and clinical context. They refer to four categories: mentally retarded individuals, psychotic patients, prison populations, and psychiatric patients (personality disorders, eating disorders, and dissociative disorders are mentioned). Their list is not exhaustive and, like much of the extant research, excludes nonclinical and noninstitutionalized self-harming individuals.

The most recent and comprehensive model has been delineated by Favazza (1992, 1996, 1998), who refers specifically to acts of self-mutilation (e.g., direct destruction or alteration of body tissue through cutting, burning, carving, inserting, banging, hitting, biting, bone breaking) which he subdivided into three categories based on tissue destruction and rate and pattern of behaviour. The categories are as follows: (1) Major -- infrequent acts most commonly associated with psychosis and acute intoxication; (2) Stereotypic -- repeated acts with a fixed pattern, often rhythmic and practiced by individuals suffering from developmental disorders or mental retardation; and, (3) Moderate-Superficial -- most common type of self-mutilation with low lethality and minimal tissue damage, viewed as symptoms or as associated features of disorders.
(i.e., depression, eating disorders). The Moderate-Superficial category is further subdivided to include: (a) compulsive self-mutilation -- repetitive, ritualistic (e.g., trichotillomania); (b) episodic self-mutilation -- the behaviour occurs but is not constant or consistent; and, (c) repetitive self-mutilation -- there may be a progression from episodic to repetitive with the increase of the behaviour, the individual's identity may be that of a self-mutilator and s/he may feel addicted and is preoccupied with self-mutilation. This typology, by definition, excludes other types of self-harm such as suicide attempts and indirect self-harm and focuses only the direct and overt act of self-mutilation. With its multidimensional and multidetermined approach to self-harming behaviour, the organization represents an improvement over previous schemes. Unfortunately, however, its somewhat narrower focus means the exclusion of indirect self-harm. The present investigation focused primarily on the latter type of self-harm, moderate-superficial, and related overlapping indirect self-harming behaviours that emerged from a youth-driven conceptualization of self-harm. For the purposes of the current study, the a priori conceptualization of the self-harm continuum is presented in Figure 1.

As discussed, various heuristic schemas have been developed in the attempt to organize conceptualizations of self-harm. The classifications range from the broad category of self-harm, to the dichotomies of direct and indirect self-harm, to very specific distinctions within self-mutilation. These classification schemes are varied in scope. Whereas some propose to describe objectively specific behaviours or groups within the population at large, others attempt to categorize according to other aspects of the behaviour such as level of injury or tissue damage, lethality, level of psychological disturbance, subcultural context, and frequency and/or pattern of the behaviour. A classification scheme is useful in helping to determine the salient relationships between categories of self-harm and other types of self-destructive behaviour. This glimpse into
the nature of classifying and categorizing self-harm behaviour reflects the emerging view of self-harm as a phenomena distinct from suicide and worthy of study in its own right.

Self-Harm Versus Suicide

Early attempts to examine self-harm occurred primarily within the context of discussions on suicide. Although an obvious connection exists between self-harm and suicidal behaviour, the two represent distinct sets of behaviour and areas of inquiry. Pioneering efforts to advance the understanding of self-harm were made by Menninger (1938), who viewed self-mutilation as a partial or focal suicide that was meant as a compromise to the total destruction of self that occurs in completed suicide. Within this conceptualization, suicidal impulses are directed on a part of the body which serves as a substitute for the entire body. As a variant of suicide, self-mutilation represented a mode of self-healing in which the Freudian life or survival instinct is victorious over the death instinct. Despite this early distinction, the idea that self-harm should be recognized as separate from suicide did not find support until the last few decades (Favazza & Conterio, 1988; Garrison et al., 1993; Patton et al., 1997; Solomon & Farrand, 1996; Walsh & Rosen, 1988; Winchel & Stanley, 1991). Thus, much of the early literature on self-harm was buried in the research on suicide. Even now, when theoretical distinction between the two phenomena is presumed, contemporary research studies are often designed to include both individuals engaging in nonsuicidal self-harm and those engaging in suicidal behaviour within the same group without acknowledgement of the differences between them.

Suicide and self-harm differ in several important ways. First, according to Favazza (1996), "Suicide is an exit into death, but self-mutilation is a reentrance into a state of normality. Suicide is an act of escape, but self-mutilation is a morbid act of regeneration. A person who attempts suicide seeks to end all feelings, but a person who self-mutilates seeks to feel better"
One important distinguishing factor between self-harm and suicide is lethality. Whereas a suicide attempt is generally considered an act of high lethality, self-harm is not. Second, investigations of suicidal intent and ideation have revealed that, although self-harmers may demonstrate a level of suicidal ideation, self-harmers do not indicate a relation between their self-harming behaviour and a wish or intent to die (Favazza, 1996; Favazza & Conterio, 1988; Garrison et al., 1993; Patton et al., 1997; Ross & McKay, 1979; Simpson & Porter, 1981; Solomon & Farrand, 1996; Walsh & Rosen, 1988; Winchel & Stanley, 1991). Third, there is an element of chronicity in that individuals engaging in self-harming behaviours often do so repeatedly (Doctors, 1981; Favazza, 1996; Favazza, 1998; Graff & Mallin, 1967; Morgan, 1979; Pattison & Kahan, 1984; Patton et al., 1997; Raine, 1982; Ross & McKay, 1979; Schwartz et al., 1989; Simpson, 1980; Walsh & Rosen, 1988). Whereas suicidal individuals may attempt to kill themselves more than once, self-harmers may repeat their behaviour many, many times. Further, studies have demonstrated that the majority of chronic self-harmers employ more than one method of self-harming (Herpetz, 1995; Lloyd, 1997; Pattison & Kahan, 1984; Ross & McKay, 1979; Schwartz et al., 1989; Simpson, 1980; Walsh & Rosen, 1988).

Although over the past few decades researchers have attempted to distinguish self-harming behaviour from suicide, few empirical studies have investigated the relation between self-harm and suicide, specifically. The limited evidence supports that a subgroup of self-harmers do also attempt and/or complete suicide (Darche, 1990; Favazza & Conterio, 1989; Garrison et al., 1993; Guertin, Lloyd-Richardson, Spirito, Donaldson, & Boergers, 2001; Lipschitz et al., 1999; Lloyd, 1997; Schwartz et al., 1989; Simpson, 1975; Stanley, Gameroff, Michalson, & Mann, 2001; van der Kolk et al., 1991). Rates of comorbidity have been found to be as high as 31% in an adolescent inpatient sample (Walsh & Rosen, 1988), with approximately
one percent of individuals presenting to hospitals for self-harm committing suicide within one year and four percent within five years (S. Lomax, personal communication, April 9, 2001). Additionally, 50% of individuals who commit suicide also have a history of self-harm (S. Lomax, personal communication, April 9, 2001). This has implications both for understanding and for treatment. Importantly, however, self-harm is much more common than suicide, as will be explicated in a subsequent section (Favazza, 1996; Garrison et al., 1993; Patton et al., 1997; Walsh & Rosen, 1988).

**Diagnostic Issues**

Self-harming behaviour is referred to as a symptom and syndrome in its own right as well as an associated feature of specific disorders. Although it is beyond the scope of the present investigation, self-harm as associated with psychotic individuals (i.e., Schizophrenia) is reported to be more severe and lethal. Self-harm is most notably associated with the diagnosis of Borderline Personality Disorder, probably in part because it is one of the few disorders which actually has nonsuicidal bodily injury as an essential feature. However, the persistence or stability of a personality disorder diagnosis for self-harming adolescents has been questioned (Favazza, 1992; Meijer, Goedhart, & Treffers, 1998). Other common diagnoses associated with self-harm include: depressive disorders, Multiple Personality Disorder, Antisocial Personality Disorder, Post-Traumatic Stress Disorder, dissociative disorders, eating disorders, Substance Abuse Disorder, Obsessive Compulsive Disorder, anxiety disorders, and adjustment disorders (Darche, 1990; Favazza, 1996; Favazza & Conterio, 1989; Favazza et al., 1989; Ghaziuddin et al., 1992; Herpetz, 1995; Ofer & Barglow, 1960; Ross & McKay, 1979; Simpson, 1980; Simpson & Porter, 1981; Walsh & Rosen, 1988; Weissman, 1975).
In several review articles, Favazza (1992, 1996, 1998) argues for repetitive self-mutilation to be considered as a separate diagnosis as an Impulse Control Disorder, similar to eating disorders, and refers to the common bias toward Borderline Personality Disorders as a "diagnostic stumbling block" (p. 62). Favazza states that, "Character traits may become hypertrophied during the course of the Axis I [impulse control disorder], giving the appearance of a full-fledged characterological disorder" (Favazza, 1992, p. 62). Similarly, Pattison and Kahan (1983; Kahan & Pattison, 1984) proposed a new classification of Deliberate Self Harm Syndrome (DSH) that would appear under the umbrella of Impulse Control Disorder in DSM-IV. Evidence cited by Pattison and Kahan in support of the inclusion of this new category included: the impulsivity of acts of self-harm; increasing tension prior to the act; the experience of relief or release that follows the act; and, the comorbidity between self-harming behaviour and other impulse-type disorders such as substance abuse, kleptomania, and eating disorders. Their recommendation was based on an index case analysis of all published cases over the period 1960-1980. Thus far, neither recommendation, by Favazza or Pattison and Kahan, has been implemented.

Prevalence

Prevalence rates of self-harm have been estimated to be 750 per 100,000 in the general population. However, according to Favazza and Conterio (1988), these rates are probably closer to "1,800 per 100,000 if the figures were based only on persons aged 15 to 35, the peak incidence years for self-mutilation" (p. 23). Other estimates are even higher, with Briere and Gil (1998) reporting 4% in their study of a representative community sample of 927 individuals as engaging in at least occasional instances of self-mutilative behaviour. Given the terminological confusion and methodological problems that have plagued the literature on self-harm, the fact that much of
the behaviour goes unreported due to its private nature and low lethality, and the use of nonstandardized reporting mechanisms, these prevalence figures have likely underestimated the scope of the problem. In a survey of 245 undergraduate students, Favazza (personal communication, May 22, 2000) found that 13.8% of students admitted to deliberately harming themselves on at least one occasion. Researchers examining self-harm in a Canadian sample found an "estimated true rate" of 1,400 per 100,000 with even higher rates of self-harm when considering age, socioeconomic status, and gender (Johnson et al., 1975; Whitehead, Johnson, & Ferrence, 1973).

Some reports indicate that the prevalence of self-harm is increasing (Conterio & Lader, 1998; Johnson et al., 1975; MacAniff Zila & Kiselica, 2001; Walsh & Rosen, 1988). Conterio and Lader (1998), directors of a program for self-injuring individuals, write, "Self-injury has become so pervasive in the United States and all signs indicate it is growing. The syndrome is more prevalent than most people think and yet it is still grossly under-reported and misdiagnosed" (p. 20). Although one might expect an increase in self-harm corresponding to increases in related behaviours (i.e., suicidal behaviour, risky behaviour), from the extant research it is difficult to ascertain whether this is the case.

Adolescent prevalence. Prevalence data from investigations specific to the nonclinical adolescent population are scarce. The majority of studies involving adolescents have utilized inpatient or clinical samples rather than nonclinical community based samples. In their investigation of a large community sample of adolescents, Patton et al. (1997) found a prevalence rate of 5.1% (in contrast to a 0.2% true suicide attempt rate) using a large sample of 1,699 adolescents. In another recent study, Garrison et al. (1993) found a weighted prevalence estimate of 2.49% in females and 2.88% in males. Perhaps one of the highest prevalence rates of
self-harm found in a nonclinical sample was found most recently by Lloyd (1997). Specifically, in a sample of 368 adolescents, 39% of them reported engaging in self-mutilative behaviour within the previous 12 months. In this study, self-mutilative behaviour included cutting or carving, hitting, pulling hair out, self-tattooing, burning, insertion of objects under the skin/nails, biting, picking, scraping, and erasing skin. Biting, cutting/carving, and hitting self were the most frequently endorsed behaviours. Unfortunately, together with the lack of standardized nomenclature, the dearth of research in the nonclinical adolescent population means that this data cannot be compared across studies.

**Special populations’ prevalence.** Research focusing on the symptom of self-harm as it is associated with clinical disorders is more plentiful. Prevalence rates of self-harm in the clinical population are found to be significantly higher (Briere & Gil, 1998; Favazza, 1988; Favazza et al., 1989; Favazza, 1996) as self-harm has been associated with a range of diagnostic categories including personality disorders (most namely, borderline personality disorder), psychotic disorders, major affective disorders, dissociative disorders, depersonalization disorder, eating disorders, and anxiety disorders. In psychiatric populations, prevalence rates range from 4% (Feldman, 1988) to 21% (Briere & Gil, 1998), with higher rates among adolescent inpatients and eating disordered individuals (Favazza & Conterio, 1988; Lipschitz et al., 1999; Winchel & Stanley, 1991). DiClemente, Ponton, & Hartley (1991) cite a 61% rate of cutting behaviour among psychiatrically hospitalized adolescents, with the frequency of self-harm ranging from a single incident to more than 50.

Within institutional or residential settings, self-harm has been referred to as an epidemic (Chowanec et al., 1991; Darche, 1990; Ghaziuddin et al., 1992; Hartman, 1996; Inch et al., 1995; Ross & McKay, 1979; Schwartz et al., 1989). For instance, in a study at a Canadian correctional
facility, Ross and McKay (1979) found that 86% of the adolescent girls carved their skin. In another investigation, Toch (1975) found a self-mutilation rate of 7.7% for incarcerated youths, 6.5% for adult male offenders, and 10.8% for adult female offenders. Similarly, in another more recent study (Chowanec et al., 1991) 10.4% of consecutive admissions to a youth detention centre involved male adolescents who engaged in at least one self-harming behaviour. Findings from a recent study of 243 adolescents in custody facilities in British Columbia (McCreary Centre Society, 2001), reveal that 41% of girls and 18% of boys deliberately injured or cut themselves while in the community and 28% of girls and 17% of boys injured or cut themselves while in a youth custody centre.

**Gender prevalence.** Minimal research has been conducted to examine gender specifically. Findings with regard to gender and self-harm are inconsistent; although a few studies have found equal prevalence among males and females (Briere & Gil, 1998; Garrison et al., 1993; Lloyd, 1997; Kahan & Pattison, 1984), much of the literature supports the notion that prevalence is significantly higher among females (Favazza, 1998; Feldman, 1988; Graff & Mallin, 1967; Morgan, 1979; Patton et al., 1997; Ross & McKay, 1979; Walsh & Rosen, 1988). Interestingly, Favazza's (personal communication, May 22, 2000) 1988 survey results demonstrated a prevalence rate of 17.8% (13 of 73) within an undergraduate male sample and 12.1% within an undergraduate female sample (21 of 172). Nevertheless, because the majority of studies have utilized exclusively female samples, any conclusive information regarding gender differences is impossible to ascertain.

Just as data regarding the relation of self-harm and socioeconomic or ethnic/cultural background is absent from the literature, similarly, cross-study comparison of prevalence rates is close to impossible for the following few reasons. First, a majority of researchers do not report
demographics of their study participants. Second, studies tend to utilize different time frames of reference. For example, some researchers ask whether the individual has engaged in self-harm within the past year, others ask about the previous three months, and still others ask for lifetime information. Third, as referred to in an earlier section, self-harm is defined and operationalized in a variety of ways that are idiosyncratic to each particular investigation. Moreover, researchers do not always provide information regarding their operationalization.

Risk and Associated Factors

Self-harm is a multidetermined phenomenon. Although numerous factors have been found to be associated with self-harming behaviour, direct causal interpretation should be approached cautiously given that the bulk of the investigations have been cross-sectional and retrospective. Nevertheless, related factors can be organized into the following dimensions: cultural, biological, developmental, familial and environmental, social, and psychological. These factors are explored in the following sections.

Cultural Factors: Contemporary Subculture

Behaviour that was previously considered to be socially unacceptable, or only acceptable within "deviant" or subcultural groups, has now filtered into mainstream culture as tattooing, piercing, and even scarification as modes of artistic or creative self-expression have gained popularity among adolescents and young adults (Armstrong & McConnell, 1994; Armstrong & Murphy, 1998; Favazza, 1996; Hewitt, 1997; Martin, 1998; Ng, 1998). Although no longer considered deviant, body alteration of this kind is still associated with a rebellion against dominant cultural values. This rebellion or adoption of marginalization, however, has been commercialized and is now considered mainstream in contemporary popular youth culture. Fashion magazines, music videos, art exhibitions, and even dolls reflect the current popular
interest in tattooing and body piercing. For the ultimate message that body art and modification has become mainstreamed, one needs to look no further than the fake tattoos and piercings that are available for purchase for young children's birthday loot-bags.

According to a study by Armstrong and Murphy (1998), 55% of their sample of 2,101 adolescents were interested in getting a tattoo(s) and 10% reported already having a tattoo(s). Interestingly, tattooing interest increased from a similar study conducted four years earlier in which it was 33% (Armstrong & McConnell, 1994). Of the tattooed youth, 57% labeled themselves as "risk-takers." With regard to how the adolescents obtained their tattoos, 44% of the tattooed adolescents reported obtaining studio tattoos while 56% reported that their tattoos were created with the use of straight pins or needles, pens, pencils, and other homemade instruments. Armstrong and Murphy did not provide other information regarding the nature of the amateur tattoos obtained by the adolescents, but such information would undoubtedly be helpful in terms of shedding light on a possible link between self-harm and body alteration.

The experience of body art and modification has obvious parallels with the experience of self-harm. Experiencing and transcending the pain of body alteration is an important part of the process for some individuals. "The creative expression of identity is enhanced by the feeling of 'aliveness' that accompanies the pain of the process [of tattooing or piercing] for many people" (Hewitt, 1997, p. 75). Researchers who have studied contemporary piercing denote two types of piercers, aesthetic piercers and functional piercers (Hewitt, 1997). The latter type seeks body alteration as a transformation, therapeutic process, and/or a mode of coping to resolve personal and spiritual issues. Hewitt writes about a professional piercer:

[She] explained her many tattoos and pierces by describing them in part as a coping reaction to stress similar to the coping mechanism of cutting. 'Some people cut, I pierce.'
A crucial difference between self-cutting and piercing is the planned and ornamental nature of piercing.... Piercing and tattooing are part of her everyday life and one of her coping mechanisms for transforming stress or traumatic events into tangible, contained messages upon her body ... she controls some aspect of the event or her emotions (p. 89).

For some functional piercers, the need to pierce can become disturbing. The growing social acceptance of some forms of body alteration means that the lines between artistic self-expression and serious psychological problems become blurred. To date, to the knowledge of the present author, no investigations have been conducted that have examined the association between body alteration and self-harming behaviour within either an adult or adolescent population, although anecdotes in the literature on self-harm suggest that they may be at least somewhat related (see Favazza, 1996; Hewitt, 1997).

**Biological Factors**

Numerous syndromes involving genetic, chromosomal, or metabolic abnormalities such as Lesch-Nyhan syndrome, Cornelia de Lange syndrome, and Tourette's syndrome have been associated with self-injurious behaviour (Favazza, 1996; Feldman, 1988; Lester, 1972; Ross & McKay, 1979). Research conducted with individuals with neurological impairment who exhibit self-injurious behaviour has led to speculations about the self-stimulatory aspects of these behaviours.

Findings from the psychobiological literature suggest the involvement of serotonergic, dopaminergic, and opiate neurotransmitter systems in the development and maintenance of self-harming behaviour. Following from early animal studies, the neurotransmitter serotonin has been implicated in aggressive impulses that are directed against the self (Grossman & Siever, 2001; Winchel & Stanley, 1991). Findings from studies comparing self-mutilators with non-self-
mutilators have demonstrated that self-mutilators have lower levels of serotonin activity (Grossman & Siever, 2001). Results from a study by Ashton et al. (1994) revealed lower serotonin levels for repetitive self-harmers versus single episode self-harmers, although here self-harm referred to suicidal behaviour specifically. Additionally, clinicians have documented that the use of selective serotonin reuptake inhibitors to enhance serotonin activity has proved somewhat effective, at least in decreasing the impulsivity and compulsivity that can drive the self-harming behaviour (Favazza, 1996; S. Lomax, personal communication, April 9, 2001; Winchel & Stanley, 1991).

Less conclusive within the research on physiological factors, is the suggestion that individuals self-harm to induce the production or release of endogenous opiates (endorphins and metenkaphalins) which, in turn, become "addictive." These endogenous opiates are opium-like neurotransmitters that can act to suppress pain and regulate emotions, which could help to explain why some individuals who engage in self-harm do not feel pain. Additionally, studies using samples of individuals with organic dysfunction (i.e., Lesch-Nyhan syndrome), have led to speculations about abnormal functioning of the catecholamine neurotransmitters (norepinephrine and dopamine) (see Favazza, 1996; Winchel & Stanley, 1991). It is possible that these biochemical changes may not precipitate the self-harm, but instead may occur as a healing response to self-harm. Prospective and longitudinal research efforts must be undertaken to examine whether there exists a causal link between these physiological factors and self-harming behaviour.

Familial and Environmental Factors

A plethora of investigations have examined childhood circumstances of self-harming individuals and found several commonalities. Associations with life events including serious

Studies using nonhuman primates have shown that extreme disruptions in early parental care lead to attachment difficulties, impaired pain perception, and potential psychological and behavioural problems. Disturbed early interpersonal relations may interfere with the development of self-regulation of affective states, adaptive communication, and the ability to foster and utilize social supports. Early psychoanalytic literature, as well as more recent empirical studies, have identified loss as a significant factor in the initiation of self-harming behaviour and in precipitating its ongoing occurrence (Kafka, 1969; Pao, 1969; Rosen et al., 1990; Walsh & Rosen, 1988). "Losses occurring early in life are seen as hindering the development of a stable capacity for object love; subsequently, new losses are viewed as recapitulating the original losses" (Rosen et al., 1990, p. 178).

Self-harming behaviour may occur as an initial response to severe trauma and then develop as a conditioned psychological and biological emergency response to even low levels of stress (Bell, 2001; Grossman & Siever, 2001; van der Kolk et al., 1991).

Many self-destructive people follow these patterns; they may experience intense physiological disorganization in the face of minor stress, giving rise to either impulsive and aggressive actions or to the triad of dissociative reactions, psychic numbing, and
physical analgesia. It is likely that the immaturity of the central nervous system of children makes them more vulnerable than adults to developing lasting biological changes in response to trauma and neglect.... Even adults with post-traumatic stress disorder develop significant opioid-mediated, stress-induced analgesia when exposed, nearly two decades later, to a trauma-related stimulus. (van der Kolk et al., 1991, p. 1670)

Trauma during early childhood may impact cognitive development such that maltreated children, for example, have difficulty differentiating and expressing emotions (Guralnik & Simeon, 2001; Saarni, 1999; van der Kolk et al., 1991). These deficiencies prevent the communication of internal experience and interfere with the ability to solicit interpersonal support. Thus, unexpressed feelings may be transformed and expressed physically through self-harming behaviour.

Reports repeatedly refer to the overwhelming sense of isolation and feelings of unworthiness and unlovability (Favazza, 1996; Graff & Mallin, 1967; Pattison & Kahan, 1983; Simpson, 1980; Simpson & Porter, 1981; Walsh & Rosen, 1988) that are pervasive among self-harming individuals. Fifty-four percent of a sample of 229 females canvassed in a voluntary survey selected the adjective "miserable" to describe their childhood (Favazza & Conterio, 1989). In this same sample, 62% reported childhood abuse -- 29% experienced both sexual and physical abuse, while 17% suffered only sexual abuse and 16% only physical abuse. For 61%, anger was the most common feeling within the family and 91% experienced regular suppression of feelings within the family (Favazza & Conterio, 1989). The high rates of victimization among self-harmers is hypothesized to be related to the interpersonal and intimacy difficulties, dissociative states, depersonalization, sense of body alienation, and poor body image frequently reported in the literature (Cross, 1993; Raine, 1982; Ross & McKay, 1979; Simpson, 1980;
Suyemoto, 1998; Walsh & Rosen).

Social Factors

In addition to demonstrating an increased incidence of self-harm among individuals in psychiatric, residential, and correctional institutions, literature since the 1960's has documented numerous instances of self-harm contagion within these group situations (Chowanec et al., 1991; Fennig et al., 1995; Haines et al., 1995; Hartman, 1996; Matthews, 1968; Offer & Barglow, 1960; Raine, 1982; Ross & McKay, 1979; Simpson, 1980; Walsh & Rosen, 1985, 1988).

According to Favazza (1996), "Forced institutionalization ... often creates feelings of desperation, demoralization, despair, and boredom among inmates, who may resort to self-mutilation to deal with these feelings. Also, the crowding together of persons over extended periods of time facilitates the outbreak of all sorts of epidemics...." (p. 167). It is important to note that individuals who find themselves institutionalized tend to manifest higher levels of psychopathology as well.

Offer and Barglow (1960), describing a three-day period on an adolescent psychiatric unit during which eight adolescents cut themselves, hypothesize that peer group competition, hospital personnel, and individual psychopathology play important roles in this epidemic. In a study at a Canadian correctional institution for adolescent girls, Ross and McKay (1979) found that 86% of the girls engaged in self-harming behaviour. In fact, the girls in this study even held "carving parties." They cite peer group rituals, institutional rules and regulations (especially disciplinary), staff anxiety, secondary gain, and the restrictiveness of the setting as important factors contributing to the high rate of self-harm. In a study of 85 outpatient drug abusing adolescent females, Schwartz et al. (1989) found that 48% engaged in nonsuicidal self-harm consisting of cutting or carving, 49% of the 48% also burned themselves, and 17% self-tattooed.
Twenty percent of the self-harmers initiated their self-harm only after entering treatment for substance abuse.

In order to empirically test the hypothesis that self-harm occurs in cluster patterns, Walsh and Rosen (1985) collected data over a one-year period at a residential and day treatment facility. Their findings substantiated the contagion hypothesis and supported the contention that adolescents were triggering the behaviour in each other. Interestingly, they also investigated other categories of behaviour such as aggression, suicidal talk/threats, substance abuse, and psychiatric hospitalization, and found no significant results. Other research has demonstrated that the self-harming incidents tend to cluster around times of change in the milieu, such as staff shift turnover, therapist holiday, and that generally a few individuals with greater psychopathology and higher social status are found to be at the centre of the activity (Ghaziuddin et al., 1992; Rosen et al., 1990; Walsh & Rosen, 1985, 1988).

Evidence of only one article mentioning contagion within a nonclinical, noninstitutionalized population was found, although anecdotal evidence has referred to dare games that involve group of youths who self-harm through, for example, "erasing" their skin until it bleeds. Lena and Bijoor (1990) document a case study of a Canadian adolescent girl who was playing a game of "chicken" with her friends in which they were cutting their arms and legs superficially with razor blades, pins, and knives. These authors posit that undersupervised young adolescents who have limited access to facilities (i.e. circumstances often found around housing projects) and experience boredom are at greater risk for these types of dare games. Fennig et al. (1995) investigated an "outbreak" of self-harm in a secondary school setting and found, contrary to much of the literature, that the majority of the adolescents engaging in this behaviour did not exhibit any severe overt psychopathology. Their findings indicate internalizing patterns of
symptomology including depressive and anxiety traits. A majority of these self-harming adolescents possessed high peer status and excelled academically. Fennig et al. suggest that the behaviour was initiated by a "hard core' of initiators with more severe psychopathology [who then] 'induced' the behaviour in the more passive and less disturbed subjects" (p. 403).

Developmental Factors

Although the conceptualization of adolescence as a period of necessary turmoil has been disputed in recent years (Arnett, 1999; Powers et al., 1989; Schonert-Reichl & Offer, 1992), adolescence remains a time in which individuals may experience stress as a result of the myriad of emotional, physical, and cognitive changes that occur. The task of coping with these changes can become overwhelming. Self-harm has been found to originate during this developmental period, leading researchers to speculate that the concomitant life stress brought on by these changes may create vulnerabilities in some adolescents (Favazza & Conterio, 1989; Ross & McKay, 1979; Walsh & Rosen, 1988).

Within a discussion of development, psychodynamic conceptualizations of the factors that contribute to self-harm are worthy of mention, although a complete review of the literature is beyond the scope of this investigation. Object relational theorists suggest that individuals who engage in self-harming behaviour are unable to individuate from their mothers and develop a cohesive sense of self in the context of body care and soothing (Cross, 1993; Doctors, 1981; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Pao, 1969; Suyemoto & Macdonald, 1995; Suyemoto, 1998). This inability to develop a stable identity results in a split between self and body as they fail to establish clear ego boundaries. In an early case study, Kafka (1969) hypothesized that, by engaging in self-harming behaviours, the body is being used as a transitional object, a "potential security blanket" (p. 209). Simpson (1980) refers similarly to a
patient's blood, stating, "[She] treated herself... as a not quite living object, or at least considered parts of her body as something other than her own living tissue" (p. 210). The skin becomes a source of satisfaction that is lovingly cared for as an object (through self-injury). Raine (1982) refers to the skin as the "simplest body boundary" (p. 5) through which the outside world and relationship with the mother are mediated. With regard to self-mutilative behaviour, Raine (1982) states,

"It is probably that these patients have not had adequately satisfying experiences with the mother in this early stage.... In the early stages of development, skin and oral contact with the mother give the child pleasure, enabling it to relax into sleep, with its temporary dissolution of the body image, the loss of ego boundaries, and the feeling of merging with the mother, the situation often perceived by disturbed adults as tantamount to death." (p. 6).

Researchers have referred to the regressive function of self-harming behaviour and the related fear held by some self-harmers of becoming an adult (Feldman, 1988; Lester, 1972; Novotny, 1972; Ross & McKay, 1979; Simpson, 1980; Walsh & Rosen, 1988). Rhythmic and self-stimulatory behaviour is a normal common activity among infants and toddlers as a method of assuring body boundaries and self-soothing. However, faced with the changes and conflicts of puberty, some individuals may regress to a preoedipal developmental stage during which satisfaction occurs in the context of tactile-kinesthetic stimulation (Favazza, 1996; Feldman, 1988; Ross & McKay, 1979). Such individuals may also be expressing the desire to be cared for like a child. Other researchers suggest that self-harmers seek relief nonverbally through self-injury due to developmental injuries (i.e., maternal deprivation) in preverbal stages (Graff & Mallin, 1967). Pao (1969) posited that self-harming individuals have significant deficits in early
stages of ego development and therefore use primitive ego defenses to compensate. He hypothesized that upon cutting, an individual entered an altered ego state, described as akin to dissociation or depersonalization.

Other researchers in the psychodynamic area refer to psychosexual explanations for the behaviour including: gender identity confusion, extreme sexual anxiety, symbolic castration or phallic conflict, sexual gratification, self-stimulating masturbatory activity, and oral rage (Cross, 1993; Daldin, 1988; Doctors, 1981; Favazza & Conterio, 1989; Feldman, 1988; Graff & Mallin, 1967; Hibbard, 1994; Kafka, 1969; Novotny, 1972; Pao, 1969; Raine, 1982; Ross & McKay, 1979; Simpson, 1980). Several researchers have reported negative reactions to menarche as well as correlations between abnormal menstruation and self-harming behaviour (Doctors, 1981; Favazza & Conterio, 1989; Rosenthal et al., 1972; Simpson, 1975; Yaryura-Tobias, Neziroglu, & Kaplan, 1995).

For some adolescents, the physical changes of puberty are accompanied by corresponding preoccupation with physical appearance and experiencing the body as an object. This may lead to alienation from the body, especially in those individuals who have suffered abuse, serious illness, or surgery (Cross, 1993; Daldin, 1988, Doctors, 1981; Suyemoto, 1998; Walsh & Rosen, 1988). Within this body of literature, self-harm has been conceptualized as an attempt to turn passive fear of penetration into active control of sexual tension (Doctors, 1981).

Psychological Factors

Self-harm is often comorbid with psychopathology. Self-harming individuals may exhibit internalizing problems (acting in, towards self) and/or externalizing problems (acting out, towards environment), such as anxiety, depression, low self-esteem, somatization, impaired body image, affect dysregulation, antisocial behaviour, substance abuse, adjustment difficulties,
suicidal ideation and attempt, and anger control problems (Bennum, 1983; Chowanec et al., 1991; Darche, 1990; Doctors, 1981; Favazza & Conterio, 1989; Favazza et al., 1989; Garrison et al., 1993; Ghaziuddin et al., 1992; Haines & Williams, 1997; Hastings et al., 1996; Herpetz, 1995; Kahan & Pattison, 1984; Pattison & Kahan, 1983; Patton et al., 1997; Ross & Heath, 2002; Ross & McKay, 1979; Schwartz et al., 1989; Simpson & Porter, 1981; Walsh & Rosen, 1988). Due to the cross-sectional and retrospective nature of most studies, however, no causal interpretations can be made. Chowanec et al. (1991) argue that the "practice of categorizing adolescent psychopathology as either internalizing or externalizing does not [adequately] capture these youth. They defy such categorization. The study of the overlap ... appears warranted" (p. 206). Similarly, Parker et al. (1998) noted that the chance that an individual in their study engaged in self-harm was significantly increased when exhibiting both "acting out" (behavioural problems) and "acting in" (behavioural inhibition) patterns.

Research findings indicate that self-harmers tend to be angry, both intrapersonally and interpersonally (Bennum, 1983; Chowanec et al., 1991; Offer & Barglow, 1960; Pattison & Kahan, 1983; Ross & McKay, 1979; Simpson & Porter, 1981). Associations with both depressive symptomatology and anxiety have been consistently demonstrated (Bennum, 1983; Darche, 1990; diClemente et al., 1991; Garrison et al., 1993; Ghaziuddin et al., 1992; Haines et al., 1995; Herpetz, 1995; Pattison & Kahan, 1983; Patton et al., 1997; Raine, 1982; Ross & McKay, 1979; Walsh & Rosen, 1988) as well as with low self-esteem and extreme self-dislike (Bennum, 1983; Darche, 1990; Graff & Mallin, 1967; Simpson, 1980; Walsh & Rosen, 1988). Poor body image and body disaffection have been noted to be related to self-harming behaviour (Darche, 1990; Favazza, 1992; Orbach & Mikulincer, 1998; Simpson, 1980; Walsh & Rosen, 1988).
High levels of negative affect exhibited in self-harming individuals lends further support to the conceptualization of the behaviour as a mechanism for regulation and coping with emotions (Favazza, 1998; Herpetz, 1995; Pattison & Kahan, 1983; Raine, 1982; Simpson, 1975; Suyemoto, 1998; van der Kolk et al., 1991; Walsh & Rosen, 1988). When asked retrospectively to report emotional states just before and after engaging in self-harming behaviour, individuals report similar feelings of psychic distress (Briere & Gil, 1998; Conterio & Lader, 1998; Favazza, 1996; Walsh & Rosen, 1988). Depression or sadness, anhedonia, anger, anxiety or tension, emptiness, and loneliness are repeatedly cited as prior affective states, while relief and shame are most commonly referred to as post-behaviour states (Briere & Gil, 1998; Favazza, 1996; Herpetz, 1995; Pattison & Kahan, 1983; Schwartz et al., 1989; Walsh & Rosen, 1988). Further, overwhelming or intense and uncontrollable emotion is reported by many self-harmers. Lack of feeling or an inability to differentiate and/or verbalize feelings, also referred to as alexithymia, is mentioned as being a common experience among self-harming individuals although little empirical research exists to confirm this in adolescents (Favaro & Santonastasoaso, 1998; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Schwartz et al., 1989; Simpson, 1975; Simpson, 1980; Zlotnick et al., 1996).

Conversely, an association has been demonstrated between "acting out" or behavioural difficulties and self-harm (Chowanec et al., 1991; Hastings et al., 1996; Patton et al., 1997; Ross & McKay, 1979; Walsh & Rosen, 1988; Winchel & Stanley, 1991). This may partially underlie the high incidence of self-harm among individuals in correctional and penal institutions. Whereas previous research has indicated a higher prevalence of internalizing disorders among females and externalizing disorders among males, Patton et al. (1997) found that frequent
antisocial behaviour was significantly associated with self-harm in females and not in males. Moreover, a significant relation was found between frequent substance use and self-harm among females in this study. Similarly, results from a study by Hastings et al. (1996) revealed that girls with conduct disorder reported significantly higher frequency of coping by physically hurting themselves than either boys with or without conduct disorder and girls without conduct disorder. Substance abuse is commonly evidenced among self-harming individuals (Darche, 1990; Favazza, 1996; Favazza et al., 1989; Graff & Mallin, 1967; Haines et al., 1995; Pattison & Kahan, 1983; Ross & McKay, 1979; Schwartz et al., 1989; Simpson, 1980; Simpson & Porter, 1981).

Several researchers conducting group comparisons have reported that, when comparing self-harmers to non-self-harmers within a psychiatric context, self-harming individuals have been found to demonstrate more severe psychopathology than non-self-harmers (Bennum, 1983; Briere & Gil, 1998; Chawanec et al., 1991; Darche, 1990; Simpson, 1980; Zlotnick et al., 1999). Lack of a control group and/or comparison group in many studies precludes a more thorough analysis of this. It should be noted, however, that the majority of studies on self-harm involve inpatient populations and therefore it is expected that results are biased toward more severely disordered patients. A relative dearth of information is available on psychological correlates of self-harm within the general population.

**Understanding Adolescent Self-Harm: Theoretical and Methodological Issues**

The remainder of this chapter is concerned primarily with self-harming behaviour in the adolescent age group. It is only recently, over the past few decades, that an increasing volume of research is being conducted in this area. The first section provides a background for the study of self-harming behaviour and traces the growing interest in the phenomenon. Next,
methodological issues and corresponding limitations are explored with a particular emphasis on adolescent research. Finally, a rationale is provided for the use of the broad term "self-harm" that highlights the importance of both seeking a youth perspective and maintaining an awareness of ethical considerations.

Adolescent Studies

The 1960's marked the beginning of professional interest in the phenomenon of self-harm. Studies from this period focus on self-harm as "wrist cutting syndrome" and on "self cutting" specifically (Clenendin & Murphy, 1971; Crabtree & Grossman, 1974; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Matthews, 1968; Novotny, 1972; Offer & Barglow, 1960; Pao, 1969; Rosenthal et al., 1972). A distinctly psychoanalytic perspective was most often employed and the majority of these studies involved case study examination or exploration of the "contagion effect" (epidemics of self-mutilation) among small numbers of psychiatric adolescent inpatients. Interest emerged from the finding among mental health professionals that hospitals were reporting an influx of chronic patients who slashed their wrists more than once, but did not express suicidal intent. Research articles at this time delineated a profile of the typical "wrist-slasher" and there was considerable consensus among researchers as to what this looked like (Clenendin & Murphy, 1971; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Offer & Barglow, 1960; Pao, 1969). Nevertheless, it was discovered that most patients also cut other parts of their bodies, demonstrating that the "wrist cutting syndrome" was not just about wrist-cutting. Although in these early investigations, researchers acknowledged an adolescent onset in the behaviour, the samples were heterogeneous and no attempts were made to understand self-harm behaviour specific to adolescence.
In the late 1970's, following the publication of *Self-Mutilation* (Ross & McKay, 1979) which included a study of adolescent self-harm at a Canadian correctional institution, research perspectives widened and studies were conducted investigating the biological underpinnings of the behaviour (Winchel & Stanley, 1991), diagnostic decision-making (Favazza, 1998; Kahan & Pattison, 1984; Pattison & Kahan, 1983), epidemiology (Feldman, 1988; Garrison et al., 1991), precipitating factors and concomitant behaviours (Briere & Gil, 1998; Darche, 1990; Favazza & Conterio, 1989; Simpson & Porter, 1981; Walsh & Rosen, 1988), and theoretical models (Bennum, 1984; Favazza, 1989; Suyemoto & MacDonald, 1995; Suyemoto, 1998). Adolescent self-harm was finally recognized as worthy of study in its own right. Research followed in which adolescent samples were utilized. Nevertheless, it should be noted that even in contemporary studies, researchers continue to use small samples of hospitalized or incarcerated youth and often take a non-empirical approach (Darche, 1990; diClemente et al., 1991; Hartman, 1996; Inch et al., 1995; Simpson & Porter, 1981; Solomon & Farrand, 1996).

To this author's knowledge, only two large-scale studies exist that have adequately differentiated among nonsuicidal, self-harming, and suicidal adolescents in an exclusively adolescent community-based sample (Garrison et al., 1993; Patton et al., 1997). Other small-scale investigations of adolescent self-harm have been undertaken, but all involved clinical or institutionalized samples (i.e., Darche, 1990; Ghaziuddin et al., 1992; Inch et al., 1995; Ross & McKay, 1979; Schwartz et al., 1989; Simpson & Porter, 1981; Walsh & Rosen, 1988) or have been purely descriptive (i.e., Daldin, 1988; Doctors, 1981; Hartman, 1996; Solomon & Farrand, 1996). Taken together, it appears there is a need to increase the empirical database in this area, with a focus on examining self-harm among adolescents within the general population.
The importance of moving toward a greater understanding of adolescent self-harm is highlighted by Millstein, Pederson, and Nightingale (1993),

It is well known that many of the behaviours associated with adult morbidity and mortality begin during the adolescent years. Intervening during adolescence gives us the opportunity not only to prevent the onset of health-damaging behaviours, but also to intervene with health-compromising behaviours that may be less firmly established as part of the lifestyle. (p. 6).

Despite over half a century of research efforts, adolescent self-harm remains understudied and poorly understood.

**Methodological Issues**

Aside from conceptual difficulties, investigations in the area of self-harm suffer from several methodological problems. First, as aforementioned, a review of the extant literature reveals a myriad of definitions along with similar terminology to describe different sets of behaviours. As can be ascertained, researchers have been inconsistent by including suicide attempt or indirect self-harm together in the same category with direct self-harm with no suicidal intent despite the fact that, "In research on adolescents, there is a special need for differentiation of adolescents engaging in suicidal behaviour from those who have inflicted nonsuicidal physical injury upon themselves.... These acts merit separate consideration; their link to suicidal behaviour is far from clear" (Borges et al., 1995, p. 232).

Second, the extant research suffers from a dearth of empirical evidence or results. A majority of investigations have followed either a case study or other descriptive-type format when examining and discussing self-harm and therefore have not added to the empirical database on the subject (e.g., Daldin, 1988; Doctors, 1981; Grunebaum & Klerman, 1967; Kafka, 1969;
Moreover, although a few empirical studies have been conducted examining self-harm, these studies have utilized nonrepresentative and small heterogeneous samples (e.g., Darche, 1990; deYoung, 1982; DiClemente et al., 1991; Graff & Mallin, 1967; Rosenthal et al., 1972; Schwartz et al., 1989; Simpson, 1975), thereby limiting the generalizability of the results to a wider population of adolescents. Additionally, resulting from a focus on the phenomenon as it occurs in females, little information is available on males who engage in self-harming behaviour.

A third and related methodological limitation is the fact that research has often focused on self-harm among inpatient, psychiatric, and institutionalized individuals and groups and has rarely investigated the phenomenon in a community sample, despite evidence stating that many individuals who self-harm never come to the attention of professionals. This may be particularly true for adolescents given their potential inhibitions about disclosing personal information to adults, their need for privacy and fears surrounding confidentiality, and the generally accepted notion within the public that adolescence is inherently turbulent (Offer & Schonert-Reichl, 1992; Powers et al., 1989; Schonert-Reichl & Offer, 1992). Findings from specific populations such as adolescents with Borderline Personality Disorder or Conduct Disorder cannot be generalized to apply to other individuals, limiting the available information on self-harm. Further, many studies do not include a comparison group, making it difficult to draw conclusions regarding differences between groups.

A fourth salient limitation evident in the literature on self-harm is that almost all studies have utilized adult populations or mixed adult-adolescent populations (e.g., Bennum, 1983; Briere & Gil, 1998; de Young, 1982; Herpetz, 1995). Although the behaviour has been found to have its onset in adolescence (Favazza et al., 1989; Kahan & Pattison, 1984; Pattison & Kahan,
1983), research involving an exclusively adolescent sample is rare. This gap in the literature is particularly unfortunate given that adolescence represents a distinct developmental period that requires specialized knowledge (Irwin, 1993; Walsh & Rosen, 1988). Moreover, as expressed by Walsh and Rosen, "It is important to study the behaviour during its period of onset. This should provide information not revealed by studies of adult[s] ... for whom the behaviour has already become a sustained habit" (1988, p. 57).

Finally, few measures have been developed to assess self-harming behaviour specifically and no information on their psychometric properties is available although this has been recommended (Zlotnick et al., 1999). While some researchers have based their results on one self-harm item from an existing questionnaire or devise a single question regarding self-harm behaviour (Briere & Gil, 1998; diClemente et al., 1991; Patton et al., 1997), other researchers have devised their own more comprehensive surveys (e.g., Deiter, Nicholls, & Pearlman, 2000; Favazza & Conterio, 1988; Lloyd, 1998; Schwartz et al., 1989; Zlotnick et al., 1996). Given the various measures utilized to assess self-harm, cross-study comparison is impossible.

Adolescent Perspective

For the purposes of the present investigation, the term "self-harm" is utilized as a broad construct that encompasses a range of self-destructive behaviours. A broad referent was selected for two reasons. First, it is the view of the researcher that it is important to use youth perspective to inform research efforts. Rather than providing a definition of what it means to self-harm followed by a prescriptive closed list of actions that might be deemed self-injurious by clinicians and researchers, the researcher sought the conceptualizations of self-harm held by the adolescents themselves. Zaslow and Takanishi (1993) refer to "the need to collect data that permit adolescents to describe their own perceptions of their experiences...." (p. 190). This
seems particularly pertinent given the dearth of information on the nature of self-harm among nonclinical community adolescents. Furthermore, inherent in the prescriptive approach is always the fact that individuals engage in behaviours not listed and this can serve to be invalidating while simultaneously reducing the validity of the obtained results.

Second, ethical considerations figured strongly in the decision. More specifically, as mentioned by Patton et al. (1997) and Borges et al. (1995), to avoid suggesting a series of self-harming behaviours to a vulnerable subgroup of adolescents, the researcher chose to incorporate a partially youth-driven conceptualization of self-harm that allows for open-ended response. This inclusion of an adolescent perspective is supported in the literature on youth mental health and health promotion (Millstein, 1993; Millstein et al., 1993; Zaslow & Takanishi, 1993).

Summary

Although the research base on self-harming behaviour has grown steadily over the past few decades, the phenomenon remains poorly understood, especially as it occurs in adolescents. The paucity of available information is related, in part, to the lack of systematic and empirical study of the behaviour. Importantly, adolescent' own perspectives and conceptualizations of self-harm must be utilized to inform research and effective practice. Much of the current knowledge on self-harm is derived from early psychoanalytic conceptualizations, attempts to distinguish suicidal self-harm from nonsuicidal self-harm, and from studies investigating the correlates among psychiatric and incarcerated adults or mixed adult-adolescent populations. Longitudinal studies would be beneficial to enhance understanding of predictive factors and the etiology of the behaviour. Further exploration of the biological and physiological, social and cultural, familial and environmental, developmental, and psychological factors involved in the development and maintenance of self-harm is needed. An expanded understanding of the role...
these factors play would provide a link between prevention and intervention, and perhaps assist in resolving diagnostic issues. Research involving community school-based adolescents is vital. Understanding the behaviour as it occurs in nonclinical population will help to inform prevention and intervention efforts as these individuals might manifest less severe psychopathology or adjustment difficulties.
CHAPTER 3

Statement of Problem

Research investigating self-harming behaviour in the general school-based adolescent population is scant. Numerous investigations of suicidal behaviour have been undertaken in this population, but relatively little research attention has been devoted to nonsuicidal deliberate self-harm among adolescents. Given that self-harming behaviour most often has its genesis in adolescence (Favazza, 1989; van der Kolk et al., 1991), the importance of understanding the phenomenon as it appears in this developmental period is indisputable. Moreover, data from recent research suggest that the prevalence of self-harm is considerably higher than previously thought (Garrison et al., 1993; Lloyd, 1997; Patton et al., 1997).

Four major issues emerging from the extant literature on self-harm were addressed within the context of the present investigation. First, the research on self-harm is rife with conceptual confusion arising from the multitude of different ways that self-harm is defined (Walsh & Rosen, 1988; Winchel & Stanley, 1991). Given the terminological and conceptual confusion and additional methodological problems inherent in the research on self-harm, it is difficult to draw any clear and practical conclusions. Second, many studies examine self-harm in adult populations or in mixed adult-adolescent populations despite the fact that adolescence is a distinct developmental period and, as such, the conceptualization and enactment of various behaviours may differ from that of adulthood (Hamburg & Takanishi, 1989; Irwin, 1993; Millstein et al., 1993). Third, the comparatively few purely adolescent studies examine self-harming behaviour within forensic, inpatient, and/or psychiatric populations or look solely at a specific type of self-harm such as substance abuse or suicide attempt. Minimal research has been conducted within the "normal" adolescent population. Results from these specific populations
(i.e., psychiatric, prison) cannot be generalized across an adolescent community or school-based population. Finally, although important in furthering our understanding of adolescent self-harm, the research fails to take into account adolescents' own constructions of self-harm. In establishing priorities for research on adolescence, Zaslow and Takanishi (1993) refer to the "tendency to bypass the step of collecting descriptive and qualitative data that reflect adolescents' organizations of their own experiences" (p. 190; italics added). Further, they suggest that "the failure to take such a step may lead to a flawed understanding of normal development; it may also limit the effectiveness of interventions."

This investigation was meant to extend the research by addressing these four issues. The sample utilized in the investigation is derived from a population of "normal" community high-school aged adolescents and thus results provide information about self-harm among "normal" adolescents. The research, replete with clinical conceptualizations and classification systems of self-harm, provides only a partial glimpse into the phenomenon. This study addresses the point made by Zaslow and Takanishi (1993) by incorporating an adolescent perspective.

Beyond addressing the aforementioned methodological issues, this study expands the understanding of adolescent self-harming behaviour by identifying and describing the magnitude, nature, and experience of self-harm, the underlying motivations of the behaviour, and examining potential gender and age differences. The current investigation provides insight into the psychological adjustment and anger expression of adolescents that engage in self-harming behaviour as compared to those who do not engage in this behaviour. Further, this study extends previous research by including a measure of social desirability in order to control for this potential confound. This is particularly important because only self-report measures are utilized.
Research Questions, Hypotheses, and Rationales

Question One:

What do adolescents perceive to be self-harming and what is the nature of their experience with self-harm?

Rationale. Research involving adolescents frequently fails to take into account an adolescent perspective. Several researchers (i.e., Millstein, 1993; Zaslow & Takanishi, 1993) refer to the need to utilize a combination of quantitative and qualitative approaches to provide a more encompassing view of adolescent experience. With regard to self-harm specifically, an understanding of what the salient issues are from an adolescent viewpoint is imperative in order to address prevention and intervention. According to Millstein (1993), "Attending to adolescents' viewpoints does more...than simply provide us with interesting data or information for use in improving interventions. More importantly, it supports the underlying philosophy that the beliefs and attitudes of youth are inherently important and worthy of consideration" (p.114). The approach taken in the present study of allowing the adolescents themselves to determine what constitutes self-harm minimizes conceptual confusion and renders the research more meaningful as it is grounded in the reality faced by contemporary adolescents as it is viewed by them. A dearth of studies investigate adolescent self-harm and among these even fewer examine self-harm in a nonclinical community population. As a result, limited information is available regarding the nature of self-harm for these youth. Results from the clinical population are utilized to inform researchers about the nature of the phenomenon, however these findings cannot be generalized. Thus, findings from the present investigation provide useful insight into the nature of adolescent self-harm within the general population.
'Question/Hypothesis Two:

2a) What is the prevalence of any general self-harming behaviour in males and females from the general adolescent school-based sample?

Rationale. Limited research has been undertaken to investigate the prevalence, nature, and description of self-harm within a nonclinical or "normal" adolescent population despite evidence suggesting that self-harming behaviour among adolescents has been increasing. For example, rates from the United States have shown the prevalence of self-mutilation to be increasing dramatically to an alarming level of 1.8% within the peak years of 15 to 35 years of age and 1% within the general population (Favazza, 1988, 1998; Favazza & Conterio, 1988). In a study conducted in 1988 using a sample of 245 18 and 19 year-old students in the midwestern United States, Favazza (personal communication, May 22, 2000) reported a prevalence of 17% for males and 12% for females, substantially higher than other findings. Lloyd (1997) reported a provisional prevalence rate of 39% using sample of 368 students in grades 9 through 12 in the southern United States. Results from British Columbia's 1998 Adolescent Health Survey II (McCreary Centre Society, 1999), indicate overall increases in self-destructive behaviours, such as illegal drug use, binge-drinking, smoking, disordered eating, and general recklessness or risk-taking (i.e., drinking and driving, sexual behaviour). Given the overall increase in adolescent self-harm and the fact that self-harming behaviour typically originates in adolescence (Favazza, 1989; van der Kolk et al., 1991), an improved understanding of the developmental pathway, magnitude, and nature of this problem is critical. This research represents an initial attempt to describe the phenomenon of self-harm in a school-based community sample of youth.
2b) What is the prevalence of major categories of self-harming behaviour in males and females in the "normal" adolescent school-based sample and is there a significant difference in the prevalence of types of self-harm between males and females?

Rationale. A majority of the research on self-harming behaviour utilizes female samples. Research involving males is often based on incarcerated/delinquent or psychiatric male samples. Minimal empirical research has been conducted examining gender differences in self-harm specifically, though it is more commonly stated that more females engage in self-harming behaviour than males (Favazza, 1996; Feldman, 1988; Patton et al., 1997). Research that has been conducted involving internalizing symptomology has found that females demonstrate higher levels and increased vulnerability to internalizing disorders (Leadbeater, Blatt, & Quinlan, 1995; Schonert-Reichl & Offer, 1992) whereas males demonstrate higher levels of externalizing disorders (Schonert-Reichl & Offer, 1992; Wangby, Bergman, & Magnusson, 1999). Psychological problems and symptoms that have been found to be comorbid with self-harming behaviour are more often internalizing such as depression, anxiety, and eating disturbances (Bennum, 1983; Cross, 1993; Darche, 1990; Favazza, 1988, Favazza et al., 1989) and therefore it is hypothesized that females will report significantly greater levels of any self-harming behaviour. Moreover, gender differences in the prevalence of related constructs (i.e., distress, suicide attempt) have been demonstrated (Allgood-Merten, Lewinsohn, & Hops, 1990; Langhinrichsen-Rohling et al., 1998; Leadbeater et al., 1995; Schonert-Reichl & Offer, 1992) in support of this hypothesis. An increased understanding of gender differences in the expression of psychological problems is critical in order to address prevention, screening, and early intervention efforts.
Question/Hypothesis Three:

It is expected that group differences will exist between self-harming adolescents and non-self-harming adolescents with regards to psychological adjustment, anger discomfort, and suicide history.

Rationale. Given the paucity of research utilizing adolescent participants from the "normal" school population, very little information exists regarding the psychological characteristics and general profile of self-harming adolescents as compared to non-self-harming adolescents. Given that self-harming behaviours have their peak incidence in adolescence (Conterio & Lader, 1998; Cross, 1993; Favazza, 1998), an improved understanding of these behaviours and of the psychological adjustment of adolescents who engage in self-harming behaviour is critical. For the purposes of screening and identification of these adolescents, it is useful to first conduct a more broadly based evaluation of psychological adjustment. Research suggests that adolescents who engage in self-harm are likely to demonstrate some degree of psychopathology or maladjustment.

3a) It is expected that study participants who engage in self-harm will demonstrate increased levels of emotional distress and anger discomfort when compared to a group of non-self-harming adolescents. Self-harming adolescents are expected to be more likely to have a history of suicide attempt. Further, it is expected that self-harming adolescents will report lower self-esteem than those individuals who are not self-harming.

Rationale. These characteristics have been found in some studies to be related to self-harming behaviour (see Bennum, 1983; Darche, 1990; Doctors, 1981; Favazza & Conterio, 1989; Favazza et al., 1988; Ghaziuddin et al., 1992; Haines & Williams, 1997; Herpetz, 1995; Ross & Heath, 2002; Ross & McKay, 1979; Simeon & Favazza, 2001; Simpson & Porter, 1981;
Walsh & Rosen, 1988). Research has indicated that individuals who engage in various types of self-harm may manifest higher levels of anger and hostility, especially of the intra-punitive type (Bennum, 1983; Darche, 1990) and emotional distress (Bennum, 1983; Darche, 1990; Garrison et al., 1993; Raine, 1982; Ross & Heath, 2002), and may suffer from low self-esteem (Darche, 1990; Favazza, 1996; Favazza & Conterio, 1989). Moreover, previous research has found a positive association between self-harm and suicidal ideation and suicide attempt (Garrison et al., 1993; Patton et al., 1997; Schwartz et al., 1989; Solomon & Farrand, 1996; Walsh & Rosen, 1988). Self-harming behaviour has been conceptualized in the research literature as a coping mechanism (Favazza, 1996, 1998; Klingman & Hochdorf, 1993; Pattison & Kahan, 1983; Suyemoto, 1998). This aspect of the behaviour may be particularly pertinent when considering that adolescents are forced to deal with numerous simultaneous changes in a relatively short period of time (i.e., cognitive, physical, social, and psychological). Identified in the literature as a mode of affect regulation, self-harming behaviour is therefore expected to be related to emotional adjustment and anger expression. Insight into the way that self-harming adolescents respond to conflict and negative affect may have important implications in terms of prevention and intervention efforts. Investigation of these emotional, psychological, and psychosocial characteristics is likely to provide additional information to aid in the understanding of this behaviour and the risk factors involved.

3b) Are there differences in antisocial behaviour and anger control (externalizing symptom patterns) between those adolescents who self-harm versus those who do not?

Rationale. Although research on self-mutilation has been conducted with individuals with antisocial/conduct problems, it has focused solely on incarcerated and inpatient samples and the bulk of this research has utilized adult or mixed adolescent-adult samples. Researchers have
found that individuals in these institutionalized situations struggle with the lack of control available to them within their environment and that this promotes self-harming behaviour (Chowanec et al., 1991; Favazza, 1996; Walsh & Rosen, 1988). Whether adolescents in the general population who demonstrate antisocial behaviour and problems with anger control also engage in self-harming behaviour has not been determined although anecdotal evidence supports that behaviour disordered youth in residential treatment settings are more likely to self-harm due to a contagion effect in these settings. In their investigation, Hastings et al. (1996) found that girls with conduct disorder reported higher levels of psychological distress and demonstrated a higher likelihood of engaging in self-harming behaviour than either girls without conduct disorder or boys with and without conduct disorder. Garrison et al. (1997) found a clear association between self-harming behaviour and antisocial behaviour for adolescent females only; frequent and multiple antisocial behaviours were associated with significantly high risks for self-harm. This study investigated suicidal behaviour and therefore included recklessness and self-poisoning which may have added to the relation between antisocial behaviour and self-harm. It appears that overlap does exist between antisocial behaviour and self-harm, but research is limited and inconclusive. To further our understanding of this problem, it is important understand the links between antisocial behaviour and self-harm as this information will have an impact on the identification of self-harming youngsters as well as on prevention and intervention efforts.

Question Four:

Considering the demographic, background, and psychological variables in a multivariate fashion, which variables significantly discriminate between self-harming individuals and non-self-harming individuals? How do the variables contribute differentially to predict group
Rationale. Identifying the variables that best predict group membership helps to extend the current understanding of both the risk factors and the nature of adolescent self-harm. Increased knowledge of the differential contribution of various variables is critical, especially when considering or planning proactive strategies (i.e., prevention efforts).
CHAPTER 4

Method

Participants

A total of 609 students attending a public high-school in a large western Canadian city were recruited to participate in the study. Students were recruited from 24 mainstream classrooms and one alternate classroom operating within the school. Of the 609 consent forms that were distributed, 448 were returned, yielding a 74% rate of return. A total of 426 students (i.e., 70% of the total population solicited that received parental permission) who were present on the day of data collection, constituted the sample for the present investigation. Two questionnaires were removed from the analyses due to missing information. Hence, data from 424 adolescents (236 females, 188 males) were utilized in the analyses.

Adolescents ranged in age from 13 to 18, with a mean age of 15.3 years (SD = 1.06). As can be seen in Table 2, with respect to ethnicity and family composition, most participants reported a European background (70%) and lived in a two-parent home (75%; 65% in biologically intact families, 10% in blended families). Analyses examining gender differences on sociodemographic variables indicated that there was a significantly greater proportion of females than males in the sample, $\chi^2 (1, N = 424) = 5.43, p < .05$. No significant gender differences were found for age, ethnicity, family composition, or parental educational level. Note that regarding parental level of education, adolescents that reported not knowing their mother's educational level ($n = 27$) or their father's educational level ($n = 47$) were excluded from these analyses.
Table 2

Sociodemographic Characteristics of Participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total n (%)</th>
<th>Male n (%)</th>
<th>Female n (%)</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>424</td>
<td>188</td>
<td>236</td>
<td>(\chi^2(1) = 5.43, p &lt; .05)</td>
</tr>
<tr>
<td>Age (years) N = 422</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>15.34</td>
<td>15.29</td>
<td>15.39</td>
<td>(t(422) = -1.02, p = ns)</td>
</tr>
<tr>
<td>SD</td>
<td>1.06</td>
<td>1.07</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>13.00-18.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity N = 413</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/European</td>
<td>296 (71.7%)</td>
<td>138 (75.4%)</td>
<td>158 (68.7%)</td>
<td>(\chi^2(6) = 7.12, p = ns)</td>
</tr>
<tr>
<td>Asian</td>
<td>53 (12.8%)</td>
<td>21 (11.5%)</td>
<td>32 (13.9%)</td>
<td></td>
</tr>
<tr>
<td>East/West/South Indian</td>
<td>9 (2.2%)</td>
<td>4 (2.2%)</td>
<td>5 (2.2%)</td>
<td></td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>9 (2.2%)</td>
<td>3 (1.6%)</td>
<td>6 (2.6%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>8 (1.9%)</td>
<td>3 (1.6%)</td>
<td>5 (2.2%)</td>
<td></td>
</tr>
<tr>
<td>Ethnic mix</td>
<td>30 (7.3%)</td>
<td>9 (4.9%)</td>
<td>21 (9.1%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8 (1.9%)</td>
<td>5 (2.7%)</td>
<td>3 (1.3%)</td>
<td></td>
</tr>
<tr>
<td>Family Composition N = 422</td>
<td></td>
<td></td>
<td></td>
<td>(\chi^2(2) = .68, p = ns)</td>
</tr>
<tr>
<td>Two-parent family</td>
<td>318 (75.4%)</td>
<td>142 (76.3%)</td>
<td>176 (74.6%)</td>
<td></td>
</tr>
<tr>
<td>One-parent family</td>
<td>100 (23.7%)</td>
<td>43 (23.0%)</td>
<td>57 (24.2%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4 (1.0%)</td>
<td>1 (0.5%)</td>
<td>3 (1.3%)</td>
<td></td>
</tr>
<tr>
<td>Maternal Educational LevelN = 397</td>
<td></td>
<td></td>
<td></td>
<td>(\chi^2(5) = 1.59, p = ns)</td>
</tr>
<tr>
<td>Some high-school</td>
<td>20 (5.0%)</td>
<td>10 (5.8%)</td>
<td>10 (4.5%)</td>
<td></td>
</tr>
<tr>
<td>Graduated high-school</td>
<td>55 (13.9%)</td>
<td>24 (13.9%)</td>
<td>31 (13.8%)</td>
<td></td>
</tr>
<tr>
<td>Vocational/tech. school</td>
<td>14 (3.5%)</td>
<td>6 (3.5%)</td>
<td>8 (3.6%)</td>
<td></td>
</tr>
<tr>
<td>Some college/university</td>
<td>42 (10.6%)</td>
<td>16 (9.2%)</td>
<td>26 (11.6%)</td>
<td></td>
</tr>
<tr>
<td>Grad college/university</td>
<td>156 (39.3%)</td>
<td>72 (41.6%)</td>
<td>84 (37.5%)</td>
<td></td>
</tr>
<tr>
<td>Professional/graduate degree</td>
<td>110 (27.7%)</td>
<td>45 (26.0%)</td>
<td>65 (29.0%)</td>
<td></td>
</tr>
<tr>
<td>Characteristic</td>
<td>Total</td>
<td>Male (%)</td>
<td>Female (%)</td>
<td>Analysis</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------</td>
<td>----------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Paternal Educational Level N = 375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high-school</td>
<td>19 (5.1%)</td>
<td>6 (3.7%)</td>
<td>13 (6.1%)</td>
<td>$\chi^2 (5) = 2.54, p = ns$</td>
</tr>
<tr>
<td>Graduated high-school</td>
<td>50 (13.3%)</td>
<td>18 (11.2%)</td>
<td>32 (15.0%)</td>
<td></td>
</tr>
<tr>
<td>Vocational/tech. school</td>
<td>13 (3.5%)</td>
<td>6 (3.7%)</td>
<td>7 (3.3%)</td>
<td></td>
</tr>
<tr>
<td>Some college/university</td>
<td>34 (9.1%)</td>
<td>16 (9.9%)</td>
<td>18 (8.4%)</td>
<td></td>
</tr>
<tr>
<td>Grad college/university</td>
<td>137 (36.5%)</td>
<td>60 (37.3%)</td>
<td>77 (36.0%)</td>
<td></td>
</tr>
<tr>
<td>Professional/graduate degree</td>
<td>122 (32.5%)</td>
<td>55 (34.2%)</td>
<td>67 (31.3%)</td>
<td></td>
</tr>
</tbody>
</table>

**Procedures**

**Participant Recruitment**

Recruitment procedures for adolescent participants took place in the following manner. The researcher first approached counsellors at a public high-school to invite them to participate in the research project. Support for the study was secured with health and mental health professionals affiliated with the school. Permission was granted to conduct the study with participants from 25 classrooms. Meetings were held to discuss the purpose and procedure of the study with the school administrators and the counselling staff. Participant recruitment and the subsequent data collection occurred across the Career and Personal Planning classes (B.C. Ministry of Education, 1995). Career and Personal Planning classes were chosen because the curriculum in these courses primarily focus on health and well-being and they are courses in which school counsellors play an important role. The researcher met with school counsellors several times prior to data collection in order to discuss any issues regarding data collection procedures, methodology, and the purpose of the study. Additionally, the researcher offered to
debrief with the students both directly and indirectly by leading a workshop on stress and coping for 40 minutes of class-time, following 40 minutes of data collection (total class time is 80 minutes). The counsellors accepted this offer.

Parental/guardian consent forms providing information regarding the purpose of the investigation were distributed to students (see Appendix B) by the school counsellors. Written parental consent was required for participation. Prior to data collection, the researcher provided a student letter of introduction to the study to help students make an informed decision (see Appendix A). The researcher offered to meet with each class individually to introduce the study and distribute consent forms and student letters, however the counsellors indicated that they preferred to do this themselves because they believed it would be less disruptive to classroom teachers. The counsellors read through the letters with the students and explained that their participation was entirely voluntary, that they could withdraw from the study at any time, and that either participation or lack thereof would not affect their class standing. Additionally, the anonymity of the questionnaires and consequent confidentiality of the results was heavily emphasized.

To encourage participation, students in each class who returned completed permission forms (whether accepting or declining to participate) were entered into a contest to win a $15.00 gift certificate to a music store. A gift certificate draw was held in each of the participating classrooms following data collection for that classroom.

Data Collection

Data collection was undertaken by the principal investigator and by two trained research assistants. Training of the research assistants included an overview of the study's purpose and assessment procedures. As well, one research assistant with counselling experience was trained
to assist with the stress and coping workshops.

Prior to completing questionnaires, participating students were reminded of the purpose of the study. Anonymity and confidentiality of the study were emphasized as was the importance of honest and thoughtful responses. Students with parental consent were reminded both orally and in writing on the questionnaire cover page that participation was voluntary and they had the right to withdraw from the study at any time. They were told that completion of the questionnaire indicated their assent. Those students who did not return a consent form or who declined participation were asked to work on homework or sit silently. All students were given two related exercises (stress doodle page and lifestyle quiz) to work on following completion of the questionnaire, if they so wished.

The questionnaire package, containing a Questionnaire Cover Page, Background Information, Self-Harm Survey, Motivations Underlying Self-Harm Questionnaire, Optional Request For Help Form, Reynolds' Adolescent Adjustment Screening Inventory (RAASI; Reynolds, 2001), Anger Discomfort Scale (ADS; Sharkin & Gelso, 1991), and the Marlowe-Crowne Social Desirability Scale, Short Form (Reynolds, 1982) took approximately 20 to 40 minutes to complete.
Four students (1%) completed the Optional: Request For Help Form\(^1\) (see Appendix G), three Grade 9 students and one Grade 11 student. These forms were forwarded to the appropriate counsellor for follow-up.

**Measures**

**Background Information** (see Appendix D)

A questionnaire was created in order to obtain sample characteristics for each of the following categories: (a) demographics -- age, grade, gender, ethnicity, parental level of education, and living situation; (b) health behaviours -- smoking, tattoos, piercing; and, (c) health history -- hospitalization(s), illness(es), professional help/medical care.

**Self-Harm Survey** (see Appendix E)

A self-report self-harm survey questionnaire was developed for the purposes of the present study in order to investigate the nature and function of self-harm in a school-based community sample of adolescents. The survey is comprised of 27 possible items, many of which request more than one response (i.e., *If yes, then how many times?*) leading to a total maximum of 44 responses for those individuals who responded affirmatively to the initial closed questions.

\(^1\) Optional: Request for Help Form (see Appendix G). This optional page explicitly states that participants who would like help should provide their name and grade as well as their counsellor's name. This form was separated following data collection and the appropriate counsellors were contacted with a list of individuals who indicated a desire for help. Counsellors, in turn, contacted the youth listed. Because the questionnaire packages were completed anonymously, the researcher considered it important to provide a means for participating youth to get help. In a study conducted by Fisher (2001), the majority of her sample of 322 urban youth in grades 7-12 and their 160 parents indicated that asking teenagers' permission to get them help is a preferred way of dealing with issues of confidentiality and disclosure.
Twenty-nine of these questions follow a forced choice format and the remaining 15 are open-ended. Eight of the open-ended questions ask for a one-word response (e.g., time frame, frequency). Responses to all but three of the forced choice questions and 12 of the 15 open-ended questions were used for the present investigation. Questions are organized along the six following dimensions:

(1) Self-harm ideation. Items from this dimension assess thoughts of harming self, extent of ideation, and whether disclosure of ideation has occurred. All of the four forced choice and the single open-ended item were used for this investigation.

(2) Self-harm action. Items from this dimension examine existence of self-harming behaviour(s), time frame, social context, emotional context, and nature of the behaviour(s). Eight of the nine forced choice questions and five of the six open-ended questions were used in this study.

(3) Risk-taking behaviour. Items from this dimension inquire about dangerous or risky behaviour(s). The single forced choice item and two of the three open-ended items were used in this study.

(4) Suicide history. Items from this dimension are concerned with existence of a past suicide ideation, plan, attempt, time frame, and lethality. Consists of 6 items (5 forced choice, 1 open-ended), all of which were used in the present investigation.

(5) Disclosure and professional help. Items from this dimension ask about help-seeking behaviour, disclosure of self-harm, and treatment for self-harm. Five of the six forced choice and both of the two open-ended questions were used in this study.
(6) Peer group. Items from this dimension are concerned with whether individuals in the peer
group engage in self-harming behaviour. Two of the three forced choice and one of the two
open-ended items were used.

Scoring. Two items from the self-harm action dimension of this measure (Have you ever
done anything on purpose to injure, hurt, or harm yourself or your body (but you weren't trying
to kill yourself)? How many times in the past year.... Have you ever injured, hurt, or harmed
yourself on purpose, but told others (friends, parents, etc.) that it was an accident?) are
concerned with the existence and chronicity of self-harming behaviour. Individuals who
responded affirmatively to one of the questions or to both questions were classified as "self-
harmers". These questionnaires were further examined to better contextualize the responses and
to determine if responses were consistent and valid. Several of the open-ended questions ask for
descriptive information about the self-harming behaviour and these questions were helpful in
making the determination regarding group status (self-harming vs. non-self-harming).

Self-harmers' descriptions of their self-harming behaviours were coded in terms of
conceptually meaningful categories based on the nature of activity or behaviour. Seventy-six
behavioural descriptions were elicited by the open-ended survey question. The categories that
emerged during iterative analysis, which correspond to the language used by the participants to
describe what they intentionally do to themselves, were as follows: (1) cutting, poking,
scratching, carving, slitting -- behaviours described elsewhere as self-laceration (Patton et al.,
1997); (2) biting, hitting, bruising, punching -- described by Patton et al. (1997) as self-battery;
(3) bone-breaking, falling, jumping; (4) abusing pills or overdosing; (5) reckless or suicidal-type
behaviour that does not fit into categories one to four (i.e., crashing through a window, stepping
in front of a car); and, (6) starving/not eating, throwing up, anorexia/bulimia, or eating disorder,
referred to here as eating disordered behaviour.

To determine inter-rater reliability, 58% of the self-harm data were independently coded by a second rater. Percent agreement for self-harm subtypes was 97.3%, indicating a high degree of reliability in the categorization of self-harm.

**Motivations Underlying Self-Harm Questionnaire (see Appendix F)**

A 29-item self-report questionnaire was developed to investigate motivations underlying self-harming behaviour. Motivations for self-harm, presented in a series of statements, were derived from an extensive review of the extant literature (e.g., Briere & Gil, 1998; Conterio & Lader, 1998; Favazza, 1996; Favazza, 1998; Favazza & Conterio, 1989; Herpetz, 1995; Ross & McKay, 1979; Suyemoto, 1998; Walsh & Rosen, 1988; Winchel & Stanley, 1991) as well as discussion with adolescents and with professionals with experience and expertise in the area of adolescent self-harm (A.R. Favazza, personal communication, May 22, 2000; R. Gale, personal communication, March 15, 2001; J. Garland, personal communication, March 15, 2001; W.M. Reynolds, personal communication, Spring 2000).

As conceptualized a priori, the 29 motivations for self-harming behaviour identified in the extant literature and through consultation were as follows: substance use, curiosity, self-punishment, communication, anger/distress, "space-out"/dissociation, escape, control, suicide-urge, and feel-better. A four-point response format was utilized in which respondents were asked to indicate whether they "strongly agree", "somewhat agree", "somewhat disagree", or "strongly disagree" with each motivational statement. The responses were not scored per se, but instead are reported as percentages in order to provide some insight into the motivations underlying the self-harming behaviour. For the purposes of the present investigation, the responses were collapsed into two categories -- "yes" (endorsement of the motivation) and "no"
Reynolds Adolescent Adjustment Screening Inventory (RAASI) (see Appendix H)

Reynolds Adolescent Adjustment Screening Inventory (RAASI; Reynolds, 2001) is a measure designed to screen for psychological adjustment difficulties in youth aged 12 through 19. The RAASI is a 32-item self-report measure that assesses adjustment across both internalizing and externalizing domains. The RAASI consists of four subscales: Emotional Distress; Antisocial Behaviour; Positive Self (self-esteem and sociability); and Anger Control Problems. For the purposes of the present investigation, to aid conceptual clarity the Positive Self subscale is hereafter referred to as Negative Self. The latter term is more descriptive of the questions given that higher scores reflect a negative sense of self and self in social situations.

The Emotional Distress subscale consists of 10 items (items 18, 20, 22, 23, 26, 27, 28, 29, 30, 31) that assess anxiety and depression symptoms. The six reverse-scored Negative Self items (1, 4, 6, 8, 16, 19) evaluate aspects of self-esteem and the social self or sociability. The Antisocial Behaviour subscale includes eight items (3, 13, 14, 17, 21, 24, 25, 32) that assess a variety of behaviours that violate societal rules and norms and that are related to problems in adjustment. The eight items on the Anger Control Problems subscale (items 2, 5, 7, 9, 10, 11, 12, 15) evaluate aspects of anger and noncompliance, but not overt aggression. A three-point response format is utilized in which respondents are asked to indicate whether, in the past six months, each statement is/has been true for them "never or almost never", "sometimes," or "nearly all the time."

Evidence supporting the reliability and validity of the RAASI exists. In terms of reliability, as reported in the manual (Reynolds, 2001), within the standardization sample the total scale internal consistency (Cronbach's alpha) was determined to be high, at .91. The
individual subscale alphas ranged from .81 to .88 for Anger Control Problems, Antisocial
Behaviour, and Emotional Distress, and somewhat lower (.72) for Negative Self. Thus, all
subscales have demonstrated acceptable levels of internal consistency. Internal consistency was
also found to be high when examined for males and females, and by age group. Further, internal
consistency reliability (Cronbach's alpha) for the development sample of over 3,300 adolescents
was found to be .92 for the total scale. A test-retest reliability coefficient of .89 for the
Adjustment Total Score was found when 64 school-based adolescents were re-administered the
RAASI with a two-week interval. The test-retest reliability coefficients for the subscales ranged
from .83 to .86.

In the RAASI Manual, Reynolds (2001) provides strong evidence supporting the
criterion-related and construct validity (convergent, contrasted groups, and factorial) of the
RAASI. Both the Adolescent Psychopathology Scale (APS) and the Minnesota Multiphasic
Inventory-Adolescent version (MMPI-A) were utilized in studies to support the criterion-related
validity of the RAASI. Moderate to strong relationships were noted with domain similar
subscales across both the APS and the MMPI. Furthermore, convergent validity was supported
when significant differences were found between the clinical and standardization samples on
both Adjustment Total Score and on individual subscale scores. Results of a factor analysis that
demonstrated four distinct underlying dimensions or factors corresponding to the four subscales
lend further support to the use of RAASI subscales and provides strong evidence of factorial
validity.

The Adjustment Total Raw Score ranges from 0 to 62. Reynolds (2001) states that the
average Adjustment Total Raw Score was 18.7 for the standardization sample and 27.1 for the
clinical sample. A raw score above 50 is rare. In his manual for the Adolescent
Psychopathology Scale, Reynolds (1998) supports the use of linear $T$-scores to calculate norms rather than normalized standard scores for the measurement of psychopathology. The RAASI Manual provides tables to convert raw scores to standard $T$-scores. A cutoff score of $60T$ is designated for those individuals who manifest a mild level of maladjustment while $65T$ suggests a moderate clinical level and $70T$ indicates severe adjustment difficulties. According to the Manual, a score of $60T$ or higher warrants further evaluation. Additionally, scores are provided for the individual subscales. It is possible for an individual profile to be below the cutoff for the Adjustment Total Score, but to be above the clinically relevant cutoff in one of the four domains.

For the present investigation, internal consistency (Cronbach’s alpha) of the RAASI was found to be adequate: Total Scale, $\alpha = .91$; Emotional Distress, $\alpha = .89$; Antisocial Behaviour, $\alpha = .86$; Anger Control Problems, $\alpha = .73$; and, Negative Self, $\alpha = .66$.

Anger Discomfort Scale (ADS) (see Appendix I)

The Anger Discomfort Scale (ADS; Sharkin & Gelso, 1991) is a 15-item self-report measure designed to assess the degree to which an individual feels uncomfortable with his or her own anger. According to Sharkin and Gelso, anger discomfort is "an inner, subjective experience similar to trait anxiety, tied to both intrapsychic and interpersonal factors" (p. 61). The intrapsychic aspect involves feeling threatened by the experience of anger and the interpersonal aspect involves concern about how others might react. The ADS utilizes a four-point Likert-type response format ranging from one, "not at all true/never", to four, "definitely or always true", with regard to how characteristic the statement is for the respondent. Total scores range from 15 to 60, with higher scores reflecting greater anger discomfort.

Although the extant research utilizing the Anger Discomfort Scale is limited, Sharkin and Gelso (1991) provide evidence supporting the reliability and validity of the ADS. In terms of
reliability, internal consistency (Cronbach's alpha) was found to be .81, while test-retest reliability demonstrated adequate stability with a coefficient of .87 with a one-week interval. Sharkin and Gelso also provide evidence supporting the discriminant validity of the measure. Specifically, there was a nonsignificant relation between the ADS and the SAT combined scores. The ADS correlated positively with the anger-out/anger expressed, anger-in/anger suppressed, and total anger constructs on the Anger Expression Scale (AX; Spielberger et al., 1985; Spielberger, Krasner, & Solomon, 1988), whereas a negative correlation was found with anger control. A significant positive correlation was also found to occur with trait anxiety.

In the present investigation, internal consistency, assessed via Cronbach's alpha, was found to be adequate ($\alpha = .80$).

**Marlowe-Crowne Social Desirability Scale: Short Form (MCSDS:SF)** (see Appendix J)

The Marlowe-Crowne Social Desirability Scale: Short Form (MCSDS:SF; Reynolds, 1982) is a 13-item self-report measure utilizing a true/false response format. Social desirability has been conceptualized as a response style that reflects a need for approval (Reynolds, 2001). Given that all measures utilized in the study were self-reports, it is important to examine the impact of socially desirable response set tendencies. Items represent either socially undesirable or socially desirable statements. Items keyed false are probable but undesirable (i.e., *I am sometimes irritated by people who ask favours of me*) and those keyed true are improbable but socially desirable (i.e, *I have never deliberately said something that hurt someone's feelings*). The total score equals the number of keyed responses endorsed; five items (5, 7, 9, 10, 13) are reverse scored.

Based on results from factor analysis, Reynolds (1982) examined the psychometric properties of several possible short-forms and found this particular form to be the most
comparable to the 33-item original or standard form \((r = .93)\). Further, the internal consistency reliability of this form is supported with a Kuder-Richardson formula 20 coefficient of .76 (Reynolds, 1982). According to Reynolds (1982), this form is the most reliable and valid of the short forms and has substantially fewer items, making it more practical for a brief measure of social desirable response tendencies. In the present investigation, the internal consistency of the MCSDS:SF was found to be acceptable \((\alpha = .65)\).
CHAPTER 5

Results

Overview

Recall that the objectives of this study were to: (1) identify the prevalence and types of self-harm and explore the nature and experience of adolescent self-harming behaviour; (2) evaluate the relation of psychological adjustment, anger expression, and suicide attempt history to self-harming behaviour; and, (3) determine the extent to which self-harmers and non-self-harmers can be correctly classified via psychological, health risk, and sociodemographic variables. With these aims in mind, the results are presented in six sections.

The first section briefly describes the preliminary analyses used to screen the data. The second section provides information regarding the overall prevalence of self-harm ideation and self-harming behaviour and provides the results of analyses examining sociodemographic differences between self-harmers and non-self-harmers. The third section examines prevalence of subtypes of self-harm and presents results of analyses examining adolescents' conceptualizations of self-harm and the nature and dynamics of self-harming behaviour. The fourth section presents results of analyses examining the relation between self-harm and other risky and health-compromising behaviours. The fifth section provides the results of analyses examining gender and group differences across indices of psychological adjustment. The final section presents results of logistic regression analyses examining the extent to which the hypothesized correlates of self-harm were predictive of membership in the self-harming group.

Preliminary Analyses

Prior to statistical analysis, the data were examined in accordance with the statistical data screening procedures recommended by Tabachnick and Fidell (2001). Using SPSS, frequencies and graphs were examined to check data entry, missing values, and normality of distributions.
Data were visually inspected via graphs and plots and both skewness and kurtosis coefficients were examined for normality. Most coefficients were within the excellent range (±1.0) and only three values fell within the acceptable range (±2.0) (George & Mallery, 1999). According to Tabachnick and Fidell, the impact of minor departures from normality diminishes with a large sample size. Thus, for the present investigation, all values were deemed acceptable.

Data was screened for univariate outliers by computing then examining z scores. According to Tabachnick and Fidell (2001), univariate outliers are indicated by a z score greater than or equal to 3.67, at p < .001 criterion. Two cases were identified as univariate outliers using this method, however these authors also state that with a large sample size, z scores near this specified cut off are to be expected to occur by chance. For a sample size in excess of 100, Stevens (1996) suggests that a z score of at least four be used. Using this criteria of four, no cases were found. Next, histograms were examined for unattached cases and only one case was found. Cases identified in these procedures were examined for recording or entry errors, but none emerged. Thus, based on recommendations made by Tabachnick and Fidell (2001) and Stevens (1996), the two cases were retained for all analyses.

**Prevalence and Sociodemographic Characteristics**

**Prevalence of Self-Harm Ideation**

Forty-two percent of the total sample reported self-harm ideation, with significantly more females (53%) than males (28%) reporting these thoughts, $\chi^2(1, N = 424) = 26.69, p < .001$. A smaller percentage, 9% reported being obsessed with harming themselves (Have you thought about harming, hurting, or injuring yourself so much that you cannot think of or do anything else?) (6% males vs. 12% females). Analysis examining gender differences indicated that a greater number of females than males reported such obsessive thoughts, $\chi^2(1, N = 424) = 4.53,$
Of those who responded affirmatively to the self-harm ideation items, only 12% reported disclosing their feelings/urges to others, with significantly more females (20%) than males doing so (3%), $\chi^2 (2, N = 423) = 38.94, p < .001$. Most common recipients of disclosure were: friends (50%), a combination of parents/guardians and professionals such as psychologist, counsellor, and/or teacher (17%), parents/guardians (15%), relative or family member (8%), a combination of friends and parents/guardians (7%), and professionals such as psychiatrist/counsellor/psychologist (4%).

Prevalence of Self-Harm Behaviour

For the purposes of the present investigation, participants were categorized as "self-harmers" if they responded affirmatively to the yes/no question, *Have you ever done anything on purpose to injure, hurt, or harm yourself or your body (but you weren't trying to kill yourself)?* and/or the closed question, *Have you ever injured yourself on purpose, but told people (your parents, friends, or others) that it was an accident?* The questionnaires of those participants responding affirmatively to either of these questions were then subjected to validity checks (i.e., were their responses consistent, did they make sense) and examined together with responses to the follow-up open-ended questions, *What did you do?* and *Tell about a time when you did something that was harmful to yourself or hurt or injured your body on purpose.*

Based on the responses to the self-harm questions, 15.1% of the total sample reported self-harming behaviour ($n = 64$). The self-harming group was comprised of 16 males (8.5% of the total males) and 48 females (20.3% of the total females). Significantly more females than males reported self-harm, $\chi^2 (1, N = 424) = 11.42, p < .001$.

The prevalence of self-harm subtypes is discussed in a subsequent section in the context of adolescent conceptualizations of self-harm.
Self-Harm and Sociodemographic Characteristics

See Table 3 for a comparison of self-harmers and non-self-harmers on sociodemographic variables. Analyses revealed significant differences between the self-harmers and non-self-harmers on family composition. Self-harmers were more likely than non-self-harmers to come from a single-parent family. Further, self-harmers were more likely than non-self-harmers to report having a parent with a serious illness or disability that has prevented them from caring for their child. No other significant differences emerged on sociodemographic variables.
Table 3

Sociodemographic Differences Between Adolescent Self-Harmers and Non-Self-Harmers

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total</th>
<th>Self-Harmers</th>
<th>Non-Self-Harmers</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>424</td>
<td>64</td>
<td>360</td>
<td>$\chi^2 (1) = 206.64, \ p &lt; .001$</td>
</tr>
<tr>
<td>Gender (n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>188</td>
<td>16</td>
<td>172</td>
<td>$\chi^2 (1) = 11.42, \ p &lt; .001$</td>
</tr>
<tr>
<td>Females</td>
<td>236</td>
<td>48</td>
<td>188</td>
<td>$\chi^2 (5) = 4.23, \ p = \text{ns}$</td>
</tr>
<tr>
<td>Age (in years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>15.34</td>
<td>15.47</td>
<td>15.32</td>
<td>$t (422) = 1.06, \ p = \text{ns}$</td>
</tr>
<tr>
<td>SD</td>
<td>1.06</td>
<td>1.07</td>
<td>1.06</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>13.00 - 18.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity (n/%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/European</td>
<td>296 (71.7%)</td>
<td>45 (72.6%)</td>
<td>251 (71.5%)</td>
<td>$\chi^2 (6) = 6.72, \ p = \text{ns}$</td>
</tr>
<tr>
<td>Asian</td>
<td>53 (12.8%)</td>
<td>4 (6.5%)</td>
<td>49 (14.0%)</td>
<td></td>
</tr>
<tr>
<td>E./W./S. Indian</td>
<td>9 (2.2%)</td>
<td>1 (1.6%)</td>
<td>8 (2.3%)</td>
<td></td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>9 (2.2%)</td>
<td>2 (3.2%)</td>
<td>7 (2.0%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>8 (1.9%)</td>
<td>2 (3.2%)</td>
<td>6 (1.7%)</td>
<td></td>
</tr>
<tr>
<td>Ethnic mix</td>
<td>30 (7.3%)</td>
<td>7 (11.2%)</td>
<td>23 (6.6%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8 (1.9%)</td>
<td>1 (1.6%)</td>
<td>7 (2.0%)</td>
<td></td>
</tr>
<tr>
<td>Family Composition (n/%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-parent family</td>
<td>318 (75%)</td>
<td>40 (62.5%)</td>
<td>278 (77.7%)</td>
<td>$\chi^2 (2) = 6.73, \ p &lt; .05$</td>
</tr>
<tr>
<td>One-parent family</td>
<td>100 (23.7%)</td>
<td>23 (35.9%)</td>
<td>77 (21.5%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4 (0.9%)</td>
<td>1 (1.6%)</td>
<td>3 (0.8%)</td>
<td></td>
</tr>
<tr>
<td>Maternal Educational Level (n/%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high-school</td>
<td>20 (5.0%)</td>
<td>5 (8.6%)</td>
<td>15 (4.4%)</td>
<td>$\chi^2 (5) = 4.23, \ p = \text{ns}$</td>
</tr>
<tr>
<td>Graduated high-school</td>
<td>55 (13.9%)</td>
<td>8 (13.8%)</td>
<td>47 (13.9%)</td>
<td></td>
</tr>
<tr>
<td>Vocational/tech. school</td>
<td>14 (3.5%)</td>
<td>----</td>
<td>14 (4.1%)</td>
<td></td>
</tr>
<tr>
<td>Some college/university</td>
<td>42 (10.6%)</td>
<td>6 (10.3%)</td>
<td>36 (10.6%)</td>
<td></td>
</tr>
<tr>
<td>Grad college/university</td>
<td>156 (39.3%)</td>
<td>22 (37.9%)</td>
<td>134 (39.5%)</td>
<td></td>
</tr>
<tr>
<td>Professional/graduate degree</td>
<td>110 (27.7%)</td>
<td>17 (29.3%)</td>
<td>93 (27.4%)</td>
<td></td>
</tr>
</tbody>
</table>

Table continued...
The Adolescent Conceptualization and Experience of Self-Harm

The purpose of this section is to: (1) present findings that explore how adolescents conceptualize self-harm; (2) identify the prevalence of subtypes of self-harm and examine related gender differences; and, (3) provide insight into the nature and experience of self-harm.

Self-Harm Ideation

Most self-harmers (88%) reported self-harm ideation. Significantly more self-harmers than non-self-harmers (88% vs. 33%, respectively) reported having thoughts about harming or injuring themselves, $\chi^2(1, N = 424) = 65.67, p < .001$. Within the self-harming group, no significant gender differences emerged with respect to self-harm ideation. Whereas 42% of self-harmers reported self-harm ideation that was obsessive (they were preoccupied with these thoughts), only 3% of non-self-harmers did so, $\chi^2(1, N = 424) = 98.22, p < .001$.

Self-Harm Subtypes.

When solicited for descriptive information regarding self-harm, a variety of behaviours were described. A total of 76 self-harming behaviours were described by the 64 self-harmers
(some individuals reported more than one behaviour). These behaviours were categorized into six categories: (1) cutting-type behaviours (includes scratching and poking); (2) hitting, biting, punching self; (3) bonebreaking, falling, jumping; (4) overdosing on pills/abusing pills; (5) reckless or suicidal-type behaviour (reportedly without suicidal intent) not covered in other categories; and, (6) eating disordered behaviour. It is important to note that the range of behaviours referred to by the participants was broader than anticipated. Given that an important aspect of this study relates to the desire to present an adolescent conceptualization of self-harm, all behaviours were included in the analyses. Because the self-harm questions were clearly asking about non-suicidal self-harm, those individuals responding with reckless or suicidal-type behaviours were included with the thought that their behaviours were qualitatively different from overtly suicidal behaviours or attempts. When their self-harm responses were compared to their responses to the suicide history questions, it was quite clear that they were differentiating between the behaviours.

As reported in Table 4, cutting/carving/scratching/poking was the most frequently reported behaviour and comprised 43% of the total self-harm responses, followed by hitting/biting/punching at 26%, ingesting pills/overdosing at 16%, eating disordered behaviour at 7%, reckless/suicidal-type behaviour at 5%, and bonebreaking/falling/jumping at 3%. With respect to gender differences, almost half the females and one-third of the males reported cutting-type behaviours. A larger percentage of males reported hitting/punching/biting self and bonebreaking/jumping/falling. The genders were approximately evenly split percentage-wise for reckless or suicidal-type behaviour. Only females reported overdosing on pills and eating disordered behaviours. Significance testing could not be conducted because the categories were
not mutually exclusive; some adolescents reported engaging in more multiple self-harming behaviours.

Eleven of the 64 self-harmers (17%) reported behaviours that belong in two categories (i.e., cutting and hitting) and two (3%) reported behaviours from three different categories. Many participants indicated that they also engaged in different behaviours within the same category (i.e., hitting and biting; cutting and scratching). Overall, regardless of category, fifteen self-harmers (24%) referred to harming themselves in more than one way. Twenty-eight percent of the females and 13% of the males reported harming themselves in more than one way. No males and 9% of the female self-harmers engaged in three or four types of self-harming behaviour.

Table 4

Frequencies of Self-Harm Subtypes As Reported by Self-Harmers

<table>
<thead>
<tr>
<th>Self-Harming Behaviours</th>
<th>Total (%)</th>
<th>Males n(^a) (%)</th>
<th>Females n(^a) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total self-harmers</td>
<td>n = 64</td>
<td>n = 16</td>
<td>n = 48</td>
</tr>
<tr>
<td>Behavioural descriptions</td>
<td>76</td>
<td>18</td>
<td>58</td>
</tr>
<tr>
<td>1. Cutting, poking, slitting, carving, scratching</td>
<td>33 (43%)</td>
<td>6 (33%)</td>
<td>27 (47%)</td>
</tr>
<tr>
<td>2. Hitting, biting, punching</td>
<td>20 (26%)</td>
<td>10 (56%)</td>
<td>10 (17%)</td>
</tr>
<tr>
<td>3. Bonebreaking, falling, jumping</td>
<td>2 (3%)</td>
<td>1 (6%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>4. Abusing pills/overdosing</td>
<td>12 (16%)</td>
<td>0</td>
<td>12 (21%)</td>
</tr>
<tr>
<td>5. Reckless or suicidal-type behaviour</td>
<td>4 (5%)</td>
<td>1 (6%)</td>
<td>3 (5%)</td>
</tr>
<tr>
<td>6. Eating disordered behaviour</td>
<td>5 (7%)</td>
<td>0</td>
<td>5 (9%)</td>
</tr>
</tbody>
</table>

n\(^a\) = number of times behaviour was mentioned.
Self-Harm Action: Timing, Duration, and Frequency

When asked specifically about self-harm within the past year, eleven (17%) participants reported that their self-harm had occurred more than a year ago only. With respect to duration, 26% of the self-harmers reported harming themselves for longer than a year and another 31% had been doing so for between three months to a year. With respect to frequency of self-harm over the past year among those who indicated they had engaged in this behaviour in the specified time period, 25% reported self-harming on only one occasion, 52% reported self-harming between two and ten times, 12% between eleven and twenty times, 4% between twenty and fifty times, and 8% harmed themselves over fifty times in the past year.

Examination of means suggests that gender differences emerged regarding the frequency of self-harm. Compared to boys, girls demonstrated more frequent self-harming. The majority of boys had engaged in self-harming behaviour either once (47%) or two to ten times (47%), and only 7% had done so more than 20 times. Only 16% of girls reported self-harming only once, but 54% percent of girls had harmed themselves two to ten times, 16% had done so 11 to 20 times, 3% more than 20 times, and 11% more than 50 times. Whereas all girls reported self-harming only when alone (100%), boys have harmed themselves either alone (71%) or with others (21%), or both alone and with others (7%).

Self-Harm, Disclosure, and Help-Seeking

Sixteen percent of the self-harmers (1 male and 8 females) reported going to the hospital after self-harming and 11% (6 females) reported receiving medication to help prevent them from harming themselves (i.e., antidepressants). Of the 23% of total self-harmers (1 male and 12 females) that reported receiving help for this problem, 11% received short-term help (1 day to 3 months, with most indicating 1 day) and 12% received long-term help (more than 3 months). No
males reported receiving long-term help. Females were more likely than males to report having told someone about their self-harming behaviour (79% vs. 33%, respectively), \( \chi^2 (1, N = 58) = 10.56, p \leq .001 \). Thirty-five percent of the girls told a friend and the remainder told a combination of parents/guardians, friends, relatives/family members, and/or professionals such as psychologist, counsellor, psychiatrist, or teacher. Boys more commonly told either parents or a combination of parents/relatives and professionals. Further, 67% of the boys and 21% of the girls (10 boys and 9 girls) reported not telling anyone about their self-harming.

**Self-Harm Among Peers**

With regard to their peers, 54% of the total sample indicated that they know at least one person who engages in self-harming behaviour and many reported knowing several individuals (26% know one person, 23% know 2-3 people, and 5% know 4 or more). Cutting and overdosing or abusing pills were the most commonly referred to peer behaviours. Several youth reported eating disorders, heavy drug use, and suicidal behaviour among their peers and one youth mentioned unprotected sex. Self-harmers were significantly more likely to report having a self-harming peer than non-self-harmers (73% vs. 50%), \( \chi^2 (1, N = 424) = 12.00, p \leq .001 \). No significant gender differences emerged.

**Self-Harm and Surrounding Circumstances**

Self-harmers were asked about any stressful life situations that may have coincided with the initiation of self-harming behaviour or episodes of the behaviour. The majority of self-harmers, 75%, reported stressful circumstances surrounding their self-harm. For clarity, responses were categorized into the following: interpersonal problems (52%), stress and pressure (both from school and from home) (17%), everything was going wrong (13%),
depressed/frustrated/bad mood/angry (10%), poor self-image or low self-esteem (4%), both interpersonal and academic problems (4%), and moving to another place (2%).

**Self-Harm and Emotions**

Self-harmers were also given the opportunity to endorse various emotional states they may have felt before, during, and after harming themselves. Emotions were organized into negative, self-conscious, positive, and neutral affect according to extant research in the area of emotion and affect regulation (e.g. Izard, 1977; Saarni, 1999; Taylor, Bagby, & Parker, 1997). Responses are presented in Table 5, rounded to the nearest whole number. As can be seen, generally negative affective states (i.e., angry, depressed) were endorsed prior to self-harming, with a reported reduction in those negative states during and after the self-harming episode. Conversely, self-conscious emotions increased (i.e., shame, guilt, embarrassment) following a self-harming episode. The percentage of positive emotions (i.e., happy, excited) endorsed increased only during the self-harming incident. The exception was increased feelings of relief both during and after self-harming. These responses are consistent with those reported in the literature (Bennum, 1983; Bennum, 1984; Favazza, 1996; Favazza & Conterio, 1989; Pattison & Kahan, 1983; Suyemoto, 1998; Walsh & Rosen, 1988).

Emotions most commonly endorsed as occurring just prior to a self-harming episode were (in decreasing frequency): depressed, lonely, angry, frustrated, desperate, and scared. Emotions reported during self-harming were primarily the following: depressed, angry, lonely, frustrated, scared, desperate, and relieved. Following the self-harm, participants reported feeling depressed, relieved, worried, lonely, ashamed, guilty, scared, and frustrated.
Table 5

Self-Harmers\(^a\) Emotional States Surrounding Self-Harming Incidents

<table>
<thead>
<tr>
<th>Emotional State</th>
<th>Before Self-Harm</th>
<th>During Self-Harm</th>
<th>After Self-Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td><strong>Negative Emotions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>angry</td>
<td>53</td>
<td>37</td>
<td>14</td>
</tr>
<tr>
<td>scared</td>
<td>33</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>frustrated</td>
<td>46</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>depressed</td>
<td>63</td>
<td>44</td>
<td>32</td>
</tr>
<tr>
<td>desperate</td>
<td>35</td>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>dissociated</td>
<td>14</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>lonely</td>
<td>49</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>worried</td>
<td>28</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td><strong>Self-Conscious Emotions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disgusted</td>
<td>11</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>ashamed</td>
<td>19</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>embarrassed</td>
<td>5</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>guilty</td>
<td>23</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td><strong>Neutral Emotion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>don't know</td>
<td>5</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td><strong>Positive Emotions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>relieved</td>
<td>4</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>happy</td>
<td>0</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>excited</td>
<td>11</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>surprised</td>
<td>4</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

\(^a\) n = 57.
Self-Harm and Underlying Motivations

Each self-harming participant rated a series of statements regarding motivational aspects underlying self-harm for how true each statement was in his or her own experience. The responses to each item are summarized by total and by gender in Table 6. Given the large number of tests, the p-value was set at .01. Most common reasons for self-harming (endorsed by > 50% of the sample) included: feelings of depression and unhappiness, self-dislike, feeling like a failure, feeling alone, feeling angry at oneself, wanting to distract oneself from problems, and feeling a need to hurt oneself.

Chi-square analyses were conducted across all 29 items to examine gender differences. With respect to motivational aspects of self-harm, significantly more boys than girls reported reasons such as boredom, $\chi^2 (1, N = 56) = 8.08, p < .01$, helping them join a group, $\chi^2 (1, N = 56) = 6.71, p \leq .01$, thinking it would be fun, $\chi^2 (1, N = 56) = 10.43, p \leq .001$, and wanting to avoid doing something, $\chi^2 (1, N = 56) = 6.29, p \leq .01$. Conversely, compared to boys, significantly more girls reported feeling like they needed to hurt themselves, $\chi^2 (1, N = 56) = 8.11, p < .01$, and feeling very unhappy or depressed, $\chi^2 (1, N = 56) = 7.54, p < .01$.

Alternative motivations that emerged from the youths themselves included statements such as: "I felt it was the only way out"; "I wanted to send a message about my inner pain"; "I wanted to take the pain away from my heart and put it somewhere else"; "I wanted to see who cared"; "It's the only way for people to see how I feel on the inside"; and, "I wanted to prove my will."
Table 6

Motivations and Function of Self-Harming Behaviour

<table>
<thead>
<tr>
<th>List of Motivations</th>
<th>Totala %</th>
<th>Gender % Endorsing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Endorsing</td>
<td>Malesb</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Femalesc</td>
</tr>
<tr>
<td>I wanted to punish myself.</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>I wanted to be noticed.</td>
<td>41</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>I was angry at my parent(s)/guardian(s).</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>I was high or drunk.</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>I didn't know what I was doing.</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>I felt like I was outside my body.</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>I did not like myself.</td>
<td>70</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>It stopped me from killing myself.</td>
<td>41</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>It made me feel like I was in control.</td>
<td>41</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>47</td>
</tr>
<tr>
<td>It stopped me from thinking bad thoughts.</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>I felt like I needed to hurt myself.</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>61*</td>
</tr>
<tr>
<td>I was angry at myself.</td>
<td>63</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>I wanted to make myself feel something.</td>
<td>41</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>I was bored.</td>
<td>14</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7*</td>
</tr>
<tr>
<td>I felt all alone.</td>
<td>63</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>I wanted to shock people.</td>
<td>21</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>I wanted to stop myself from feeling and be numb.</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>I was angry at someone (friend or other).</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>It helped me join a group.</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0*</td>
</tr>
<tr>
<td>It helped me to release tension or stress and relax.</td>
<td>45</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>47</td>
</tr>
<tr>
<td>I felt very unhappy or depressed.</td>
<td>80</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>88*</td>
</tr>
</tbody>
</table>

Table continued...
<table>
<thead>
<tr>
<th>List of Motivations</th>
<th>Total % Endorsing</th>
<th>Gender % Endorsing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males b</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females c</td>
</tr>
<tr>
<td>I wanted to know how it would feel.</td>
<td>29</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>I wanted to get my mind off my problems.</td>
<td>55</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>I wanted to get back at someone.</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>I thought it would be fun.</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5**</td>
</tr>
<tr>
<td>I felt like I was a failure.</td>
<td>64</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>I wanted to feel pain.</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>I wanted to avoid having to do something that</td>
<td>16</td>
<td>39</td>
</tr>
<tr>
<td>I didn't want to do.</td>
<td></td>
<td>9*</td>
</tr>
<tr>
<td>I wanted other people to see how desperate I was.</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Note. Fifty-six out of a total of 64 self-harmers completed this survey of motivations underlying self-harm. Responses were considered an endorsement if either "YES" or "yes" was indicated following the statement.

* n = 56.  b n = 13.  c n = 43.

*p < .01.  ** p ≤ .001.
Self-Harm and Risky Behaviours

In addition to questions specifically about self-harm, participants responded to questions about other types of risky or health-compromising behaviours that they may have engaged in, especially over the past year. Responses to these questions were compared across self-harming and non-self-harming groups. Self-harmers were significantly more likely than non-self-harmers to report smoking, $\chi^2(1, N = 424) = 8.38, p < .01$, having tattoos, $\chi^2(1, N = 423) = 17.68, p < .001$, and engaging in risky behaviours (*Have you ever done anything really risky or dangerous that you knew might have harmed you or even killed you? What did you do?*), $\chi^2(1, N = 420) = 33.22, p < .001$. No significant difference between the two groups was found for piercings (other than in the ears) and serious hospitalizations. These variables were also examined by gender within the group of self-harmers. Results were very similar across genders, with only one exception. Smoking was found to be significant for female self-harmers, but not for males, $\chi^2(1, N = 64) = 3.95, p < .05$.

Types of risky behaviour reported by participants in the overall sample included the following: drug use (alcohol, prescription drugs, illicit drugs) (30%), thrill-seeking/recreational activity (i.e., cliff-diving, bungee-jumping) (30%), recklessness not involving a vehicle (i.e., jumping across buildings, unprotected sex) (13%), recklessness involving a vehicle (i.e., driving too fast, racing) (12%), driving while drunk or riding with a drunk driver (12%), and a combination of thrill-seeking/recreational activity and illicit drug use (5%). More girls reported drug use and riding with a drunk driver whereas more boys reported recklessness involving a vehicle, driving drunk, and engaging in thrill-seeking/recreational activities. No obvious patterns of risky behaviour emerged with respect to self-harmers versus non-self-harmers.
Self-Harm and Suicide

Self-harm and suicide have a unique relationship. Suicidal ideation was more frequently reported by self-harmers (83%) than non-self-harmers (29%), $\chi^2(1, N = 424) = 66.89, p < .001$. In this study, significantly more self-harmers than non-self-harmers reported ever attempting suicide (26% vs. 6%, respectively; 18 self-harmers and 2 non-self-harmers), $\chi^2(1, N = 422) = 82.59, p < .001$. Another way of looking at this is that 89% of the suicide attempters (15 of 16 girls and 1 of 2 boys) had also engaged in nonsuicidal self-harming behaviour. Twelve of the suicide attempters (67%) reported repeated self-harm (more than one time in the past year) and six (33%) reported chronic repeated self-harm (more than 11 times in the past year). Of the self-harmers who reported attempting suicide, 38% had attempted once or twice, 31% had attempted three to five times, and 31% had attempted six or more times. Neither of the two non-self-harmers who reported attempting suicide had done so more than twice. Compared to non-self-harmers, significantly more self-harmers reported having made a suicide plan (40% vs. 3%), $\chi^2(1, N = 423) = 96.22, p < .001$. No gender differences existed within self-harmers with respect to suicidal ideation, planning, or attempts. Self-harm and suicide attempts for the overall sample were correlated at $r = .44 (p < .001)$.

Relations of Self-Harm to Anger Discomfort and Psychological Adjustment

Recall that one of the primary aims of this study was to examine the relation between psychological adjustment and anger expression of adolescents who do and do not engage in self-harming behaviour. Previous research indicates that self-harmers demonstrate increased maladjustment and psychopathology (see Briere & Gil, 1998; Cross, 1993; Darche, 1990; Favazza, 1996; Garrison et al., 1993; Herpetz, 1995; Patton et al., 1997; Simeon & Favazza, 2001; Suyemoto, 1998). Hence, it was hypothesized that self-harming youth would demonstrate
higher levels of overall maladjustment as well as across domains such as emotional distress and anger discomfort when compared to non-self-harming youth. With respect to other indices of adjustment, increased prevalence of suicide attempt and lower self-esteem were also expected of self-harmers as compared to non-self-harmers. Sufficient evidence was not available to support a directional hypothesis for anger control and antisocial behaviour, so the researcher examined these variables for possible links.

**Intercorrelations Among Variables By Gender**

Associations among measures of self-harm, suicide attempt, social desirability, anger discomfort, emotional distress, anger control problems, negative self, antisocial behaviour, and total adjustment (a composite score) were examined via correlational analyses. Correlation coefficients, including Pearson product-moment correlations for continuous variables, point-biserial correlations for continuous and dichotomous variables, and phi coefficients for dichotomous variables were computed separately for male and female participants. Due to multiple correlational tests, the significance level was set at $p \leq .01$. As can be seen in Table 7, many of the variables demonstrated significant associations with each other. It is important to note, however, because the sample size is large, the magnitude of the correlation, and not the statistical significance, is most important (Reynolds, 2001).

For both males and females, self-harm was found to be significantly related to suicide attempt, emotional distress, antisocial behaviour, anger control problems, negative self esteem, and total adjustment. For females only, self-harm was significantly associated with anger discomfort. For males only, suicide attempt did not significantly relate to any of the psychological variables other than emotional distress. This is likely due to the small number of males who attempted suicide in this sample ($n = 2$). As well, the anger discomfort scale (ADS)
did not significantly correlate with anger control problems for boys, but for girls the association was significant. Each of the psychological adjustment subscales was significantly related to the composite scale, as expected, and the intercorrelations among the subscales tended to be moderate, especially those measuring phenomenologically more similar domains. Intercorrelations between the subscales and total scale of the RAASI were also significant, as expected. Coefficients of determination varied from $r^2 = .00$ to $r^2 = .44$, from very low to moderate levels of shared variance. Overall, the correlation coefficients do not suggest any evidence of either multicollinearity or confounds.

A negative association was expected between social desirability and the other variables. Examination of the correlation coefficients confirmed this expectation, with the exception of suicide attempt for males ($n = 2$). Coefficients of determination ($r^2$s) ranged from .00 to .28, reflecting minimal shared variance. ²

---

² Partial correlations controlling for social desirability were computed and compared to the zero-order correlations. For females, no differences were noted, whereas for males, four differences emerged. The correlation of suicide attempt and total adjustment became significant and the correlations between anger control and negative self esteem, antisocial behaviour and negative self esteem, and anger discomfort and total adjustment were no longer significant.
Table 7

Intercorrelations of Psychological Adjustment, Anger Discomfort and Suicide History for Males\textsuperscript{a} and Females\textsuperscript{b}

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-Harm</td>
<td>--</td>
<td>.340**</td>
<td>.137</td>
<td>.360**</td>
<td>.242*</td>
<td>.228*</td>
<td>.190*</td>
<td>.367**</td>
<td>-.055</td>
</tr>
<tr>
<td>2. Suicide Attempt</td>
<td>.462**</td>
<td>--</td>
<td>.079</td>
<td>.267**</td>
<td>.003</td>
<td>-.009</td>
<td>.111</td>
<td>.146 (.226*)</td>
<td>.084</td>
</tr>
<tr>
<td>3. Total ADS</td>
<td>.196*</td>
<td>.059</td>
<td>--</td>
<td>.464**</td>
<td>-.107</td>
<td>.028</td>
<td>.243*</td>
<td>.229* (.175)</td>
<td>-.155</td>
</tr>
<tr>
<td>4. Emotional Distress</td>
<td>.372**</td>
<td>.306**</td>
<td>.459**</td>
<td>--</td>
<td>.316**</td>
<td>.395**</td>
<td>.519**</td>
<td>.804**</td>
<td>-.341**</td>
</tr>
<tr>
<td>5. Antisocial Behaviour</td>
<td>.341**</td>
<td>.338**</td>
<td>.138</td>
<td>.430**</td>
<td>--</td>
<td>.580**</td>
<td>.203* (.078)</td>
<td>.744**</td>
<td>-.410**</td>
</tr>
<tr>
<td>6. Anger Control</td>
<td>.209*</td>
<td>.242**</td>
<td>.303**</td>
<td>.591**</td>
<td>.542**</td>
<td>--</td>
<td>.282* (.142)</td>
<td>.753**</td>
<td>-.501**</td>
</tr>
<tr>
<td>7. Negative Self</td>
<td>.311**</td>
<td>.268**</td>
<td>.399**</td>
<td>.666**</td>
<td>.382**</td>
<td>--</td>
<td>.603**</td>
<td>--</td>
<td>-.331**</td>
</tr>
<tr>
<td>8. Total Adjustment</td>
<td>.397**</td>
<td>.366**</td>
<td>.412**</td>
<td>.876**</td>
<td>.743**</td>
<td>.805**</td>
<td>.751**</td>
<td>--</td>
<td>-.528**</td>
</tr>
<tr>
<td>9. Social desirability</td>
<td>-.147</td>
<td>-.140</td>
<td>-.300**</td>
<td>-.408**</td>
<td>-.388**</td>
<td>-.429**</td>
<td>-.388**</td>
<td>-.499**</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. Self-harm was categorized as being present (in lifetime) or not present. Suicide attempt was coded as either occurring or not occurring. Correlations for males are above the diagonal; correlations for females are below the diagonal. Partial correlations are presented in parenthesis wherever significance differs from zero-order correlation coefficients.

\textsuperscript{a}n = 186. \textsuperscript{b}n = 232.

*\textit{p} < .01. **\textit{p} < .001.
Gender and Group Differences Among Psychological Variables

Means and standard deviations for the adjustment, social desirability, and anger discomfort measures are presented in Table 8. A series of 2 (gender) x 2 (self-harming vs. non-self-harming) analyses of variance (ANOVA's) were conducted to evaluate the relation of self-harm to gender on overall psychological adjustment and adjustment across specified domains. The decision to conduct multiple univariate ANOVA's resulted from the fact that the outcome variables were conceptually independent and, because the research was exploratory in nature, the researcher was not interested in a composite or multivariate effect at this point (Huberty & Morris, 1989). Furthermore, given the limited database on adolescent self-harm, not all variables have been studied previously in a univariate context (Huberty & Morris, 1989). An adjustment to overall Type I error probability was made to counteract the potential problem of experimentwise Type I error typically associated with conducting multiple statistical tests. An alpha level of .01 was utilized for all tests.

There was a significant main effect of self-harm on adolescent psychological adjustment, $F(1, 420) = 61.44, p < .001$. Self-harmers were found to demonstrate increased overall psychological maladjustment when compared to non-self-harmers. There was no significant effect of gender and the interaction of self-harm by gender was also not significant. Significant main effects of self-harm were also found across anger discomfort, $F(1, 420) = 10.35, p \leq .001$; negative self, $F(1, 420) = 23.51, p < .001$; antisocial behaviour, $F(1, 420) = 33.86, p < .001$; and, anger control problems, $F(1, 420) = 18.83, p < .001$, with self-harmers manifesting increased anger discomfort and antisocial behaviour and decreased self-esteem and anger control. No gender main effects were found on these variables and none of the interaction terms were significant. However, the main effect of gender on negative self approached significance,
Table 8

Descriptive Characteristics Across Psychological Variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-Harmers(^a)</td>
<td>Non-Self-Harmers(^b)</td>
</tr>
<tr>
<td>Social Desirability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>5.75</td>
<td>6.30</td>
</tr>
<tr>
<td>SD</td>
<td>3.02</td>
<td>2.75</td>
</tr>
<tr>
<td>Anger Discomfort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>34.44</td>
<td>31.20</td>
</tr>
<tr>
<td>SD</td>
<td>6.49</td>
<td>6.55</td>
</tr>
<tr>
<td>Total Adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>57.63</td>
<td>45.74</td>
</tr>
<tr>
<td>SD</td>
<td>10.24</td>
<td>8.27</td>
</tr>
<tr>
<td>Emotional Distress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>58.69</td>
<td>46.38</td>
</tr>
<tr>
<td>SD</td>
<td>10.38</td>
<td>8.80</td>
</tr>
<tr>
<td>Negative Self</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>49.50</td>
<td>44.20</td>
</tr>
<tr>
<td>SD</td>
<td>9.06</td>
<td>7.57</td>
</tr>
<tr>
<td>Anger Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>53.44</td>
<td>46.63</td>
</tr>
<tr>
<td>SD</td>
<td>12.59</td>
<td>7.62</td>
</tr>
<tr>
<td>Antisocial Behaviour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>60.50</td>
<td>50.27</td>
</tr>
<tr>
<td>SD</td>
<td>14.66</td>
<td>11.16</td>
</tr>
</tbody>
</table>

\(^a\) n = 16. \(^b\) n = 172. \(^c\) n = 48. \(^d\) n = 188.
Across the emotional distress domain, significant main effects were found for both self-harm, $F(1, 420) = 56.84, p < .001$, and gender, $F(1, 420) = 15.96, p < .001$, but no interaction occurred. Self-harmers reported increased emotional distress when compared with non-self-harmers and, likewise, females reported more emotional distress than males.

Correlates as Predictors of Self-Harm: Individual Variable Contributions

The final question proposed to determine, within a multivariate context, which of the sociodemographic, health and risky behaviour, and psychological variables were significantly associated with self-harm and therefore could be used to predict membership in the self-harming group. Logistic regression analyses were conducted to further determine the extent to which correlates of self-harm could be used to classify participants as either self-harmers or non-self-harmers. In contrast to the preceding research question examining the variables using ANOVA's, logistic regression utilizes a multivariate approach to the data. In a two-group scenario, logistic regression is comparable to discriminant function analysis and is the suggested analysis when discriminant analysis assumptions are violated and predictor or independent

---

3 Age was not correlated with any of the dependent measures and therefore it was not controlled for in the analyses. To further investigate the effect of socially desirable response tendencies, univariate 2 (gender) x 2 (self-harming/non-self-harming) analyses were conducted with social desirability as a covariate. After adjusting for differences in social desirability, results were consistent with those already described; two exceptions worthy of mention were a slight decrease in the significance of the main effect of self-harm on anger discomfort (from $p < .001$ to $p < .005$) and the main effect of gender on overall adjustment approached significance, $F(1, 419) = 3.79, p = .053$. 
variables are both continuous and categorical (as they are in the present investigation), and (Cizek & Fitzgerald, 1999; Fan & Wang, 1999; Hair, Anderson, Tatham, & Black, 1998; Tabachnick & Fidell, 2001). Within binary logistic regression, SPSS automatically dummy codes all specified categorical variables.

Logistic regression analysis was used to examine the relative contribution of the variables in predicting self-harm. The analysis was performed with self-harm status as the outcome variable and a mix of five categorical predictors and five continuous predictors. Categorical predictors included: gender, suicidal ideation, risky behaviour, knowing someone who self-harms, and parental illness (any serious emotional or physical disability or accident that has made it difficult for the parent to raise the child). Continuous predictors included: emotional distress, antisocial behaviour, anger control problems, anger discomfort, and negative self-esteem. Predictor variables were selected based on findings from the extant literature. Research has suggested the following in support of the use of these variables: (a) more females than males engage in self-harming behaviour (Favazza & Conterio, 1989; Patton et al., 1997; Walsh & Rosen, 1988; (b) overlap exists between suicidal ideation, suicide, and self-harm (Darche, 1990; Garrison et al., 1993; Patton et al., 1997; Walsh & Rosen, 1988; Winchel & Stanley, 1991); (c) self-harmers are likely to engage in other types of risky behaviour (Kahan & Pattison, 1984; Patton et al., 1997; Walsh & Rosen, 1988); (d) vulnerable adolescents may be more likely to add self-harm to their repertoire if they know someone who is self-harming (Lloyd, 1997); (e) early life events such as parental illness, inaccessibility, and disrupted attachment may play a role in the development of self-harming behaviour (Favazza, 1996; van der Kolk et al., 1991; Walsh & Rosen, 1988); and, (f) both internalizing and externalizing dimensions of psychological adjustment are related to self-harm (Haines et al., 1995; Hastings et al., 1996).
Variables were entered using a direct method. Four cases with missing values on the categorical variables were not used in the analysis; this left 359 non-self-harmers and 61 self-harmers in the sample. Given that this study was exploratory, the SPSS default cut-value or predicted probability of .50 was used, meaning that any case over .5 would be classified as a self-harmer and under .5 as a non-self-harmer. The cut-value is, in part, based on the purpose for carrying out the analyses. If this were part of a multiple gating screening process at a high-school, at the first gate, a cut-value of .25 might be used in order to "cast a wide net." Then, at gate 2, a more thorough measure might be administered, followed by interviews, gradually narrowing the focus.

A test of the overall model revealed that the model was significant, $\chi^2 (10, N = 420) = 107.32, p < .001$, meaning that the predictors, as a set, reliably distinguished between self-harmers and non-self-harmers. This model accounted for 40% of the variance in the dependent variable using the Nagelkerke R-square coefficient. The remainder of the variance must be captured by other factors not used in this model. Evidence supporting the model as a good model was found in the Hosmer and Lemeshow goodness-of-fit test which examines the correspondence between the observed and predicted number of cases for the two categories of the dependent variable, $\chi^2 (8, N = 420) = 11.27, p > .05$. Better model fit is indicated by minimal or no difference in the observed values for the sample and the predicted values that the subject should have using the model. A non-significant chi-square means that there is a good model fit between the actual or observed and predicted classification. However, as reported in Table 9, not all variables were significant contributors to the model.
Table 9

Logistic Regression Analyses of Predictors of Self-Harm Status Using Full Model

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent with Illness</td>
<td>-.211</td>
<td>.409</td>
<td>.266</td>
<td>1</td>
</tr>
<tr>
<td>Gender</td>
<td>-.306</td>
<td>.399</td>
<td>.588</td>
<td>1</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>-1.671</td>
<td>.417</td>
<td>16.075***</td>
<td>1</td>
</tr>
<tr>
<td>Risky Behaviour</td>
<td>-.870</td>
<td>.383</td>
<td>5.155*</td>
<td>1</td>
</tr>
<tr>
<td>Know Self-Harmer</td>
<td>-.221</td>
<td>.376</td>
<td>.344</td>
<td>1</td>
</tr>
<tr>
<td>Anger Discomfort</td>
<td>.015</td>
<td>.026</td>
<td>.346</td>
<td>1</td>
</tr>
<tr>
<td>Emotional Distress</td>
<td>.061</td>
<td>.023</td>
<td>6.864**</td>
<td>1</td>
</tr>
<tr>
<td>Antisocial Behaviour</td>
<td>.037</td>
<td>.016</td>
<td>5.442*</td>
<td>1</td>
</tr>
<tr>
<td>Anger Control Problems</td>
<td>-.016</td>
<td>.022</td>
<td>.527</td>
<td>1</td>
</tr>
<tr>
<td>Negative Self</td>
<td>-.013</td>
<td>.023</td>
<td>.329</td>
<td>1</td>
</tr>
</tbody>
</table>

Self-harmers \( n = 61 \). Non-self-harmers \( n = 359 \).

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

Table 10

Logistic Regression Analyses of Predictors of Self-Harm Status Using Reduced Model

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal Ideation</td>
<td>-1.703</td>
<td>.413</td>
<td>16.989***</td>
<td>1</td>
</tr>
<tr>
<td>Risky Behaviour</td>
<td>-.890</td>
<td>.364</td>
<td>5.983**</td>
<td>1</td>
</tr>
<tr>
<td>Emotional Distress</td>
<td>.058</td>
<td>.017</td>
<td>11.442***</td>
<td>1</td>
</tr>
<tr>
<td>Antisocial Behaviour</td>
<td>.029</td>
<td>.014</td>
<td>4.486*</td>
<td>1</td>
</tr>
</tbody>
</table>

Self-harmers \( n = 61 \). Non-self-harmers \( n = 359 \).

*p < .05. **p ≤ .01. ***p ≤ .001.
The logistic regression equation was then utilized to predict the participants' group status (self-harmer vs. non-self-harmer). Overall prediction was successful with 88.6% of the participants correctly classified into the appropriate group; however, prediction was much more accurate for the non-self-harmers than for the self-harmers, correctly classifying 97.5% and 36.1%, respectively.

Next, nonsignificant variables were removed to create a more parsimonious exploratory model that would best explain the data (Cizek & Fitzgerald, 1999; Tabachnick & Fidell, 2001). After eliminating nonsignificant variables, four variables remained in the equation (see Table 10) -- suicidal ideation, risky behaviour, emotional distress, and antisocial behaviour. Again, the overall model was supported, \( \chi^2 (4, N = 420) = 104.44, p < .001 \), with the model accounting for 39.1% of the variance in the dependent variable (self-harm status), only slightly lower than the first model with many more predictors. Identical results were calculated on the Hosmer and Lemeshow goodness of fit test. The new simplified model demonstrated only minimally better prediction, with an overall success rate of 88.8%. This model was more successful at predicting the self-harmers, accurately classifying 39.3% (increase from 36.1%). Prediction of non-self-harmers remained stable at 97.2%.

Using the simplified model, residuals and outliers (> 2 SD above or below the mean) were examined for possible patterns that might help to explain misclassified cases. Such patterns might also be able to provide further insight into potential improvements to the model. Close inspection revealed a pattern. Only one case was a non-self-harmer who was misclassified; this youth was in the severe clinical range across all adjustment dimensions and indicated serious drug use and risky behaviour. The thirteen other cases identified as outliers in the model differed from their respective groups on the predictor variables in the following ways: (1) three were
cases of instrumental injury (i.e., injury to get out of class, to escape sports practice or to "test pain threshold", but nevertheless noteworthy because these youth identified themselves as self-harming); (2) three youth identified eating disorders (three of the five in the sample who referred to this behaviour as self-harming) and reported fairly normal levels of adjustment; (3) two youth did not identify the type of self-harming behaviour they engaged in but reported only having done so once and were normal across adjustment domains; and, (4) five youth cut or hit themselves, two of these youth did so more than one year ago, and all five youth demonstrated normal adjustment and no risky behaviours. The model did not fit these cases for the reasons stated above. An improved model would require deleting these cases or finding a better set of predictor variables with more explanatory power for self-harming behaviour.
CHAPTER 6
Discussion

Overview

Recent research has refuted the popular characterization of adolescence as a universal period of necessary and inevitable psychological disturbance (Arnett, 1999; Offer & Schonert-Reichl, 1992; Powers et al., 1989). In fact, a significant proportion (80%) of the adolescent population is well adjusted, while only 20% of adolescents have mental health problems. Nevertheless, these statistics indicate that approximately one in five young people experience difficulties in making the transition from childhood to adulthood. The present investigation was concerned with a subgroup of adolescents who engage in self-harming behaviours.

This study explored self-harming behaviour in a school-based community sample of adolescents in order to shed light on this poorly understood and widely understudied phenomenon as it occurs in the nonclinical adolescent population. The current understanding of self-harm is derived mostly from research with clinical populations (e.g., Darche, 1990; Ghaziuddin et al., 1992; Schwartz et al., 1989; Simpson & Porter, 1981) and/or with adults (e.g., Briere & Gil, 1998; Favaro & Santonastaso, 1998; Herpetz, 1995; Zlotnick et al., 1999) and therefore the generalizability of findings from these previous investigations is clearly limited. Scant research investigating self-harming behaviour specifically among community adolescents has been conducted.

The following chapter is organized into three sections. The first section provides a summary and interpretation of the results as they relate to the research questions on which the study is based. These questions focus on: (a) describing how adolescents conceptualize self-harm; (b) identifying the prevalence of overall self-harm and subtypes; (c) exploring the
dynamics, nature, and underlying motivations or functions of self-harm; and, (d) examining psychological adjustment, sociodemographic variables, and health risk behaviour correlates for their relation to self-harm (versus non-self-harm). Throughout these discussions, gender differences are described and study findings are situated within the context of prior research. In the second section, the implications of the study are discussed. Finally, the third section follows with a review of the strengths and limitations of the study and recommendations for future research.

Adolescents' Conceptualizations of Self-Harm

Self-harm has been defined, operationalized, classified, and assessed in a variety of ways (e.g., Farberow, 1980; Favazza, 1996; Figueroa, 1988; Kahan & Pattison, 1984; Lacey, 1986; Menninger, 1938; Morgan, 1979) that have been at least partially dependent on the samples studied. Researchers have primarily approached the phenomenon from a psychiatric perspective in which individuals, mostly adults, within inpatient programs or in custodial facilities were asked about their self-harming behaviour. In these studies, diagnostic issues are often central and researchers frequently have prior knowledge that self-harming behaviour is occurring or they utilize a single item from a trauma checklist or a diagnostic interview schedule to determine its occurrence (i.e., Briere & Gil, 1998; Chowanec et al., 1991; Darche, 1990; Schwartz et al., 1989; Simpson & Porter, 1981; Zlotnick et al., 1996; Zlotnick et al., 1999). As a result, definitions of self-harm that emerge from self-harmers themselves have not been sought.

A primary focus of the present investigation was to understand how nonclinical adolescents themselves defined self-harm and what they perceived to be 'self-harming behaviours'. Rather than rely on a prescriptive list of behaviours that have been categorized as self-harming, adolescents' own definitions and perceptions of self-harming behaviours were
sought. In this way, the research remained true to the adolescent subjective experience and the validity of the obtained results was enhanced. Because knowledge regarding self-harming behaviours among adolescents is seriously lacking, asking adolescents themselves about the behaviours that they believe constitute 'self-harming' is an important first step toward understanding the nature and function of these behaviours during adolescence. Resulting classification and intervention can then be grounded in the reality of self-harming behaviour as it exists in this population. Recent research in youth health promotion and prevention (i.e., Millstein, 1993; Millstein et al., 1993; Zaslow & Takanishi, 1993) has emphasized the need to collect descriptive data from adolescents about their experiences as a necessary step to formulating an understanding of the problem, which can then be used to inform effective intervention planning.

In the present study, adolescents provided descriptions of various self-harming behaviours that were then coded and quantified for analysis. Interestingly, in response to questions about self-harm, the youth not only reported behaviours that have been duplicated in previous research (e.g., Darche, 1990; Lloyd, 1997; Patton et al., 1997; Ross & Heath, 2002; Schwartz et al., 1989), such as cutting, carving, scratching, hitting, biting, bonebreaking, and reckless and suicidal-type behaviours, but they also reported that they considered eating disordered behaviours and nonsuicidal abuse or misuse of pills to constitute self-harm. Although some research has considered at least one of these latter two behaviours as self-harm (Hawton et al., 1999; Patton et al., 1997; Ross & McKay, 1979), the categorization of self-harm into this same set of categories has not been done in an adolescent sample. It is important to note that every adolescent that reported reckless or suicidal-type behaviours in response to the questions about nonsuicidal self-harm also reported other types of self-harming behaviour. These findings
demonstrate the importance of attending to the adolescents' viewpoints of self-harm as the views of adult researchers in isolation may not accurately reflect the actual experiences and perceptions of adolescents (Compas, Davis, Forsythe, & Wagner, 1987; Millstein, 1993; Schonert-Reichl & Offer, 1992).

Within the extant literature, there exists controversy about the types of behaviours that should be categorized as self-harming. Seminal work in the adult field has distinguished between indirect and direct self-harm, suggesting that behaviours such as ingesting pills (without suicidal intent) and eating disorders should be categorized as self-harming behaviour that is indirect because the damage inflicted on the body is invisible and the bodily effect is not immediate (Farberow, 1980; Favazza, 1996; Kahan & Pattison, 1984; Pattison & Kahan, 1983; Ross & McKay, 1979; Simeon & Favazza, 2001). Other research on self-harm has included ingestion or inhalation, but has excluded eating disorders (Patton et al., 1997; Ross & McKay, 1979). Few studies have examined self-harm across the continuum, including both direct and indirect behaviours (Ousch, Noll, & Putnam, 1999; Patton et al., 1997). Often research has failed to distinguish between suicidal behaviour and nonsuicidal self-harm; many studies have included both, using the all-encompassing term "suicidal behaviour" (Johnson et al., 1975; Lipschitz et al., 1999; Patton et al., 1997; Whitehead et al., 1973). Researchers have either considered substance abuse, eating disorders, and/or recklessness as types of self-harming behaviour or as a concomitant of self-harm (Darche, 1990; Favaro & Santonastaso, 1998; Kahan & Pattison, 1984; Patton et al., 1997; Simpson & Porter, 1981; Zlotnick et al., 1999). It is important to note that the present findings suggest that self-harm is a prevalent problem among adolescents regardless of whether only the more narrow definition of direct self-harm (or self-mutilation) is utilized or whether a broad definition that includes indirect self-harm is applied.
This study extends previous research by considering salient the adolescents' subjective definitions of self-harm and the behaviours constituted therein.


Data regarding prevalence of self-harm among adolescents are scarce. Recent evidence, however, reveals that the prevalence of other self-destructive behaviours among youth has been growing (Borges et al., 1995; Joffe et al., 1988; McCreary Centre Society, 1999; Resnick et al., 1997). Results from the present investigation confirm that self-harm occurs among adolescents.

Prevalence of Self-Harm

Findings from the present investigation suggest that 15.1% of adolescents report engaging in some form of self-harming behaviour, with more females than males doing so (20.3% vs. 8.5%, respectively). Prevalence rates from other studies range from 1.8% to 39% within a community sample. For the most part, lower rates are derived from earlier studies, primarily with adult populations (Favazza & Conterio, 1988; Johnson et al., 1975; Whitehead et al., 1973) or from studies that limit the time frame for self-harm to one year (rather than a lifetime). In general, females have evidenced higher prevalence rates, although not consistently. The 15.1% overall prevalence rate and the gender breakdowns found in the present investigation are consistent with more recent research involving adolescents and young adults specifically. There has been a trend toward finding increased prevalence for males, whereas traditionally research has found a preponderance of females (i.e., Darche, 1990; Favazza & Conterio, 1989; Garrison et al., 1993; Graff & Mallin, 1967; Lloyd, 1997; Ross & McKay, 1979; Schwartz et al, 1989; Walsh & Rosen, 1988).

In the present investigation, when only direct self-harm is considered (i.e., physical injury is immediate and visible), the prevalence rate drops from 15.1% to 13.2%. Even with the
exclusion of indirect self-harm, data from the current study indicate that a significant number of youth engage in these behaviours (8.5% males and 16.9% females).

Prevalence rates of self-harming behaviour among adolescents have ranged widely, most likely due to the multitude of ways in which self-harm has been operationalized, the different samples studied, and the variety of methods utilized to ask questions about self-harm. Thus, cross-study comparison of prevalence rates, although useful, must be approached with caution. For instance, Lloyd (1997) presented a checklist of self-mutilatory behaviours (i.e., cutting, burning, biting, pulling hair out) to 368 adolescents in the southern U.S. and reported an overall prevalence rate of 39%, with no significant gender differences. Patton et al. (1997) examined self-harm (including suicidal behaviour, deliberate recklessness, self-laceration, self-battery, and self-poisoning) in a high-school-based sample of 1,699 Australian adolescents. Youth were asked if, in the past year only, they had ever purposely hurt themselves or done anything that they knew might have harmed them or killed them. Patton et al. found a 12-month weighted prevalence rate of 5.1%, with 4% males and 6.4% females. Favazza (personal communication, May 22, 2000) administered a 178 item self-report questionnaire on self-mutilation which included a checklist of self-mutilatory behaviours (i.e. cutting, carving, burning, pulling hair out, infecting self) to 245 undergraduate students in the U.S., finding a prevalence rate of 12.1% for females, 17.8% for males, and an overall prevalence rate of 13.8%. Most recently, Ross and Heath (2002) investigated self-mutilation in a school-based sample of 440 adolescents in eastern Canada. Using a screening item embedded in a coping questionnaire with follow-up interviews, the overall prevalence of self-mutilation (i.e., cutting, burning, scratching, hitting, biting) was 13.9%. Compared to males, females reported a significantly higher rate of self-mutilation (17.6% of the girls and 10% of the boys). Ross and Heath specifically excluded participants who
reported only indirect self-harm (i.e., recklessness, substance use, risky behaviours).

In the present investigation, it is worth mentioning that 42%, almost half of the overall sample, reported self-harm ideation, with 9% indicating obsessive thoughts (i.e., they thought so much about self-harming that they could not think of or do anything else). Although a few studies exist that have asked about planning or forethought that may occur prior to a self-harming incident (Favazza, 1996; Favazza & Conterio, 1988; Lloyd, 1997), to date no published studies exist that have asked about self-harm ideation. The lack of knowledge with respect to self-harm ideation is surprising given the large number of youth in the current study who reported these thoughts. The present findings indicate that a significant proportion of adolescents spend at least some time and energy thinking self-destructive thoughts that may be related to a negative coping style. Like other negative self-cognitions, self-harm ideation likely impacts on overall health and well-being. Moreover, self-harm ideation may be a risk factor for actually engaging in self-harming behaviour, however further research must be conducted in order to determine this relation. These findings suggest that prevention and intervention efforts should focus not only on self-harming behaviour, but also on self-harm ideation.

**Nature of Self-Harm**

Self-harming behaviour reported by the youth in the present study was categorized as follows, in decreasing frequency: (1) self-laceration (cutting-type behaviours); (2) self-battery (hitting/biting); (3) abusing pills (4) eating disordered behaviour; (5) reckless or suicidal-type behaviour not accounted for in the other five categories; and, (6) bonebreaking and purposeful falling. These categories, along with the frequency with which they are mentioned, are consistent with previous research. For example, Ross and Heath (2002) found that cutting was most prevalent, followed by self-hitting, punching or hitting a wall, pinching, scratching, biting,
and burning. These researchers, however, failed to examine differences in subtypes between males and females. The findings of the present investigation differ from those of Patton et al. (1997) who found that the most frequent self-harming behaviours reported by adolescents in decreasing frequency were: deliberate recklessness, self-laceration, self-poisoning, self-battery, and suicide attempts. Patton et al. found that girls were more likely to engage in cutting and self-poisoning whereas boys most frequently reported deliberate recklessness and self-battery. Results for girls in the present study were consistent with this, but although self-battery was again most common among males, cutting-type behaviours followed in second place. In another study conducted with a school-based population (Lloyd, 1997), biting, cutting, and hitting were most prevalent, respectively. To date, no published studies with nonclinical adolescents have included eating disorders as self-harming behaviour along with other more direct behaviours and few have included reckless behaviour, although these behaviours may be referred to as correlates or concomitants of self-harm (Cross, 1995; Darche, 1990; Favazza & Conterio, 1989; Favazza et al., 1989; Yaryura-Tobias et al., 1995). Given the co-occurrence of these behaviours, further research examining the relation among the various behaviours that constitute the self-harm continuum is clearly indicated.

Overall, 24% of the adolescents in the present study used multiple methods to self-harm. Although studies refer to the tendency for self-harmers to engage in more than one type of self-harm, many do not provide this information. This finding is in accordance with the few that do (Herpetz, 1995; Lloyd, 1997; Pattison & Kahan, 1984; Ross & Heath, 2002; Schwartz et al., 1989). Self-harm has been described as a repetitive syndrome by those in the field (Darche, 1990; Favazza, 1992; Favazza, 1996; Favazza & Conterio, 1989; Kahan & Pattison, 1984; Pattison & Kahan, 1983; Walsh & Rosen, 1988). This is supported by the current results.
indicating that 75% of the self-harmers engaged in the behaviour more than once in the past year, with 24% self-harming eleven times or more. Females reported harming more frequently and were more likely to do so alone. More males reported punching themselves or a wall or harming themselves as a "test of will" or strength or in the context of a game with peers. For example, one male participant reported poking himself with a compass to see if he could "will the pain away", as he wrote, "kind of like Rocky's famous 'no pain, no gain'." In another instance, a male participant described repeatedly hitting himself in the stomach with a stick in order to "toughen [him]self up". This particular youngster also punches walls and has almost broken his knuckles doing so. These findings regarding gender differences may be related to gender-role socialization in which boys are encouraged to prove their physical prowess and are taught that masculinity equals "toughness". More research investigating gender differences in self-harm would be useful in order to help understand how these behaviours are manifested differentially.

Few youth reported visiting the hospital following a self-harm incident, probably owing to the commonly low lethality of these behaviours, issues of confidentiality, and the reportedly poor reception at the emergency department for self-inflicted injuries. It is disconcerting that many youth (67% males and 21% females) reported having told no one about their self-harm and only one in five reported ever receiving professional help for this problem, with most receiving very short-term help. Self-harm is shrouded in secrecy and the stigma makes disclosure unlikely, however school staff such as teachers, counsellors, and nurses, should be made aware of the prevalence of this problem and provided with a basic understanding of the behaviour.
Function of Self-Harm

Self-harm is a multidetermined, multidimensional method of coping that has been hypothesized to have numerous different functional explanations (Bennum, 1984; Favazza, 1989, 1996; Herpetz, 1995; Hibbard, 1994; Ousch et al., 1999; Suyemoto, 1998). In the extant literature, self-harm has been hypothesized to function as an unconventional and maladaptive (albeit effective) way to manage and regulate feelings, particularly negative affect (Bennum, 1983; Bennum, 1984; Briere & Gil, 1998; Herpetz, 1995; Schwartz et al., 1989; Suyemoto, 1998). Results from this study provide support for this supposition. A unique objective of the present investigation was to elucidate the motivational aspects underlying adolescents' self-harming behaviour using a list of motives derived from the extant literature and consultation with clinicians in the field. Despite consensus regarding general phenomenology of self-harm, a paucity of studies have empirically investigated a broad range of motivations (Herpetz, 1995; Ousch et al., 1999) and none have done so in a nonclinical adolescent population.

Present study results revealed that adolescents primarily endorsed negative emotions leading up to a self-harming incident, most commonly anger, depression, loneliness, and frustration. These aversive feelings were reduced both during and after self-harming. In contrast, youth rated themselves as low in self-conscious emotions such as disgust, shame, and guilt prior to self-harming, but these feelings increased substantially after self-harming. Additionally, positive emotions such as happiness and especially relief, almost non-existent prior to self-harming, generally increased following self-harm. Findings from previous studies are in concert with these. For instance, studies by Briere and Gil (1998), with a clinical sample, and by Schwartz et al. (1989), with a sample of substance abusing adolescent females, found that a decrease in negative affect following self-harm corresponded with an increase in self-conscious
emotions. Unlike the present investigation, however, Briere and Gil, found that positive affect (pleasure, excitement) was not affected by self-harm. However, their participants consisted of a clinical sample of abused adults. Perhaps those youth who are self-harming in a group (like some of the boys in the present study), or as part of a game or as a "test of will", may be mostly responsible for the increase in positive affect. Further research examining the circumstances surrounding self-harm would be helpful in attempting to understand these differences in affect.

Self-mutilation, along with other forms of self-harm, is often characterized by a sense of increasing tension in an individual before the action, corresponding to persistent urges to self-harm (Bennum, 1984; Favazza, 1989; Herpetz, 1995; Kahan & Pattison, 1984; Simeon & Favazza, 2001). These urges become overwhelming and the individual self-harms and subsequently feels short-lived relief. The literature on self-harm refers to self-harmers' inability to cope with or tolerate intense and aversive emotion. The most frequently endorsed motivations for self-harm in the current study provided support for the affect modulation function of the behaviour and included: reducing depression, anxiety, or stress; self-hatred and anger; self-punishment; loneliness or alienation; and, distracting self from problems. These functions are consistent with the literature on self-harm, although very few studies examine motivations utilizing an adolescent sample and most do so indirectly (e.g., Lloyd, 1997; Ross & McKay, 1979; Solomon & Farrand, 1996; Walsh & Rosen, 1988). Common reasons for self-harming endorsed by a sample of 243 adolescents in custody facilities (McCreary Centre Society, 2001) included: loneliness or depression (61%); coping difficulties (42%); substance use problems (32%); anger -- at custody staff (32%), at peers (29%); and, problems with parents (24%). Despite coming from a very different sample, with the exception of substance use problems, the present study findings are comparable to these.
With respect to gender differences, more males in the present study reported self-harming in order to communicate with or influence others (for attention, shock value, to join a group) or out of boredom, curiosity, or for fun. A higher percentage of females reported deep despair as a motivating factor, nominating intrapunitive factors (self-hatred, self-punishment), self-control, loneliness, depersonalization, and depression as reasons for self-harming. Overall, proportionately more males endorsed the externalizing and more females endorsed the internalizing motivations. These gender differences are supported by evidence in the literature that disturbed females are more likely to turn their negative feelings inward and males are more likely to turn outward (Langhinrichsen-Rohling et al., 1998; Leadbeater et al., 1995; Parker et al., 1998; Schonert-Reichl & Offer, 1992; Stapley & Haviland, 1989). These gender differences may be related to different socialization patterns.

Osuch et al. (1999) conducted a recent study in which they examined motivations for self-injury in a sample of 99 psychiatric inpatient adults utilizing a scale they developed to quantify intentions. Test-retest reliability was determined to be acceptable, suggesting that individuals were consistent in reporting their subjective intentions with respect to self-harm. Results from factor analysis supported six different sets of motivations: affect modulation, desolation (modulating isolation or emptiness, similar to affect modulation), punitive duality (self-punishment, with internal/external motives to act), influencing others, self-stimulation, and magical control (magical thinking). The present study findings concur with respect to the first five factors, while the last factor is more representative of psychiatric populations with more severe psychopathology (i.e., personality or thought disordered individuals or character traits). Such et al. noted that study participants who endorsed affect-related motivations were more likely to report emotional relief resulting from self-harm.
With the variety of developmental changes occurring during adolescence, effective coping is paramount to health and well-being. It is important to note a majority (75%) of the self-harming adolescents in the present study reported life stress that coincided with the initiation of self-harm or with individual incidents of self-harm. It can be assumed that some of this stress comes from changes considered normative (i.e., puberty, transitioning to high-school, peer problems), whereas other aspects of stress are non-normative (i.e., loss or separation with parent or sibling, accident). More specifically, youth in this study reported stressors consistent with the literature on adolescent stress and coping, including interpersonal problems, pressure from home and from school, feeling overwhelmed or other negative emotions, low self-esteem, or a combination of these stressors (Compas et al., 1987; Compas, Malcarne, & Fondacaro, 1988; Spirito, Overholser, & Stark, 1989; Stark, Spirito, Williams, & Guevremont, 1989).

Commonly studied categories of coping strategies in the literature include problem-focused coping (approach, active, or productive coping), emotion-focused coping (avoidant, passive, or nonproductive coping), and seeking social support (Lazarus & Folkman, 1984). Problem-focused coping involves cognitive or behavioural attempts to change the stressor through efforts directed toward it whereas emotion-focused coping involves attempts to regulate negative emotional reactions associated with or resulting from the stressor often by directing efforts away from the stressor. In general, emotion-focused coping is considered to be less effective across most problems, although context is important and it may sometimes be effective in the short-term. According to researchers, effective coping is flexible and responds to the demands of the situation (Compas, Orosan, & Grant, 1993; Lazarus & Folkman, 1984; Lohman & Jarvis, 2000).
Findings from research with distressed, self-destructive, and suicidal adolescents have provided some evidence that these youngsters rely on emotion-focused coping strategies regardless of situation and do not use social support as much as "normal" adolescents (Ebata & Moos, 1989; Glyshaw, Cohen, & Towbes; Spirito et al., 1989). Over-reliance on emotion-focused coping (i.e., avoidance, internalization, self-blame, escape, rumination) has been associated with increased psychological distress (Compas et al., 1988; Compas et al., 1993; Ebata & Moos, 1989; Glyshaw et al., 1989; Lohman & Jarvis, 2000). Results from the present investigation provide evidence that self-harm is an emotion-focused coping strategy that functions to self-soothe or regulate affect, particularly for females in the sample. Hence, coping may be an important and untapped area for research with adolescent self-harmers to determine patterns of coping as related to motivations and functions of these behaviours.

**Correlates of Self-Harm**

**Psychological Adjustment**

In the present investigation, it was hypothesized that self-harmers would manifest increased overall maladjustment when compared to non-self-harmers. Specifically, it was hypothesized that self-harmers would report more emotional distress and anger discomfort and lower self-esteem than non-self-harmers. Due to inconclusive findings in the extant literature, another objective of the current study was to explore the relation between anger control, antisocial behaviour, and self-harm. Hypotheses were based on previous research suggesting that characteristics common to self-harmers include hostility (Bennum, 1983; Darche, 1990), depression and anxiety (Bennum, 1983; Darche, 1990; Garrison et al., 1993; Raine, 1982; Ross & Heath, 2002), and low self-esteem (Darche, 1990; Favazza & Conterio, 1989).
Present findings indicated that self-harmers manifest higher levels of overall psychological maladjustment, emotional distress, and anger discomfort and lower levels of self-esteem and sociability in comparison to non-self-harmers. Only one gender difference emerged, revealing that females reported higher levels of emotional distress than males. This finding is consistent with a large body of literature that suggests that females are more likely to report internalizing symptoms such as depression and anxiety (Allgood-Merten et al., 1990; Leadbeater et al., 1995; Schonert-Reichl & Offer, 1992). Limited research has explored the role of anger and anger expression in self-harming individuals. Nevertheless, research with adult populations has suggested that self-harmers may be more likely to come from families in which the outward expression of anger was restricted or punished (Carroll et al., 1980; Favazza & Conterio, 1989) and therefore may feel more discomfort with anger in general in comparison to non-self-harmers. Due to the correlational nature of this investigation, it was not possible to determine whether individuals are depressed and then self-harm or whether individuals become depressed once they start self-harming. Prospective studies would be helpful in examining causal links between psychological factors and self-harming behaviour.

In the present study, self-harmers reported increased antisocial behaviour and anger control problems as compared to non-self-harmers. No gender differences emerged, despite general consensus that a greater proportion of males in the population exhibit externalizing problems (Schonert-Reichl & Offer, 1992; Wangby et al., 1999). It may be that antisocial behaviour is increasing among adolescent girls, or at least among the girls in this sample, or perhaps externalizing behaviours in young females have largely been neglected due their conceptualization as "male problems". However, recent research has suggested that
internalizing and externalizing distinctions may not be not relevant for adolescent girls and women as they are frequently comorbid (Hastings et al., 1996; Wangby et al., 1999).

Previous research on self-harm has been inconclusive across externalizing symptomatology, with most studies utilizing incarcerated samples to examine antisocial behaviour. Results from a study conducted by Hastings et al. (1996) revealed that conduct disordered girls were more likely than boys to use emotion-focused coping strategies, including self-harm, but reported levels of antisocial behaviour that were similar to boys. Patton et al. (1997) found that frequent and multiple antisocial behaviours increased the risk of self-harm in a population study of adolescents, especially for females. In contrast, a study using a small clinical sample (N = 48) of adolescent self-harmers and a control group (Darche, 1990) found that self-harmers were less likely to be diagnosed with either conduct disorder or adjustment disorder when compared to non-self-harming clinical controls. Substance abuse, considered an antisocial behaviour, has been associated with self-harm in both genders across numerous studies (Favazza & Conterio, 1989; Kahan & Pattison, 1984; Patton et al., 1997; Schwartz et al., 1989; Simpson & Porter, 1981; Walsh & Rosen, 1988; Zlotnick et al., 1999). Interestingly, results from studies, including the present one, demonstrate that self-harming behaviour does not usually occur while under the influence. Perhaps using substances and self-harming are different ways of accomplishing the same goal. It would be useful to ascertain why an individual might choose one self-destructive behaviour over another at any given time.

In the present investigation, both internalizing (emotional distress, self-esteem) and externalizing (antisocial behaviour, anger control problems) patterns were significantly related to self-harming behaviour in both males and females. This finding supports the contention put forth by Chowanec et al. (1991) suggesting that self-harming adolescents are not adequately
served by the dichotomization of psychopathology as either internalizing or externalizing. Adolescents who engage in self-harming behaviour appear to manifest symptoms from both dimensions.

Sociodemographic Variables

Sociodemographic characteristics are rarely reported in studies of self-harming behaviour. Family composition is sometimes reported, however it is the quality of the family rather than the composition that determines whether it is a risk factor (Garrison et al., 1993; Resnick, Harris, & Blum, 1993). Within the literature, an association between disrupted attachment and self-harm has been substantiated (Deiter et al., 2000; Favazza & Conterio, 1989; Pattison & Kahan, 1983; Rosen et al., 1990; Simpson & Porter, 1981; van der Kolk et al., 1991). In the current study, youth were asked if their parents or guardians were prevented from caring adequately for them by a physical or emotional disability and results indicated that self-harmers were more likely than non-self-harmers to have had this occur. The results suggest the salience of disruption in caregiving during childhood or early adolescence. There are many different types of disruption and they may be independently related to different effects. It would be helpful to have specific information regarding this disruption in order to determine if specific types of difficulties are related to self-harming behaviour or to subtypes of self-harm. Moreover, information on life events would be of great use in determining what types of events have the greatest association with self-harm.

Health-Compromising and Risky Behaviours

Present study findings provided some support for the relation between health behaviors including smoking, tattooing, and suicide and risky behaviours (i.e., socially sanctioned thrill-seeking recreational activities, negative behaviours such as reckless or drunk driving and drug
use) and self-harm. More specifically, results indicated that female self-harmers were more likely than male self-harmers and non-self-harmers of both genders to report smoking. Further, self-harmers of both genders were more likely to report having tattoos and engaging in risky behaviours. In accordance with the growing recognition that risk behaviours often co-occur, recent research has highlighted the interrelationship between different types of self-destructive behaviours and health risk behaviours (Boudewyn & Liem, 1995; Elliott, 1993; Zweig et al., 2001). Much of this research follows from early work by Jessor (1991), who referred to a clustering of "problem behaviours". Similarly, researchers investigating self-harm have proposed classifications that reflect the interrelationships of these behaviours such as impulse disorders, multi-impulsive syndrome, and deliberate self-harm syndrome (Lacey & Evans, 1986; Favazza, 1996; Kahan & Pattison, 1984).

The relation between self-harm and suicide has been long discussed, with early discussions viewing self-harm as a variant of suicide and more recent ones clearly differentiating between the two (Favazza, 1996; Guertin et al., 2001; Patton et al., 1997; Ross & McKay, 1979; Simeon & Favazza, 2001; Solomon & Farrand, 1996; Stanley et al., 2001; Walsh & Rosen, 1988; Winchel & Stanley, 1991). In the present investigation, it was hypothesized that self-harmers would be more likely than non-self-harmers to report a history of suicide attempt. In accordance with the literature, considerable overlap existed between self-harm and suicide in this study. One quarter of the self-harmers in the present study had also attempted suicide and 83% reported suicidal ideation. This is in contrast to the finding that 29% of all non-self-harmers and 37% of the overall sample reported suicidal ideation. Almost all those adolescents who reported attempting suicide had also engaged in self-harm. Few empirical studies have examined the relation between self-harm and suicide. In their study of nonsuicidal self-damaging behaviour
with a school-based sample of 444 adolescents, Garrison et al. (1993) found that suicidal ideation and suicide attempts were significantly associated with increased risk of self-harm, with an overlap of 14% to 21% between the self-harmers and the suicide attempters. Elsewhere, the incidence of suicidal ideation among adult self-harmers has been reported to vary from 28% to 41% (Simeon & Favazza, 2001). Several self-harmers in the present study specifically noted in describing their behaviours that their self-harming was not suicidal in nature, yet despite these protests significant relations were found among suicidal behaviour variables (suicidal ideation, history of suicide attempt) and self-harming behaviour variables (self-harm ideation and self-harming behaviour). These findings suggest the importance of examining behaviours across the continuum of self-destructive behaviour (from "normal" to completed suicide) for their interrelationships. Perhaps, for some adolescents, self-harm represents an important step along the pathway to suicide.

Schwartz et al. (1989) conducted a study on cutting and carving in adolescent females in outpatient treatment for substance abuse and found that suicide attempt differentiated between a subset of 30 self-harmers and a control group. It may be that if self-harming behaviour becomes more chronic and enduring, the individual becomes increasingly despondent and ashamed. In the present study, following a self-harming incident, adolescents reported that they felt shame, guilt, and disgust. After a period of time of self-harming, it may become increasingly difficult to manage these negative feelings toward the self, leading individuals to contemplate suicide. Further research, especially longitudinal studies, would be important to examine this relationship more closely.
Predicting Self-Harm

A unique contribution of this study was to examine the ways in which sociodemographic, psychological adjustment, and health and risky behaviour correlates work collectively to predict self-harming behaviour. Logistic regression analyses were conducted to examine the relative contributions of the various predictor variables to self-harm. Gender, parental illness, knowing someone who self-harms, anger discomfort, problems with anger control, and negative self-esteem and sociability were not significant in the model. Using the significant variables of emotional distress, antisocial behaviour, risky behaviour, and suicidal ideation in the model yielded accurate prediction of non-self-harmers, but was not sufficiently sensitive in predicting the self-harmers. Results suggest that these variables may be valuable in identifying or predicting those at adolescents who are at risk for self-harm, but also that other variables must also be targeted as possible risk factors. It will be important to examine other factors for their explanatory power, such as family functioning, life events, interpersonal skills, emotional inhibition or alexithymia, loneliness and alienation, specific types of risky behaviours, and coping strategies and skills.

Clinical Implications

The present research extends the current understanding of adolescent self-harm as it occurs in a community or school-based population. Results indicate that a significant number of adolescents, nearly 21% of females and 9% of males, report self-harm. This prevalence rate is consistent with those in the limited empirical research that has been conducted with adolescents. These findings suggest that one in five adolescent girls and one in eleven adolescent boys engage in self-harming behaviour, making self-harm a significant problem with various clinical implications.
Primary motivations for self-harm include affect regulation and external reinforcement or influencing others. Study findings suggest that the latter is more common among males. In clinical practice, in order to help an individual decrease self-harming behaviours, it is important to understand the specific meanings, motivations, and functions of the behaviour for that individual. Prevention and intervention efforts for self-harm are more likely to be effective if they are developed with an understanding of the reasons why adolescents engage in self-harming behaviour (Millstein, 1993). Perhaps healthier alternatives can be found to meet the same needs. Different motivations may indicate different treatment approaches as well. Prevention and intervention programming may be aimed at increasing emotional expressiveness, identifying feelings, and enhancing self-esteem, as well as building a repertoire of more adaptive coping and problem solving skills.

Present study findings indicate that self-harming behaviour must be taken very seriously as it is associated with maladjustment, suicide, and other forms of self-destructive behaviour. Given the overlap with suicidal ideation and behaviour, self-harming adolescents should be assessed for suicide risk and for the presence of other health-compromising or risky behaviours. Self-harmers may engage in a variety of self-destructive behaviours that must all be addressed in a screening context and within the course of treatment. Results from the current study reveal that gender differences in the prevalence and correlates of self-harming behaviour, suggesting that different intervention and treatment may be indicated based on gender. Implications of the notion, supported in the present investigation, that self-harm is a maladaptive coping strategy mean that both prevention and intervention efforts should be directed toward teaching and encouraging more positive and constructive coping practices among youth. It is vital that
clinicians and educators consider long-term mental health outcomes and trajectories in working with self-harming adolescents.

Strengths, Limitations, and Future Directions

Strengths of the Study

The present study contributes to the literature by adding to the limited empirical database on self-harm in general and, more specifically, adolescent self-harm. Unlike much of the extant research on self-harming behaviour, the sample is relatively large (N = 424) and nonclinical, and is approximately evenly distributed across genders. The results are therefore generalizable in terms of the adolescent population in the participating school or in other similar populations. Further, the approach taken to survey the youth is unique in three major ways: (a) the use of broad terms and numerous open-ended questions (i.e., Have you ever harmed, hurt, or injured yourself on purpose....) as an attempt to include a youth perspective and to avoid being prescriptive and suggestible (Millstein, 1993; Patton et al., 1997; Zaslow & Takanishi, 1993); (b) the attempt to clearly differentiate between risky behaviours, suicidal behaviours, and nonsuicidal self-harm; and, (c) the use of a variety of related questions to delve into the nature, dynamics, and motivational aspects of self-harming behaviour and hypothesized correlates. Self-harming adolescents ascribed a variety of different motivations to their behaviour and findings debunked the commonly held belief that self-harm is primarily a manipulative, attention-seeking behaviour (Bennum, 1984; Favazza, 1989; Feldman, 1988; Hibbard, 1994; Ross & McKay, 1979). The present study extends previous research by including a measure of social desirability. With self-report data, participants may respond in socially desirable or psychologically defended ways. Importantly, relations among study variables were consistently sustained even after
controlling for social desirability. Finally, internal consistency reliabilities utilizing Cronbach's alpha across all measures were acceptable and comparable to previous research findings.

**Limitations of the Study**

There are several limitations of the present investigation that are important to note. First, the data for this research relied primarily on adolescent self-report measures that were not independently confirmed by unbiased sources. Unfortunately, given the secrecy and nonsocially acceptable nature of self-harming behaviour, the youth were questioned anonymously and no follow-up occurred. However, the researcher built several questions into the survey that helped to check for valid responses. Moreover, a measure of social desirability was used to assess socially desirable response tendencies. Second, although the overall sample size was large (N = 424), only sixteen males self-harmed. As a result, when examining categorical variables with a few levels, cell sizes became too small. Third, this exploratory study was based on a large sample of adolescents intended to be representative, but generalizability is limited for reasons that follow. All students attended the same school in the same school district. School leavers were not included in the sample as they should be, given that the out-of-school adolescent population likely manifests increased psychopathology (Patton et al., 1993; Zweig et al., 2001). In terms of family composition, parental educational level, and ethnicity, the sample is not entirely representative of all youth; the sample consisted of adolescents of primarily European descent who lived in two-parent homes. Fourth, with respect to study design, the cross-sectional nature of the study precludes an increased understanding about temporal sequence or etiological factors. Clearly, longitudinal research is necessary in order to make causal inferences concerning the significant relations found in this study. Finally, results regarding emotional
states of adolescents before, during, and after self-harming, were generated retrospectively. It would be beneficial to have adolescents report their emotional status as they have these feelings.

Future Directions for Research

There are many ways upon which to expand and improve the current study. In particular, large-scale longitudinal studies are necessary to explore the predictors and correlates of self-harm in a nonclinical population as well as the long-term risk of suicide and more severe problems of psychological adjustment. Clarification regarding the association between suicide and self-harm is required in order to determine why some self-harmers are at risk for suicide while others are not. In fact, recent studies (Guertin et al., 2001; Patton et al., 1997; Stanley et al., 2001) suggest that self-harmers who also exhibit suicidal behaviour may be at an increased risk of morbidity and mortality, with more persistent suicidal ideation and misperceptions of the lethality of their attempts.

With respect to methodology, follow-up interviews would be useful for both validating questionnaire results and yielding further qualitative information on the phenomenology of self-harming behaviour. Together with previous research, current findings indicate that adolescent self-harmers may engage in a variety of health-compromising behaviours. Interviews would allow for deeper insight into the interrelationships of these risky behaviours and their functions. It may be that focusing on one specific self-destructive behaviour (i.e., drug use, self-mutilation, eating disorder) or simply on direct self-harm is inadequate in terms of meeting the needs of these young people. An improved understanding of this would be beneficial in implementing intervention and in addressing primary prevention programming.

Seventeen percent of the adolescent self-harmers in the present study reported that their self-harming had occurred more than a year previous only. It has been speculated that for some
adolescents, self-harm is a developmental phenomenon used to negotiate a difficult adolescent period (J. Garland, personal communication, March 15, 2001; Suyemoto, 1998). Suyemoto suggests that the function of self-harm may be linked to different stages of development; therefore, once the adolescent has navigated a particularly difficult stage, self-harm would no longer be useful. It would be interesting to interview those adolescents who have self-harmed in the past but who no longer self-harm with respect to what helped them to stop and to compare the dynamics, motivations and functions underlying their self-harming behaviour with that of adolescents who continue to engage in these behaviours. It may be that adolescents who stop self-harming simply move on to engage in another self-destructive behaviour. Studies investigating treatment outcome as well as longitudinal research examining the trajectory of nonclinical adolescent self-harm would be useful.

The role of emotions appears to be central in terms of understanding the functions of self-harm. Adolescents who engage in these behaviours may suffer from an "impoverished emotional lexicon" (Saarni, 1999, p. 311) in which using words to vent emotion is not an acceptable or available strategy. According to Saarni (1999), "effective coping is inseparable from effective emotional regulation and vice versa." (p. 226). Future research should investigate emotional expression, coping, and problem solving across different types of situations to identify specific deficits for remediation. Given that self-harmers demonstrate increased emotional distress as well, research into the role of specific cognitive and affective patterns would prove valuable in understanding the personal vulnerabilities of self-harmers. Limited research with adult self-harmers has suggested that alexithymia may be associated with self-harm, functioning as a risk factor for the behaviour (Zlotnick et al., 1996). One method that might be used to obtain reports of the emotional status of adolescents both in every day life and as they are
engaged in self-harming behaviour, rather than retrospectively, is the Experience Sampling Method (Larson, 1997). Adolescents would be responsible for carrying an electronic pager for a period of time and would provide reports on their experience (i.e., feelings, actions) as they were signaled at random times throughout the day. This methodology would enable comprehensive data to be collected, including information regarding the social context of the behaviour. Additionally, this might prove to be an effective intervention in terms of having the youth focus attention on their feelings and motivations rather than avoiding them with emotion-numbing behaviours.

Summary

The current understanding of self-harm in the nonclinical adolescent population is extremely limited, despite the fact that the behaviour most often originates in this developmental period (Favazza, 1989; Simeon & Favazza, 2001; van der Kolk et al., 1991). Therefore, the present study intended to augment the understanding of adolescent self-harm. More specifically, the investigation aimed to identify the prevalence of self-harm in this population, explore the nature, experience, and function of the behaviour, and provide insight into the psychological adjustment and anger expression of self-harmers as compared to non-self-harmers.

The present study provides new empirical data on self-harming behaviour among school-based adolescents. An overall self-harm ideation prevalence rate of 42% was found along with a self-harming behaviour prevalence rate of 15%, suggesting that this is a significant problem among youth. Further research is clearly indicated. Importantly, the conceptualization of self-harm utilized in the study is adolescent-driven, informed by the perspectives of the adolescents themselves. The use of open-ended information to supplement the closed questions yielded richer data that provided a broad picture of self-harming behaviour in this population.
Results suggest that a significant number of adolescents who engage in these behaviours are also at risk for suicide and may engage in a variety of risky behaviours. Current study findings are consistent with previous research and literature on self-harm that suggest that self-harm is indicative of maladjustment. Compared to non-self-harming peers, self-harmers manifested internalizing symptoms such as increased emotional distress and anger discomfort and decreased self-esteem and sociability. Additionally, self-harmers reported externalizing symptoms including increased antisocial behaviour and anger control problems. These associations remained stable across both genders even when social desirability was controlled for. Suicidal ideation, antisocial behaviour, emotional distress, and risky behaviour emerged as the most salient predictors of self-harming behaviour, although results indicated that some of the variance is also captured by other factors beyond the scope of the present study. These results have important implications for counsellors, psychologists, and educators who work with youth and who are in a position to promote positive adjustment and well-being.
References


Appendix A: Student Recruitment Letter
Dear Student,

You are being invited to participate in a research study that we are conducting at your school, entitled "Understanding Adolescent Health and Well-Being." Dr. Kim Schonert-Reichl and Aviva Laye from the University of British Columbia are organizing this project. The purpose of the study is to ask you to help us, as researchers and people who work with teenagers, to better understand the physical and emotional health issues for your age group. You are the experts on yourselves and your experiences are very important. Since there is very little information out there from Canadian students, your participation can really help us better understand the needs of other Vancouver teenagers like you. We also hope that the results of this study will help teachers and counsellors improve their understanding of the issues Canadian teenagers are dealing with.

If you decide to participate in this study, you will be asked to anonymously fill out a set of questionnaires that should take you approximately 30 minutes to complete. By anonymous, we mean that you will be asked NOT to put your name on any of the pages we give you. This means that all your answers are completely confidential; they cannot be made available to anyone at your school or to your parents/guardians. One of the questionnaires will ask you about your background. The others will ask you questions about your thoughts, feelings, and actions. There are no right or wrong answers, just your honest, thoughtful answers. Those of you who decide not to participate in the project will be given something else to do within your classroom that is related to your regular classroom instruction. You will still be expected to come to class.

It is important for you to know that participation is voluntary, meaning that you have a choice. Your parents will also have a choice. In order for you to participate in this study, you need to take home the attached permission form and give it to your parent(s) or guardian(s) so that they can sign it and return it to you and you can bring it back to school. Please do your best to return the permission slip to your teacher by next class.

When you return your permission slip, whether you participate or not, you will have the chance to win a $15.00 gift certificate for A&B Sound. One winning student will be randomly drawn from each class.

Thank you for considering this request. We hope that you agree to participate! Yours truly,

Kim Schonert-Reichl, Ph.D.
Aviva Laye
Appendix B: Parental/Guardian Consent Form.
Dear Parent or Guardian:

We are writing to request permission for your son or daughter to participate in a research project that we are conducting at their school, entitled Understanding Adolescent Health and Well-Being. This project is being undertaken by Aviva Laye to fulfill the thesis requirements for a Master of Arts degree in School Psychology at the University of British Columbia (U.B.C.), under the supervision of Dr. Kim Schonert-Reichl, Professor of Educational Psychology and Special Education at the University of British Columbia.

What is the purpose of the research study?

The purpose of this study is to ask questions relevant to adolescent health behaviours and related characteristics (for example, emotional distress, self-esteem) that will help us better understand the physical and psychological health of today’s teenagers. Since research in this area using Canadian youth is extremely limited, your child’s participation in this study will help us better understand the factors contributing to the health and well-being of our local youth. We are interested in the thoughts and experiences of students in grades 9 and 11. Given that pressures on youth are higher today than ever before and that violence, depression, and stress levels have been increasing across this age group, it is important that we gain some understanding from adolescents... (Continued on the back...)
of how they are doing, what they are doing, and how they feel about their lives. It is hoped that results from this study will help educators at your child’s school better understand and meet the needs of their students, thereby facilitating an optimal educational environment. Further, results may have implications for the formulation of important goals for health education and programming.

What is involved?

Your child, along with many other students at ___________ school, is being invited to participate in this research study. Students who participate in the study will be asked to fill out a set of questionnaires in their classrooms that will take approximately 30 minutes to complete during class time. The questionnaires will be filled out anonymously — no names will appear on any of the forms. Most of the questionnaires have been used previously in research or in general use in school settings and there have been no ill effects from answering these questions. One set of questions asks students to provide information about their background, such as their birthdate, ethnicity, and parental/guardian occupation and level of education. As well, students are asked about their health background and health behaviours. The questionnaires also include some questions regarding self-harm behaviours, including suicide thoughts and potential. The other questionnaires assess general adjustment and emotional well-being. Many students find the questionnaires interesting. Students whose parents do not provide consent to participate in the study will be given work to do within the classroom that is relevant to the subject of the class they are in at the time. Following completion of the questionnaires, the class will resume.

Participation in this study is voluntary and withdrawal from the research study or refusal to participate at any time will not jeopardize the student in any way.

How will privacy and confidentiality be maintained?

Any information resulting from this research study will be kept strictly private and confidential. Participants will be instructed not to write their names on the questionnaires; again, the questionnaires will be completed anonymously. All documents will be kept in a locked cabinet in the custody of the Co-Investigator, Aviva Laye. Participants will not be identified by name in any reports of the final study. Under no circumstances will anyone other than the researchers have access to the information collected from the students. The questionnaires will not be made available to other students, parents, teachers, or any school or university personnel.

Is there any compensation?

All students who return these consent forms, regardless of whether consent to participate is provided, will have the opportunity to win a $15.00 gift certificate for A & B Sound. One student from each participating classroom will be randomly selected as the winner.

ateurs.

We would be extremely pleased if you decide you are willing to give your son or daughter permission to participate and if he or she decides to do so.

Thank you kindly for your time and consideration of this request.
PARENT/GUARDIAN CONSENT FORM: *Understanding Adolescent Health and Well-Being*

Principal Investigator: Dr. Kim Schonert Reichl, Associate Professor
University of British Columbia
Faculty of Education, Dept. of Educational and Counselling Psychology, and Special Education
Tel: (604) 822-2215

Co-Investigator: Aviva Laye (Master's Candidate)
University of British Columbia
Faculty of Education, Dept. of Educational and Counselling Psychology, and Special Education

*Note:* This study will be completed to fulfill the thesis requirements of a Master of Arts degree in School Psychology.

**PLEASE COMPLETE THIS PAGE FOR YOUR RECORDS AND RETURN THE FORM ON THE FOLLOWING PAGE TO SCHOOL WITH YOUR CHILD.**

THANK YOU KINDLY.

For further information:

If you would like more information before giving your permission for your son/daughter to participate in this study or if you have any questions, you may contact Dr. Kim Schonert-Reichl or her co-investigator, Aviva Laye at (604) 822-2215. You may also contact your child's Grade Counsellor.

If you have any concerns about the treatment or rights of your child as a research participant, you may contact the Director of Research Services at the University of British Columbia, Dr. Richard Spratley at (604) 822-8598.

**PARENT/GUARDIAN CONSENT:**

I have read and understood the details outlined in this letter regarding the study entitled, *Understanding Adolescent Health and Well-Being*.

I understand that my child's participation in this study is entirely voluntary and that I as well as my child may refuse to participate or withdraw from the study at any time without any consequence.

I have received a copy of this consent form for my own records.

☐ YES, my son/daughter has my permission to participate.

☐ NO, my son/daughter does NOT have my permission to participate.

Parent or Guardian's Name: ____________________________ (please print)

Parent or Guardian's Signature: ____________________________

Son's or Daughter's Name: ____________________________ (please print)
PARENT/GUARDIAN CONSENT FORM:  *Understanding Adolescent Health and Well-Being*

I have read and understood the details outlined in this letter regarding the study entitled, *Understanding Adolescent Health and Well-Being*.

I understand that my child's participation in this study is entirely voluntary and that I as well as my child may refuse to participate or withdraw from the study at any time without any consequence.

I have received a copy of this consent form for my own records.

☐ YES, my son/daughter has my permission to participate.

☐ NO, my son/daughter does NOT have my permission to participate.

Parent or Guardian's Name: __________________________________________(please print)

Parent or Guardian's Signature: _______________________________________

Son’s or Daughter’s Name: ____________________________________________(please print)

Please send this form back to school with your son or daughter for the next English class. Thank you!

Your prompt response whether "yes" or "no" will enable your child to be eligible for a gift certificate draw.
Appendix C: Questionnaire Package Cover Page
Thank you for participating in this UBC research project!

These questionnaires will help us to better understand your thoughts, feelings, and experiences. By volunteering to complete these questionnaires, you are giving your permission to participate in our study.

Remember that these questionnaires are ANONYMOUS and CONFIDENTIAL--that means that you don't have to put your name anywhere on these pages so nobody will know what your answers are.

Your help today is VERY IMPORTANT to us.

This package contains 17 pages in total, including this cover page.
Pages 2-5 include a set of questions that ask about you and your background.
Pages 6-16 include questions about your thoughts, feelings, and actions.
Page 17 is optional (you don't have to fill it out if you don't want to).

Most questions can be answered by choosing from responses provided or by filling in some blanks.
The boxes (□) can be marked in the following ways: ☒ or ☑

➢ If you do not understand a question, please ask us for help.
➢ Please answer each question as best as you can.
➢ This is NOT a test—there are no right or wrong answers, only your answers.
➢ All your responses will remain confidential so be as honest and as accurate as you can in answering each question.
➢ You can choose to withdraw from the study at any time without consequence.

Have a great day! 😊
Appendix D: Background Information Form
TELL US ABOUT YOURSELF

We are interested in learning about your background. Please follow the directions and honestly and carefully and answer all of the questions. Remember that your answers are anonymous and confidential and will only be seen by the researchers.

1. How old are you? __________ years.

2. Are you female or male? (check ONE) □ Male □ Female

3. What grade are you in? (check ONE) □ 8th □ 9th □ 10th

4. What is your ethnic background?
   □ Asian
   □ East Indian
   □ First Nations/ Aboriginal
   □ European/ Caucasian
   □ Middle Eastern (i.e., Arab country, Israel)
   □ West Indian
   □ Hispanic/Latino
   □ African
   □ Other ethnic or cultural group(s), PLEASE specify: ____________________________

5. Which of these adults do you live with most of the time? (check off ALL the adults that live in your house)
   □ Both my parents □ My mother and stepfather/boyfriend
   □ My mother only □ My father and stepmother/girlfriend
   □ My father only □ My grandparent(s).
   □ Other adults (for example, aunt, mom’s boyfriend, friend’s parents) EXPLAIN: __________________________________________
6. What is your birthdate? ______/_____/_____
   (month) (day) (year)

8. How much education does your father or male guardian have?

   - □ Some high-school
   - □ Graduated from college or university
   - □ Graduated from high-school
   - □ Attended graduate or professional school (e.g., to become a doctor, lawyer, or teacher)
   - □ Vocational or technical school
   - □ Some college or university
   - □ Don't know

9. What is your father's or male guardian's job? (DESCRIBE THE WORK THAT HE DOES. PLEASE BE SPECIFIC)

   ______________________________________________________________

10. How much education does your mother or female guardian have?

    - □ Some high-school
    - □ Graduated from college or university
    - □ Graduated from high-school
    - □ Attended graduate or professional school (e.g., to become a doctor, lawyer, or teacher)
    - □ Vocational or technical school
    - □ Some college or university
    - □ Don't know

11. What is your mother's or female guardian's job? (DESCRIBE THE WORK THAT SHE DOES. PLEASE BE SPECIFIC.)

   ______________________________________________________________

12. Has your parent(s) or guardian(s) had any serious physical or emotional illnesses or any accidents that have made it difficult for them to raise you?

   - □ No  □ Yes

   If yes, please explain. ______________________________________________________________
   ______________________________________________________________
13. Do you smoke cigarettes every day or almost every day? □ No □ Yes

14. Do you consider yourself to be "a smoker?" □ No □ Yes

15. Do you have any piercings? □ No □ Yes -- If yes, how many do you have? ______________________

16. Do you have any tattoos? □ No □ Yes -- If yes, how many do you have? ______________________

**IF YOU DO NOT HAVE A TATTOO OR PIERCING, YOU CAN SKIP THE NEXT TWO QUESTIONS, #17 AND #18.**

17. Describe your tattoos and/or piercings and explain what they mean to you. (What symbol or picture is represented and what does it mean to you?)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

18. When you tattoo or pierce do you find that you feel different during the procedure or afterward?
   Do you ...
   Get a "rush" □ No □ Yes
   Feel calmer □ No □ Yes
   Feel numb □ No □ Yes

   Other (PLEASE explain): __________________________________________________

19. Have you ever had plastic surgery? □ No □ Yes
   If yes, what did you have done? ___________________________________________
20. Have you had any major illnesses?  □ No  □ Yes

What major illness(es) have you had? ____________________________________________

21. Have you ever been hospitalized for any reason?

□ No  □ Yes -- If you have been hospitalized, PLEASE explain in the space provided below:

I was hospitalized for _____________________________________________________________

How old were you when you were hospitalized? I was ___________ years old.

22. Have you ever received any professional help, treatment, or medication for any personal or emotional problem?

□ No  □ Yes
ABOUT MY LIFE

We want to know what your thoughts, feelings, and experiences are about an issue important to many teenagers. You can help teach us more about the experiences of people your age. There are no right or wrong answers -- just your answers. It is important that you answer each question honestly, and it may help to know that your answers will be kept private and confidential. We are interested not only in what you can tell us about yourself, but also about other young people you know.

Read the following questions carefully. Depending on the question, you can mark ONE box ☑ or ☐ or write your answer in the space provided. It might seem like some questions are repeated, but because words can mean different things to different people with different experiences, you are asked to respond to questions that are only slightly different from each other. THANK YOU for your cooperation.

THE FOLLOWING QUESTIONS ASK YOU ABOUT YOUR THOUGHTS AND EXPERIENCES...

1. Have you ever considered or thought about purposely harming yourself or doing something that could cause your body injury, but not actually done it?
   ☐ No ☑ Yes

2. Have you ever thought so much about purposely harming yourself or doing something that could cause your body injury that you couldn't think of or do anything else?
   ☐ No ☑ Yes

3. In the past SIX MONTHS (since APRIL 2000) how often have you thought about harming yourself or causing yourself injury?
   ☐ Every day/almost every day
   ☐ Once a week
   ☐ Once a month
   ☐ Every few months
   ☐ Never

4. If you have had these thoughts, have you told anyone about them?
   ☐ I haven't had these thoughts.
   ☐ I have had these thoughts but I haven't told anyone.
   ☐ I have had these thoughts and I have told someone.

If you told someone about these thoughts, what is the relationship you have with this person? (e.g., friend, teacher, parent, etc.)

(PLEASE DO NOT PROVIDE NAMES)
5. Have you ever done anything on purpose to injure, hurt, or harm yourself or your body (but you weren't trying to kill yourself)?
   □ No  □ Yes  
   (If your answer is "No", go on to the next question.)
When was the most recent time you did this? _____ days ago  OR  _____ months ago  OR  _____ years ago.
What did you do? __________________________________________________________

6. How many times IN THE PAST YEAR (since OCTOBER 2000) have you done something on purpose to hurt, harm, or injure yourself?
   □ 0 (Never)  □ 1 time  □ 2 times  □ 3-10 times  □ 11-20 times  □ More than 20 times  □ More than 50 times

7. Have you ever injured yourself on purpose, but told people (your parents, friends, or others) that it was an accident?
   □ No  □ Yes  
   (If your answer is "No", go on to the next question.)
What did you do? __________________________________________________________

8. Have you ever done anything really risky or dangerous that you knew might have harmed you or even killed you? (e.g., driving recklessly, jumping off a cliff, mixing drugs, etc.)
   □ No  □ Yes  
   (If your answer is "No", go on to the next question.)
If yes, how many times in the PAST YEAR (since OCTOBER 2000)? ____________ times.
When was the most recent time you did this? _____ days ago  OR  _____ months ago  OR  _____ years ago
What did you do? __________________________________________________________

9. Have you ever given yourself a tattoo or piercing? (You did not go to a professional, you did it yourself.)
   □ No  □ Yes
10. Have you ever thought about killing yourself?
   ☐ No  ☐ Yes

11. Have you ever made a plan to kill yourself or thought about how and when you might kill yourself?
   ☐ No  ☐ Yes

12. Have you ever tried to kill yourself?
   ☐ No  ☐ Yes  (If your answer is "No", go on to the next question.)

   If yes, how many times?  ___________ time(s).

   If yes, did you try to kill yourself WITHIN THE PAST YEAR (since OCTOBER 2000)?
   ☐ No  ☐ Yes

   Did you have to be treated by a doctor or a nurse?
   ☐ No  ☐ Yes

*IF YOU HAVE NEVER PURPOSELY HARMED OR INJURED YOURSELF IN ANY WAY, GO ON TO QUESTION 24*

13. If you have ever purposely injured, harmed, or hurt yourself, did you do this...
   ☐ Alone  ☐ With others

14. If you have purposely hurt, harmed, or injured yourself MORE THAN ONCE, how long have you been doing this?
   ☐ I have not done this more than once  ☐ 1 month  ☐ 3 months  ☐ 6 months  ☐ 1 year  ☐ longer than one year
15. Tell about a time when you did something that was harmful to yourself or hurt or injured your body on purpose. How did or do you hurt, harm, or injure yourself most often?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

16. Was there something new or stressful going on in your life at that time? (e.g. your parents were getting divorced, someone close to you died, etc.) What was happening in your life that made you want to hurt, harm, or injure yourself or what is happening now?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

17. What was YOUR reaction before, during, and after you purposely harmed, hurt, or injured yourself? How were you feeling? (e.g. Were you scared, relieved, angry? Did you feel several feelings at the same time?)

PLEASE CHECK ALL ANSWERS THAT APPLY FOR YOU (YOU CAN CHECK MORE THAN ONE).

Before I did this, I felt:

- ☐ happy ☐ scared ☐ relieved ☐ guilty ☐ lonely ☐ surprised
- ☐ angry ☐ worried ☐ frustrated ☐ desperate ☐ "zoned out" ☐ embarrassed
- ☐ disgusted ☐ excited ☐ depressed or sad ☐ ashamed
- ☐ I don't know my feelings.
- ☐ Other(s): (explain) ______________________________________________________

During the time I was doing this, I felt:

- ☐ happy ☐ scared ☐ relieved ☐ guilty ☐ lonely ☐ surprised
- ☐ angry ☐ worried ☐ frustrated ☐ desperate ☐ "zoned out" ☐ embarrassed
- ☐ disgusted ☐ excited ☐ depressed or sad ☐ ashamed
- ☐ I don't know my feelings.
- ☐ Other(s): (explain) ______________________________________________________
After I did this, I felt:

☐ happy  ☐ scared  ☐ relieved  ☐ guilty
☐ angry  ☐ worried  ☐ frustrated  ☐ desperate
☐ disgusted  ☐ excited  ☐ depressed or sad  ☐ ashamed
☐ I don't know my feelings.
☐ Other(s): (explain) ____________________________________________

18. Have you ever told anyone that you are harming, hurting, or injuring yourself on purpose?

☐ No  ☐ Yes

19. Did you ever talk to a ______________________ about purposely harming, injuring, or hurting yourself? (CHECK ALL THAT APPLY)

☐ No One  ☐ Friend  ☐ Parent/Guardian  ☐ Counsellor  ☐ Teacher  ☐ Psychologist/Psychiatrist  ☐ Relative/Family Member  ☐ Other Person

20. Has anybody in your life expressed concern that they think you may be purposely harming, hurting, or injuring yourself?

☐ No  ☐ Yes

If yes, what does this person (or these people) think you are doing that causes them to be concerned?

_________________________________________________________________________

_________________________________________________________________________

21. Have you ever received any professional help or treatment (for example, counselling, program, group therapy) for harming yourself?

☐ No  ☐ Yes -- If yes, for how long? _____ days OR _____ months OR _____ years.

22. Have you ever had to go to the hospital or to the doctor after harming, hurting, or injuring yourself?

☐ No  ☐ Yes -- if yes, how many times? ________________ times.
23. Have you ever taken any medication to help you stop harming, hurting, or injuring yourself? (e.g., antidepressants)
   □ No □ Yes

THE NEXT FEW QUESTIONS ASK YOU ABOUT YOUR FRIENDS OR OTHER TEENAGERS YOU KNOW...

24. Do you know anyone who harms, hurts, or injures himself or herself on purpose?
   □ No □ Yes  (If your answer is "No", go on to the next question.)
If you do know someone who purposely harms, hurts, or injures himself or herself, what does this person do?  (NO NAMES PLEASE)
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
Why do you think this person purposely does this?
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

25. Do you know that this person harms, hurts, or injures himself or herself because he or she told you or because you noticed something about him or her that made you think this?  PLEASE CHECK ALL THE RESPONSES BELOW THAT ARE CORRECT FOR YOU.
   □ He or she told me.
   □ I noticed something about this person that made me think this.
   □ Someone else told me.
   □ Other - PLEASE explain: ______________________________________

26. How many people do you know personally who have purposely harmed, hurt, or injured themselves?
   □ 0/None  □ 1  □ 2  □ 3  □ 4-6  □ more than 6

27. If you read over this questionnaire, but you did not respond to any or to some of the questions, please check ONE of the boxes below to indicate how you feel.
   □ I did not want to answer these personal questions.  □ I did not feel comfortable answering these questions.
Appendix F: Motivations Underlying Self-Harm Questionnaire
**IF YOU HAVE NEVER PURPOSELY HARMED, HURT, OR INJURED YOURSELF, YOU CAN SKIP THIS PAGE.*

CIRCLE "YES" in all capital letters if the statement is definitely true or always true.  
CIRCLE "Yes" in the lower case letters if the statement is sort of true or mostly true.  
CIRCLE "No" in lower case letters if the statement is not really true or usually not true.  
CIRCLE "NO" if the sentence is not at all true or never true.

*I have purposely harmed, hurt, or injured my body for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>YES</th>
<th>Yes</th>
<th>No</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I wanted to punish myself.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>2. I wanted to be noticed.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>3. I was angry at my parent(s)/guardian(s).</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>4. I was high or drunk.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>5. I didn’t know what I was doing.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>6. I felt like I was outside my body.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>7. I did not like myself.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>8. It stopped me from killing myself.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>9. It made me feel like I was in control.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>10. It stopped me from thinking bad thoughts.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>11. I felt like I needed to hurt myself.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>12. I was angry at myself.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>13. I wanted to make myself feel something.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>14. I was bored.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>15. I felt all alone.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>16. I wanted to shock people.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>17. I wanted to stop myself from feeling and be numb.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>18. I was angry at someone (friend or other).</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>19. It helped me to join a group.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>20. It helped me to release tension or stress and relax.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>21. I felt very unhappy or depressed.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>22. I wanted to know how it would feel.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>23. I wanted to get my mind off my problems.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>24. I wanted to get back at someone.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>25. I thought it would be fun.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>26. I felt like I was a failure.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>27. I wanted to feel pain.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>28. I wanted to avoid having to do something that I didn't want to do.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>29. I wanted other people to see how desperate I was.</td>
<td>YES</td>
<td>Yes</td>
<td>No</td>
<td>NO</td>
</tr>
<tr>
<td>30. Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G: Optional, Request For Help Form
*** THIS PAGE IS OPTIONAL ***
THIS MEANS THAT YOU ONLY NEED TO FILL IT OUT IF YOU WANT TO

If you are harming, hurting, or injuring yourself on purpose
**and you would like some help**, please let us know below.
If you tell us that you **would** like help and you write your name below, then we will pass
your name and request for help on to your counsellor.

**If you do not want help, then do NOT fill out this page.**

☐ I would like help and I understand that my school counsellor will contact me. (PLEASE CHECK BOX IF THIS IS TRUE).

Name: (PLEASE PRINT) ______________________________________________________________________________________
Grade: __________
Counsellor's Name: ______________________________________________________________________________________

We will rip this page off and give your counsellor your name.
After that, this page will be destroyed, but we will keep the rest of the questionnaire (without names).
Appendix H: Reynolds Adolescent Adjustment Screening Inventory (RAASI)

is available from Psychological Assessment Resources, Inc.

16204 N. Florida Avenue, Lutz, FL 33549
Appendix I: Anger Discomfort Scale (ADS)
The questions below ask you about your feelings and your thoughts about your feelings. Think carefully and then choose the answer that you think best describes you.

**INSTRUCTIONS:**

Put an ✗ or a ✓ in the circle under "YES" if the statement is definitely true or always true.
Put an ✗ or a ✓ in the circle under "yes" if the statement is sort of true or mostly true.
Put an ✗ or a ✓ in the circle under "No" if the statement is not really true or usually not true.
Put an ✗ or a ✓ in the circle under "NO" if the sentence is not at all true or never true.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>yes</th>
<th>no</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do not like it when I get angry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel guilty about being angry at other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I fear that my anger will hurt other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would prefer that people not see me when I am angry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that it is natural and healthy to feel angry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am upset or troubled by my anger.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People do not seem to like me when I am angry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I create more problems for myself when I get angry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I should not be angry as often as I am.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that it is acceptable for people to feel anger.</td>
<td>I feel comfortable with my angry feelings.</td>
<td>When I get angry, I also get nervous.</td>
<td>My anger scares me.</td>
<td>I am embarrassed when I get angry.</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>--------------------------------------</td>
<td>-------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
Appendix J: Marlowe-Crowne Social Desirability Scale, Short Form (MCSDS:SF)
Read the following statements to yourself and then decide whether each statement is either TRUE for you or FALSE for you. Circle the appropriate answer.

| 1. | I sometimes feel resentful when I don't get my way. | TRUE | FALSE |
| 2. | It is sometimes hard for me to go on with my work if I am not encouraged. | TRUE | FALSE |
| 3. | On a few occasions, I have given up doing something because I thought too little of my ability. | TRUE | FALSE |
| 4. | There have been times when I've felt like rebelling against people in authority even though I knew they were right. | TRUE | FALSE |
| 5. | No matter who I'm talking to, I am always a good listener. | TRUE | FALSE |
| 6. | There have been occasions when I took advantage of someone. | TRUE | FALSE |
| 7. | I'm always willing to admit it when I make a mistake. | TRUE | FALSE |
| 8. | I sometimes try to get even rather than forgive and forget. | TRUE | FALSE |
| 9. | I am always polite and considerate, even to people who are disagreeable. | TRUE | FALSE |
| 10. | I have never been annoyed when people expressed ideas very different from my own. | TRUE | FALSE |
| 11. | There have been times when I was quite jealous of the good fortune of others. | TRUE | FALSE |
| 12. | I am sometimes irritated by people who ask favours of me. | TRUE | FALSE |
| 13. | I have never purposely said something that hurt someone's feelings. | TRUE | FALSE |
Appendix K: Summary of 2 (Gender) x 2 (Self-Harming vs. Non-Self-Harming) ANOVA's

Analysis of Variance Results Across Psychological Adjustment Variables

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean Square</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Adjustment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>308.22</td>
<td>1</td>
<td>3.46</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>5479.92</td>
<td>1</td>
<td>61.44**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>11.034</td>
<td>1</td>
<td>.12</td>
</tr>
<tr>
<td>Error</td>
<td>(89.19)</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>Emotional Distress</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1495.36</td>
<td>1</td>
<td>15.96**</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>5326.02</td>
<td>1</td>
<td>56.84**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>50.17</td>
<td>1</td>
<td>.54</td>
</tr>
<tr>
<td>Error</td>
<td>(93.70)</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>Negative Self</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>268.98</td>
<td>1</td>
<td>3.73</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>1693.21</td>
<td>1</td>
<td>23.51**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>44.16</td>
<td>1</td>
<td>.61</td>
</tr>
<tr>
<td>Error</td>
<td>(72.04)</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>Anger Control Problems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.439</td>
<td>1</td>
<td>.006</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>1448.00</td>
<td>1</td>
<td>18.83**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>38.70</td>
<td>1</td>
<td>.50</td>
</tr>
<tr>
<td>Error</td>
<td>(76.89)</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>Antisocial Behaviour</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>141.07</td>
<td>1</td>
<td>1.07</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>4475.75</td>
<td>1</td>
<td>33.86**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>125</td>
<td>1</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>(132.17)</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>Anger Discomfort</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>48.26</td>
<td>1</td>
<td>1.12</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>447.18</td>
<td>1</td>
<td>10.35**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>1.051E-02</td>
<td>1</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>(43.20)</td>
<td>420</td>
<td></td>
</tr>
</tbody>
</table>

**p ≤ .001.
Appendix L: Summary of 2 (Gender) x 2 (Self-Harming vs. Non-Self-Harming) ANCOVA's, Controlling for Social Desirability

Analysis of Covariance Results Across Psychological Adjustment Variables

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean Square</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Desirability</td>
<td>9653.48</td>
<td>1</td>
<td>145.46**</td>
</tr>
<tr>
<td>Gender</td>
<td>249.17</td>
<td>1</td>
<td>3.79</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>4217.53</td>
<td>1</td>
<td>63.55**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>36.00</td>
<td>1</td>
<td>.54</td>
</tr>
<tr>
<td>Error</td>
<td>(66.36)</td>
<td>419</td>
<td></td>
</tr>
<tr>
<td>Emotional Distress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Desirability</td>
<td>5323.34</td>
<td>1</td>
<td>65.54**</td>
</tr>
<tr>
<td>Gender</td>
<td>1395.07</td>
<td>1</td>
<td>17.18**</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>4377.38</td>
<td>1</td>
<td>53.89**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>82.27</td>
<td>1</td>
<td>1.01</td>
</tr>
<tr>
<td>Error</td>
<td>(81.22)</td>
<td>419</td>
<td></td>
</tr>
<tr>
<td>Negative Self</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Desirability</td>
<td>3661.63</td>
<td>1</td>
<td>57.69**</td>
</tr>
<tr>
<td>Gender</td>
<td>234.37</td>
<td>1</td>
<td>3.69</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>1265.36</td>
<td>1</td>
<td>19.94**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>24.93</td>
<td>1</td>
<td>.39</td>
</tr>
<tr>
<td>Error</td>
<td>(63.47)</td>
<td>419</td>
<td></td>
</tr>
<tr>
<td>Anger Control Problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Desirability</td>
<td>6472.44</td>
<td>1</td>
<td>105.04**</td>
</tr>
<tr>
<td>Gender</td>
<td>.62</td>
<td>1</td>
<td>.01</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>942.79</td>
<td>1</td>
<td>15.43**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>70.77</td>
<td>1</td>
<td>1.15</td>
</tr>
<tr>
<td>Error</td>
<td>(61.62)</td>
<td>419</td>
<td></td>
</tr>
<tr>
<td>Antisocial Behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Desirability</td>
<td>8168.23</td>
<td>1</td>
<td>72.29**</td>
</tr>
<tr>
<td>Gender</td>
<td>182.29</td>
<td>1</td>
<td>1.61</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>3428.09</td>
<td>1</td>
<td>30.34**</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>4.46</td>
<td>1</td>
<td>.04</td>
</tr>
<tr>
<td>Error</td>
<td>(112.99)</td>
<td>419</td>
<td></td>
</tr>
</tbody>
</table>

Table continued...
<table>
<thead>
<tr>
<th>Source</th>
<th>Mean Square</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger Discomfort (ADS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Desirability</td>
<td>894.76</td>
<td>1</td>
<td>21.73**</td>
</tr>
<tr>
<td>Gender</td>
<td>41.06</td>
<td>1</td>
<td>1.00</td>
</tr>
<tr>
<td>Self-Harm</td>
<td>338.07</td>
<td>1</td>
<td>8.21*</td>
</tr>
<tr>
<td>Gender x Self-Harm</td>
<td>.51</td>
<td>1</td>
<td>.01</td>
</tr>
<tr>
<td>Error</td>
<td>(41.17)</td>
<td>419</td>
<td></td>
</tr>
</tbody>
</table>

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