The Role of Stress in the Relationship Between Childhood Sexual Abuse and Psychological Symptomatology in University Women

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## ABSTRACT

This study of 440 university women examined the influence of a history of childhood sexual abuse (CSA) and of recent stress measured by the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) and the Life Experiences Survey (Sarason, Johnson, and Siegel, 1978) on psychological symptoms (measured by the Trauma Symptoms Inventory; Briere, 1995). Results indicated that perceived stress (PSS) accounted for the most variance in psychological symptomatology, and that stress was a more potent predictor of symptoms than was childhood sexual abuse. Although women with a history of CSA, in general, did not report greater stress than other women, those who reported long-term sexual abuse experiences (a duration of 6 years or greater) did report experiencing more stress than women with short-term abuse experiences. Results of this study are discussed in relation to theories of stress. Implications for research and treatment of survivors of childhood sexual abuse are also discussed.

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## Introduction

The study of the effects of stress upon psychological health have proven to be a contentious area of research, with even the very definition of stress differing on the basis of academic field (e.g., science, medicine, and psychology) and theoretical perspective. In the field of psychology, stress can be generally defined as an individual's emotional and cognitive reaction to a stressor (Aldwin, 1994). The stressor can, in turn, be defined as an event, condition, or situation which taxes the individual's ability to cope with its inherent demands, and therefore produces stress (Cohen, Kessler, & Gordon, 1995).

Early research on stress (for example, Holmes & Rahe, 1967) emphasized the importance of environmental stressors upon psychological and physical health. Environmental stressors were characterized as life events, which were objectively rated according to the amount of change demanded by the stressor. Based on Holmes and Rahe's theory, stress has been measured by the number and severity of life events experienced by the individual. It was believed that an accumulation of major life events produced distress because it taxed the individual's ability to cope with the changes required of him or her: as the number of life events increased, the individual's ability to cope with change diminished.

There are two main issues which have emanated from the Holmes and Rahe (1967) conceptualization of stress: the notion that stressors are conceptualized as major life events, and that adaptation to change is responsible for the stress response. Since this founding research, researchers have identified several specific characteristics of major life events which appear to be responsible for the relation of these events to

psychological symptoms. In particular, properties such as the undesirability, degree of threat, amount of control and predictability, and the severity of the event(s) are important stressor conditions which determine the individual's psychological response to particular events (Dohrenwend & Dohrenwend, 1978; Lazarus & Folkman, 1984a; Thoits, 1983).

Although traumatic life events are characteristically threatening, undesirable, uncontrollable, and have been correlated with psychological distress, they have been largely omitted from general life event studies. Instead, most of the life event measures represent normative life events such as marriage, retirement, and the birth of a child. While life event researchers may argue that they are studying normative life events, rather than infrequent or unusual ones, the likelihood of experiencing trauma in one's lifetime appears to be quite high. For example, a study of the frequency of traumatic events revealed that 69% of 1,000 adults had experienced at least one of ten traumatic events (robbery, physical assault, sexual assault, tragic death, motor vehicle crash, combat, fire, Hurricane Hugo, or another disaster or hazard) in their lifetime (Norris, 1992). The prevalence rate for childhood sexual abuse of women alone ranges from 20-30% (Briere, 1992a) and has been found to be as high as 45% of women, depending on the definition of abuse used (Peters, 1988). It appears that the general life event research excludes traumatic events, despite the fact that the most important characteristics of stressors are relevant to trauma and that traumatic events are also experienced by a great number of people.

Among other advancements, researchers who have included a variety of stressors in their investigations have provided invaluable information about the nature of stress.

For example, one study which examined the contribution of chronic "stressors", such as marital and social status, to stress and distress, found that the individual's role(s) (e.g., employee, mother) determined the particular kind of stress the individual was likely to report, as well as the presence of anxiety and depression (Thoits, 1987). Other studies have suggested that recent stressors or hassles act as mediators of the effects of major life events on psychological symptomology (Kanner et al., 1981; Wagner et al., 1988). These studies have promoted a greater understanding of the complex relationship between the individual's experience and consequential psychological distress. This line of research has also furthered the notion that stress is not necessarily the isolated and sole response to major life events. Indeed, these findings have broadened our conceptualization of stress to a point where stressful events may be viewed as part of a continuum of stressors which vary on dimensions such as the severity and duration of the stressor (Aldwin, 1994). The recognition that stressors vary in degree and kind has also furthered the idea that stressors may be interrelated; for example, some researchers contend that major life events lead to daily hassles, which in turn lead to psychological symptoms (Kanner et al., 1981; Monroe, 1983; Wagner et al., 1988). While major life events and daily hassles have primarily been the source of these kinds of investigations, researchers have also proposed that "...we should build bridges, not distinctions or barriers, between the domain of traumatic stress and other stress investigations, such as those which have dealt with chronic stressors (e.g., economic strains), with specific experiences (e.g., retirement, bereavement), and with derived indicators of exposure such as summated stressful life events scores" (Kasl,1990, p. 1655).

A continuation of this research could examine the effect of traumatic experiences upon stress and psychological symptoms across the lifespan. Because traumatic events are not currently measured in life event research, distress can not be attributed only to the normative life events that are represented in these measures. It may be that an unmeasured variable, such as past trauma, influences the development of both stress and psychological distress. As Baum, O'Keefe, and Davidson (1990) assert, traumatic events may create either a long-term demand upon an individual, or a long-term stress response, which outlasts the immediate effects of the stressor. This may partially explain findings that women who were sexually abused as children experience significant psychological difficulty as adults (Andrews, Valentine, & Valentine, 1995; Braver, Bumberry, Green, & Rawson, 1992; Briere & Runtz, 1993; Green, 1993; Pribor, Yutzy, Dean, & Wetzel, 1993).

Studying the relationship between early trauma and subsequent stressors, as they contribute to psychological distress, would also address the manner in which different stressors contribute to psychological distress. As previously mentioned, early life event research (Holmes & Rahe, 1967) postulated that the effects of stressful events are cumulative. Some researchers maintain that life events and recent stressors have an additive effect upon psychological symptomology (Rowlison & Felner, 1988; Williams, Zyzanski, & Wright, 1992). However, other theorists have suggested that recent stressors are most potent in predicting distress (Chamberlain & Zika, 1990; Kanner et al., 1981; Monroe, 1983), that recent stressors or hassles mediate the effect of life events on subsequent distress (Wagner et al., 1988), that previous experience with major life events

decreases the impact of stressful daily events (Caspi, Bolger, & Eckenrode, 1987), and that a number of personal characteristics predispose an individual to experiencing stress or to be more sensitive to the effects of stress (Aldwin, 1994).

This last theory represents what is generally referred to as the *vulnerability theory* of stress, where vulnerability is defined as "an individual's predisposition to either a particular disorder or a general susceptibility to stress" (Compas & Phares, 1991, p.111). A number of vulnerability factors have been proposed to contribute to the effects of stress and distress, and include: personal or social characteristics, biological or hereditary predisposition, as well as the individual's personal history and exposure to traumatic events (Aldwin, 1994).

The *vulnerability theory* of stress could bridge the gap between the current research on trauma and other stressors. It has already been demonstrated that early trauma, such as childhood sexual abuse, has long-term psychological consequences for women (Bolen, 1993; Briere & Runtz, 1993; Green, 1993). In addition, stress (defined to include various stressors) has demonstrated a consistent relationship to psychological symptoms (Birmaher et al., 1994; Flannery, 1986; Frank, Anderson, Reynolds, Ritenour, & Kupfer, 1994; Nezu 1986; Vinokur & Selzer, 1975; Walker & Greene, 1991). Although childhood sexual abuse is viewed as a major stressor (Wyatt & Newcomb, 1990), these experiences are rarely included in investigations of stress (Hammen, Marks, Mayol, & deMayo, 1985; Kanner, et al., 1981; Wright, 1984). The *vulnerability theory* of stress provides an arena in which the contributions of trauma (in particular, childhood sexual abuse) and recent stress can be examined. Key questions remain: How does an

early experience of trauma affect the individual's later experience of stress in adulthood? How do these variables, together, account for reports of psychological distress among women sexually abused as children?

On the basis of other stress research and vulnerability factors, I postulate that earlier trauma (i.e., childhood sexual abuse) might, in fact, serve as a vulnerability factor for experiencing stress in adulthood. More specifically, women who have experienced trauma early in life may be more sensitive or reactive to stressful events, with the effects of this stress contributing to psychological symptoms experienced in adulthood. This study endeavored to explain the manner in which life stress (both early trauma and recent stress) is related to current psychological distress in university women. The conceptualization of early trauma as instrumental in the development of stress and distress allows the examination of the interrelatedness of stressors. This conceptualization may also provide a greater understanding of the development of psychological symptoms over time. Finally, it was hoped that this study would demonstrate the utility of examining the effects of recent stress in women who were sexually abused as children.

# Literature Review

## Psychological Stress

### The Psychological Impact of Stressful Life Events

While there are many different conceptualizations of stress, the overall effects of stress have been well validated. Stressful life events have been linked to depression, anxiety, and other general symptoms of psychological distress (Birmaher et al., 1994; Flannery, 1986; Frank et al., 1994; Nezu, 1986; Vinokur & Selzer, 1975; Walker & Greene, 1991). The onset of some psychiatric disorders (e.g., schizophrenia and depression) has also been associated with prior major life events (Barrett, 1979; Birley & Brown, 1970; Brown & Birley, 1968; Brown & Harris, 1978; Frank et al., 1994; Harder, Strauss, & Kokes, 1980; Paykel, 1974). The fact that preceding stress is related to psychological symptoms provides support for the notion that stress may affect the development of symptoms, either directly or as a trigger for symptoms among those biologically disposed to psychiatric illness.

Even though much of the research on the consequences of stressful life events has been criticized for being retrospective in nature, prospective studies also support the idea that stress influences the development of psychological symptomology (Andrews, 1981; Byrne, 1989). Moreover, some research demonstrates that the relationship between life events and psychological symptoms remains, even when the effects of prior psychiatric history have been statistically controlled (Monroe, 1983; Nezu, 1986; Wagner, Compas, & Howell, 1986).

Theories Regarding the Impact of Stressful Life Events

The undesirability of a particular life event has shown to be the most salient of characteristics in the life event research, refuting the idea that positive and negative events invoke similar responses by the individual. One of the earliest studies examining desirability of the stressor, a large community study by Myers, Lindenthal, and Pepper (1971), found that not only did the association between life events and psychiatric impairment increase as the number of reported life events increased, but that the number of *undesirable* life events had the strongest relationship to mental health impairment.

While the conclusions by Myers et al. (1971) are limited, due to the weak statistical evidence (conclusions were drawn by comparing group percentages), additional studies have supported the idea that the undesirability of life events is a critical factor in the development of psychopathology. In a more statistically sophisticated study, Vinokur and Selzer (1975) found that an accumulation of life events, particularly undesirable ones, correlated with anxiety, tension and distress, aggression, paranoia, depression, and alcohol use. Mueller, Edwards, and Yarvis (1977) found a relationship between undesirable events and psychological symptoms, even when events which were highly correlated with the dependent variable were removed from their measure of life events. Also, when life events were defined as undesirable by the subject (rather than by the researcher), these events were found to be more highly correlated with psychological symptoms than either desirable events (as rated by the researcher) or desirable and undesirable events combined (Mueller et al., 1977).

Statistical support for the importance of the undesirability of specific life events is

apparent in several observations made by Mueller et al. (1977): when undesirable events are partialled out of the analysis of life events, the correlations between events and symptoms are greatly reduced; but when desirable events are statistically controlled, the correlation between undesirable events and psychological symptoms increases. The authors of this study concluded that "the relationship between life events and psychological status is almost totally dependent on undesirable events" (Mueller et al., 1977, p. 313).

In an extensive comparison of life-event weighting schemes, Ross and Mirowsky (1979) determined that the best life event predictor of psychological symptomology was the sum of undesirable life events. Consistent with findings of Mueller et al. (1977), "multivariate regression shows that when undesirability is controlled, the effects of desirable and ambiguous events, change, and number of events disappear" (Ross & Mirowsky, 1979, p. 166). A perusal of the recent literature on stress and psychopathology reveals that, contrary to Homes and Rahe's (1967) original assumption, it is not merely a sum of all major life events which precipitates psychological distress, but rather specific characteristics of those events.

Another key characteristic of life events is the controllability of the stressor. Theoretically, control over the stressful event is believed to play an integral role in the development of learned helplessness, particularly when that event is also an undesirable one (Thoits, 1983). Several studies have determined that uncontrollable events are more likely to be associated with psychological distress than are controllable events (Grant, Sweetwood, Gerst, & Yager, 1981; McFarlane, Norman, Streiner, Roy, & Scott, 1980;

Paykel, 1974). Research which has questioned these conclusions (e.g., B.P. Dohrenwend, 1974; Fontana et al., 1972; Myers et al., 1972) has led some researchers to claim that the uncontrollability factor of events may only be predictive of depressive symptoms and disorders (see Thoits, 1983).

The Role of Appraisal in Stress

Research supporting the theory that self-rated desirability (or impact) of major life events is more important than the occurrence of the events themselves has provided the basis for reasoning that personal appraisals of stress are important determinants of psychological symptoms (Pbert, Doefler, & DeCosimo, 1992). It is now also recognized that the stress response involves an interaction between the environment and the individual (Aldwin, 1994), with appraisal acting as a key element between the two (Singer & Davidson, 1991). As Roskies (1984) notes, "Stress is the result of a judgment that a disturbance has occurred in the person-environment relationship: the individual perceives challenge/threat/harm, judges that his or her resources may not be sufficient to manage the disruption, and considers the outcome important to his or her well-being" (p. 418). This transactional model of stress proposes that stress occurs when an individual perceives that the demands of a stressor exceed his or her resources (Lazarus & Folkman, 1984). Some theorists now believe that the appraisal of events as threatening or challenging (i.e., "stressful") is a critical factor in the relationship between stressor and stress response (Pbert et al., 1992). Perceived stress, which has become synonymous with appraisal of stress, takes into account the individual's consideration of the objective stressor as well as the individual's resources and coping ability (Cohen et al., 1983).

## Childhood Sexual Abuse

### The Psychological Impact of Childhood Sexual Abuse

The long-term psychological sequelae of childhood sexual abuse have been well documented in the literature. Child sexual abuse (CSA) is related to a variety of psychological symptoms in women in community samples (Andrews, Valentine, & Valentine, 1995; Greenwald, Leitenberg, Cado, & Tarran, 1990; Moeller, Bachmann, & Moeller, 1993; Stein, Golding, Siegel, Burnam, & Sorenson, 1988), university samples (Briere & Runtz, 1988; Briere & Runtz, 1990; Everill & Waller, 1995), and in clinical populations (Briere & Runtz, 1986; Braver, Bumberry, Green, & Rawson, 1992; Chu & Dill, 1990; Pribor, Yutzy, Dean, & Wetzel, 1993). Several extensive reviews of the child sexual abuse literature have reported that women who have been sexually abused as children have higher rates of anxiety disorders, major depression, multiple personality disorder, sexual dysfunction, eating disorders, substance abuse, borderline and histrionic personality disorders, and suicidal behavior (Bolen, 1993; Briere & Runtz, 1993; Green, 1993), when compared to women who did experience childhood sexual abuse.

Presently, many of the symptoms experienced by women with a history of childhood sexual abuse are explained by the clinical formulation of post-traumatic stress disorder (PTSD; Finkelhor, 1988). As a result, many of the long-term effects of childhood sexual abuse have been explained in terms of chronic or delayed post-traumatic stress disorder. In this model, childhood sexual abuse is conceptualized in the same manner as other traumatic events which typically result in the avoidant and intrusive symptoms that characterize PTSD. This theory may be inadequate in explaining

all of the symptoms which victims experience because the range of symptoms and conditions experienced by these women exceeds those of PTSD alone. For example, while some women with a history of CSA may indeed experience avoidant and intrusive symptoms typical of PTSD, the PTSD formulation does not fully explain why anxiety, depression, dissociation, sexual problems, eating disorders, substance abuse, and personality disorders have also been observed in these women.

The Traumagenic Dynamics Model (Finkelhor, 1988) declares that there are unique trauma dynamics which influence the long-term psychological symptoms observed in victims of child sexual abuse. The impact of child sexual abuse is said to exert its effects in four key areas: traumatic sexualization, betrayal, stigmatization, and powerlessness.

The Traumagenic Dynamics Model (Finkelhor, 1988) has an advantage over the general PTSD model, because it accounts for a wide variety of symptoms and considers the individual's development, long-term response, and adaptation to the sexual abuse. For example, experiencing sexual abuse as a child may lead to 'traumatic sexualization' where the child develops beliefs, fears, or behaviours related to sexuality in response to the trauma. This theory also considers that childhood sexual abuse occurs at a developmentally sensitive time and may also affect the child's normal development. This is reflected, for example, in findings that childhood sexual abuse does affect one's developing sexuality and is observed in "...precocious sexual play, knowledge of sexual matters inappropriate to age and developmental level, confusion over and concerns about sexuality and sexual orientation, and overt sexual acting out" among children and

adolescents (Tharinger, 1990, p. 334) and dysfunctional sexual behaviour among adults (Briere & Smiljanich, 1994). Another sexual abuse dynamic, powerlessness, may be related to reports of depression in adulthood (Elliott & Briere, 1992; Jehu, 1989; Peters, 1988), as sexually abused children learn that they are unable to protect themselves from their abuse, and consequently develop a low sense of self-efficacy (Finkelhor, 1988). It may be that the effects of learning which are associated with the abuse experience generalize to other situations in adulthood, leaving individuals believing that they are unable to protect themselves, or effect change in their adult lives. This enduring effect might in turn make abused individuals more vulnerable to revictimization (Fromuth, 1986; Runtz, 1987; Russell, 1986); it might also make these women more vulnerable to developing depression and other symptoms in response to normally stressful situations.

Finkelhor's traumagenic themes are of great use in understanding the full impact of the abuse experience, as well as for understanding the variability of women's responses to the abuse. However, possible mechanisms or triggers for developing symptomology have rarely been explored. For example, researchers in the sexual abuse field have neglected to consider the impact of more recent stress upon individuals who report distress, even though stressful events have been shown to trigger the onset of various psychological disorders (Frank et al., 1994; Harder, Strauss, & Kokes, 1980).

Several theories have been proposed to account for the long term effects of child sexual abuse. Some theories have been consistent with other trauma or stress research, and have proposed that social support, coping ability, cognitive distortions, or appraisals of self-blame affect reports of psychological symptoms among adults sexually abused as

children (Briere, 1992a; Gold, 1986; Leitenberg, Greenwald, & Cado, 1992; Testa, Miller, Downs, & Panek, 1992; Wyatt & Newcomb, 1990). While these theories are reasonable and do account for some of the variance in psychological symptomology, there may be other mechanisms which may also be responsible for symptoms among these women.

Given the relationship between stress and psychological symptoms, it is surprising that few researchers have included stress in investigations of the effects of CSA, even as a potential covariate in their studies. There are also theoretical reasons for including stress in studies of the long-term effects of childhood sexual abuse. The occurrence of stressful life events may help us to understand how the earlier trauma of CSA affects the development of psychological symptoms in adulthood. Previous research indicates that stressful events make individuals more susceptible to developing psychopathology and psychological distress. It is possible that stress experienced in adulthood contributes to the reports of psychological symptoms made by women sexually abused in childhood. Moreover, it may be possible that the experience of childhood sexual abuse also predisposes individuals to experience or report more stress in adulthood.

## Childhood Sexual Abuse and Stress

### The Applicability of a Life Event Conceptualization to Childhood Sexual Abuse

While the experience of childhood sexual abuse shares many important attributes with other major stressful life events (such as undesirability and uncontrollability), it has been excluded from life event measures. The general stress literature may possibly have

excluded traumatic events from their studies because these events were already being represented by a body of trauma literature which focused primarily upon PTSD symptomatology.

Research has identified high risk rates for PTSD among individuals who have recently experienced a traumatic event, depending on the characteristics of that event (Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989; Kilpatrick et al., 1989; Resnick, Kilpatick, & Lipovsky, 1991). In addition, a diagnosis of PTSD according to the DSM III-R criteria, required that "the person has experienced an event that is outside the range of usual human experience and that would be markedly distressing to almost anyone, e.g., serious threat to one's life or physical integrity..." (American Psychiatric Association, 1987, p. 250). In contrast, a diagnosis of PTSD using the DSM IV criteria is not defined solely by the occurrence of an event, but also requires that the person's response included "intense fear, helplessness, or horror " (American Psychiatric Association, 1994, p.428). While the DSM IV (American Psychiatric Association, 1994) no longer includes the occurrence of an event outside the range of human experience for diagnosis of PTSD, the DSM II-R formulation has heavily influenced research on traumatic events, with an assumption that PTSD is the primary outcome for individuals experiencing a traumatic event. However widespread the application of the PTSD model in past research, this model for explaining the effects of childhood sexual abuse has been criticized for its limited applicability to a wide range of symptoms among this group (Finkelhor, 1988).

Another reason which may help to explain the exclusion of traumatic events in this area of research is the time frame typically used in life event measures. Many life

event measures limit and standardize the time period for individual's consideration of life events, with the most frequently time span being the past year. Thus, while an individual may have experienced a highly salient and important event a year or more prior to measurement, this event would not be included in a measure of major life events because of the measure's limitations. This measurement system excludes traumatic childhood events which could have long-lasting effects. Life-time traumatic events, such as childhood sexual abuse, are excluded from life event measures, although much may be gained by examining their influence upon psychopathology.

Theoretical developments in stress research have begun to challenge the kinds of events which should be included in measurements of stress. While the early research on major life events emphasized a cumulative impact upon psychopathology (Hough, Fairbank, & Garcia, 1976), several other ideas have been offered to explain the relation of stressful events to psychological symptoms. It is now understood that there are a variety of stressors which affect psychological health. For example, researchers have advanced the idea that minor, as opposed to major, life events typify stress and contribute to psychological distress. These minor life events are often called recent life events, daily life events, or "hassles". Hassles are defined as "undesirable minor events" (Monroe, 1983) that are "irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment" (Kanner et al., 1981, p. 3) and include "events" such as traffic congestion, having to wait, and concern about news events (Dohrenwend & Shrout, 1985).

A broadened conceptualization of stress, largely due to the research on hassles,

has brought new theories of stress into the forefront of this research. The examination of the mutual contributions of hassles and life events to psychological symptoms has provided more support for the vulnerability theory of stress. For example, one researcher postulates that problems, or hassles, are related to an individual's prior experience with negative life events, largely because of the shared variance between life events and recent stress (Nezu, 1986). As a result of their empirical findings, researchers have suggested that hassles might result from ongoing chronic stress (Rowlison & Felner, 1988) or previous life events (Nezu, 1986). Many other authors have suggested that major life events influence the development of recent stressors or hassles, but simply have not empirically tested this supposition (Lazarus & Folkman, 1984b; Rowlison & Felner, 1988). A parallel can be drawn between the research on the inter-relatedness of stressors such as chronic stress, events, hassles, and the possible effects of experiencing an early trauma such as child sexual abuse. Trauma, as the earlier stressor, may also influence the development of subsequent stress. In fact, trauma (as opposed to other stressors) may be even more salient in the development of subsequent stress, because of its severity. In a review article, Lazarus and Folkman (1984b) "...suggest that the occurrence of a major, pervasive, and intrusive stress experience might increase the capacity of other stressful experiences to generate distress" (p. 112). Childhood sexual abuse may contribute to distress in the same manner.

Childhood sexual abuse certainly can be described as a "serious" (traumatic) event, in terms of the possible severity, pervasiveness, intrusiveness, and threat involved in this experience. This fact is illustrated by observations that psychological symptoms

are most strongly related to incidents of sexual abuse which are judged to be severe, frequent, of greater duration, where there is use of force, a known perpetrator and when the child experiences a lack of maternal support in response to disclosure of abuse (Elliott & Briere, 1992; Fromuth, 1986; Kendall-Tackett, Williams, & Finkelhor, 1993). Sexual abuse in childhood is sometimes a singular event, but often consists of multiple incidents of abuse (Kendall-Tackett & Simon, 1988; Peters, 1988). In addition to the physical, emotional, and familial consequences of childhood sexual abuse, the abuse can lead to other stressful events such as legal proceedings or changes in the family structure (Burgess, Hartman, Kelley, Grant, & Gray, 1990; Runyan, Hunter, Everson, Whitcomb, & De Vos, 1994; Spaccarelli, 1994). Because additional stressors emanate from an incident of abuse, sexual abuse can also be conceptualized as a form of chronic stress or chronic trauma (Spaccarelli, 1994). Chronic stress may be particularly salient for cases of intrafamilial abuse, where disclosure of abuse can set off a number of family related stressors (Esparza, 1993). The experience of incest also appears to render the individual more vulnerable to psychological symptoms (Briere & Runtz, 1988; Peters, 1988; Wind & Silvern, 1994), perhaps in part because of the victim is dependent on the perpetrator (Finkelhor & Dziuba-Leatherman, 1994).

The theory that early life events influence the development of later stress and psychopathology is consistent with a lifespan perspective of stress. Stressful events do not exert their effects on psychological functioning in isolated periods of time. Certain events, such as childhood sexual abuse, may have consequences which outlast the duration of the stressor, especially when it has far reaching developmental consequences,

or interrupts normal developmental processes (such as attachment or sexual development) (Finkelhor, 1995; Tharinger, 1990).

With the case of childhood sexual abuse, as in the general stress literature, it is possible that the effects of certain events may either accumulate over time, or even influence the development of other stressors. Researchers have likewise asserted that certain stressful events create consequential stressors (Rutter & Sandberg, 1992; Spaccarelli, 1994). For example, becoming divorced may also affect a change in economic status and visitation with children which may be an additional source of stress for the individual. Other researchers propose that the individual's efficacy in coping with earlier stressors influence his or her subsequent appraisals of stress. Regarding childhood sexual abuse, Spaccarelli (1994) asserts "In short, child victims' cognitive appraisals and coping responses may unintentionally contribute to a vicious circle in which stressful events lead to problematic responses and those responses lead to more stress and, ultimately, serious psychopathology" (p. 344).

Another explanation for the central idea that earlier events affect the development or appraisal of later stress, is that individuals experiencing life events may develop certain styles of adaptation based on experience with early stressors. The *inoculation hypothesis* proposes that prior experience with stressful events may enable the individual to respond more effectively to recent stressors by immunizing the individual against the impact of the later stressors (Anthony, 1981). However, the effects of an event may depend upon the severity and chronicity of the stressor (Ruch, Chandler, & Harter, 1980). Some events, such as severe trauma, may make an individual even more susceptible to

later stress and psychological distress.

This more complex explanation of stress has an advantage over other theories of life events because it attempts to explain not only how stressful life events are related, but how they influence the very development of psychopathology. "That is, not only do we have to ask whether the processes involved in 'stress and coping' differ according to the child's stage of development, but more particularly we need to determine whether adverse experiences or happenings in early life alter the course of subsequent development or influence the ways in which an individual responds to much later stress-events" (Rutter, 1981, p. 324).

Early Life Events and the Vulnerability Model of Stress

Research on childhood trauma, such as the loss of a parent, the mental illness of a parent, parental separation or divorce, and natural disasters, indicate that early trauma interacts with life events in later life. This research has determined that it is the interaction between early trauma and recent stress that increases the individual's likelihood of experiencing psychological symptoms in adulthood (Gottschalk, 1983; Landerman, George, & Blazer, 1991; McFarlane, 1987; Rutter, 1981). Theoretically, the early traumatic event is said to be a *'vulnerability factor'* (Rutter, 1981), because it increases the effect of the later stressor which predisposes the individual to psychological distress. Consistent with this theory is the idea that individuals who have been exposed to trauma in the past deplete the ego strength which would ordinarily allow them to deal effectively with current stressors (Kessler & McLeod, 1984). The interaction of trauma and recent stress may provide the crucial link to psychological distress; suggesting that

stress is a moderator of the relationship between early trauma and psychological symptomology.

As a result of their study of 3,801 adults in the community, Landerman and colleagues (1991) determined that some early experiences increased vulnerability to experiencing later stressful life events, as well as increasing psychological distress. For example, parental mental illness increased the likelihood that stressful life events in adulthood would result in depression. This study also found that parental separation or divorce increased the likelihood that stressful life events resulted in problems with alcohol and psychological symptoms in adulthood. Similarly, Brown and Harris (1978) found that the loss of one's mother before age 11, increased the likelihood that stress would provoke depression in adult women.

Vinokur, Caplan, and Williams (1987) designed a longitudinal study to examine the effects of previous stressors upon recent stress and psychological symptoms among male war veterans. These veterans had either been in combat during the Vietnam war, or had been on active duty, 7 to 18 years prior to their initial interview for the study (which was conducted in 1982). These authors found that retrospective reports of early childhood stressors (i.e., low parental supportiveness, a variety of parental problems, and behavioural problems in childhood or adolescence) were consistently associated with poor mental health, 1 month, 4 months, and 12 months after the initial interview. Moreover, this relationship was significant at each time interval, whereas previous combat veteran status was not. In addition, the correlations between life events and poor mental health were strongest for men who were recently unemployed. This longitudinal

research indicates that both early and recent stressors are important in the development of psychological symptoms, with early events predisposing an individual to experience later stress.

A study of women who had been raped determined that the individual's experience with prior life changes was significantly related to the individual's current behavioral, emotional, and cognitive responses to the rape (Ruch, Chandler, & Harter, 1980). This study demonstrates the proposition that prior stressors may influence an individual's response to subsequent trauma. Ruch et al., (1980) found that the women who had major life changes prior to being raped were the most traumatized, women with no major changes were the second most traumatized, and women who had minor changes were the least traumatized. Unlike the other studies which proposed and found a linear relationship, this study revealed a curvilinear relationship between the level of stress impact and psychological distress. This study is of particular interest because it provides evidence for both inoculation and vulnerability effects for earlier stressors. Specifically, Ruch et al. (1980) found that experiencing minor stressors provided an inoculation effect when the individual was faced with subsequent trauma; yet, experiencing major stressors rendered individuals more vulnerable to the effects of the traumatic event. It appears that severity of the previous event(s) is a critical factor determining the individuals response to subsequent stressors. These studies reinforce the idea that childhood, and other previous events, may increase a person's vulnerability to later stressful life events and, consequently, to psychological distress. This idea is consistent with the *vulnerability model* of stress, which suggests that individuals who have been exposed to traumatic

events in the past are more vulnerable to recent stressors (Vinokur et al., 1987).

Research on Childhood Sexual Abuse and Stress

Very few studies have examined the effects of recent stress on psychological distress in women sexually abused as children. One study of runaway youth determined that teens who were sexually or physically abused were more likely to experience significantly higher numbers of negative life events both in their total lifetimes and in the past year (Stiffman, 1989). Moreover, abused youth were more likely to experience events deemed out of their control, such as the death of a friend, having a sick parent, or moving to a new school. The authors of this study also found that life events significantly predicted behaviour problems on the Achenbach Child Behavior Checklist. This study is particularly important because one of the most common criticisms of life event research is that certain events may result from the individual's own behaviour. Stiffman's study indicated that abused youth were more likely to experience a greater number of negative life events, which contributed to psychological symptoms, even though these events were beyond their control.

Kinzl and Biebl (1992) inquired about recent life events among a clinical sample of women who had experienced incest. These authors found that recent relationship-related events appeared to have triggered the onset of a variety of psychological disorders. The authors postulate that "...specific deficits in ego development and to specific sequelae of object relationships" (Kinzl & Biebl, 1992, p. 568) predispose the individual to become psychologically distressed when faced with a significant change in a relationship. This study supports the idea that early abuse may

affect stressors which develop in key areas (such as relationships) in adulthood. Although Kinzl and Biebl considered the importance of stressful life events in the process of developing psychological symptoms, conclusions based on this study are tenuous, as there was no control group in their study.

Another recent study (Wind & Silvern, 1994) examined the effects of sexual and physical childhood abuse upon "adult negative experiences" and psychological symptoms in adulthood. These authors hypothesized that parenting and family stress mediated the long-term effects of childhood abuse; however, the mediating hypothesis was not supported. Originally, it looked as though parenting did in fact mediate the effects of abuse on symptoms, but when the effects of abuse were statistically controlled, the effects for parenting were no longer significant. Abuse also predicted "adult negative experiences", even after the effects of parenting were statistically controlled. This study is an important addition to research on stress and childhood sexual abuse because it refutes the idea that parenting and family stress alone may be responsible for the long-term psychological effects of abuse. This study also supports the notion that sexual abuse in childhood may be related to later stressors, in adulthood. It has also been suggested that family related variables (such as family conflict or pathology) contribute to psychological functioning of abused individuals, and has proved to be an important variable in the relationship between abuse history and psychological functioning (Nash, Hulsey, Sexton, Harralson, & Lambert, 1993). An additional consideration lies in the fact that the Wind & Silvern study (1994) has several weaknesses. First, the measure used to assess stress in adulthood consisted of only eight different "negative and

victimizing" events, such as burglaries, accidental injuries, force used in an adult relationship, and unwanted sexual contact after the age of 18 (p. 444). Even though this measure does include sexual abuse in adulthood, the authors merely summed the total of events as the score for this measure. In addition, this study did not examine the contribution of specific "adult negative experiences", or even the total score on the measure, to psychological symptoms in adulthood.

It appears that researchers of childhood sexual abuse have begun to develop an interest in the contribution of life stress to symptomology. However, there are few studies which have examined stress as a contributor to symptomology among women abused as children. This research project attempts to combine both the childhood sexual abuse and the stress research in an attempt to explain the manner in which childhood sexual abuse contributes to both stress and psychological distress in adulthood.

Based on the findings and theory of previous research, I propose that women with a history of childhood sexual abuse will report experiencing more psychological symptoms than their peers. Previous research on the relationship between psychological stress and psychological symptoms also leads me to propose that women who report experiencing recent stress will report experiencing more psychological symptoms than their peers. Lastly the vulnerability theory of stress will be tested in this thesis, with the expectation that childhood sexual abuse will be related to reports of recent stress, contributing to psychological symptoms in an interactive manner. Such a relationship would demonstrate that childhood sexual abuse serves as a vulnerability factor for both psychological stress and psychological symptoms in young women.

## Hypotheses

1. Women with a history of early trauma (i.e., childhood sexual abuse) will report experiencing greater psychological symptoms than women without a history of childhood sexual abuse, with stronger effects for those who experienced intrafamilial abuse.

2. Women with higher reported levels stress will report experiencing more psychological symptoms than women with lower levels of stress.

3. Women with a history of childhood sexual abuse will report experiencing more stress than women who do not have a history of childhood sexual abuse, with a stronger effect for women who experienced intrafamilial abuse.

4. The interaction between a history of child sexual abuse and recent stress will significantly predict the occurrence of psychological symptoms among women. Additionally, it is hypothesized that the interaction of these two stressors will best predict psychological symptoms reported by participants, and that the interaction of abuse history and recent stress will be stronger for women who experienced intrafamilial abuse.

# Method

## Participants

Participants in this study consisted of 440 women attending the University of Victoria, between January 1995 and January 1996. The majority of students (96.5%) were obtained from Psychology 100 courses, and received course credit points toward their final grade, as compensation for their time. The remainder of participants (3.5% of the sample) were obtained from a volunteer pool of subjects from upper level psychology courses.

Data for this study were collected as part of a larger study involving women's health and child abuse experiences. Only subjects who met criteria for non-abused and sexually abused groups were included in the present study. The sexually abused group was further divided into groups of intrafamilial and extrafamilial groups (criteria for group inclusion is discussed in more detail in the Methods section). The entire sample of subjects for this study was comprised of 361subjects (82%) who had not experienced childhood sexual abuse, and 79 subjects (18%) who had experienced childhood sexual abuse. Of those subjects who had experienced sexual abuse, 33 individuals (42%) experienced intrafamilial abuse, and 46 individuals (58%) experienced extrafamilial abuse.

The average participant was nineteen years of age, single, in her first year of university, enrolled in a social science program, with an intact family and a family income of over $45,000 per year. Significant differences were observed between sexually abused and non abused women on age, marital status, family composition, and

history of counseling. In general, sexually abused women were older, $X^2(4) = 19.05$, $p < .00$, and were more represented in the upper age levels. For example, 14% of sexually abused subjects were twenty-six years of age or older at the time of participation, while only 3% of the non-abused group occupied the same age range. Additionally, sexually abused subjects were less likely to be single, $X^2(4) = 28.42$, $p < .001$, more likely to have come from a step-family, single-parent family, or foster parent family, $X^2(6) = 27.24$, $p < .001$, and were more likely to have had past counseling for a variety of reasons, $X^2(2) = 8.49$, $p < .02$. Demographic variables, by sexual abuse category, are reported in Table 1.

## Procedure

Subjects were solicited for their participation in two ways, with both groups of subjects receiving the same information prior to the research session. Psychology 100 students were given a general description of the study on a sign-up sheet, while upper level undergraduate participants, who had previously indicated that they were interested in volunteering for psychology research, were contacted by telephone. Both groups of students were told that the research project was "a study of women's health concerns", and were informed that participants would be asked to fill out a questionnaire asking questions about their "personal, health, and medical history". Participants were not told that they would be asked about childhood abuse, but rather that "some questions may be viewed as sensitive in nature". Participants were assured that their responses were both anonymous and confidential.

Table 1

Demographic Characteristics of Sexually Abused and Non-Abused Women.

| | NO CSA n=361 (%) | EXTRA n=46 (%) | INTRA n=33 (%) | STATISTIC |
|---|---|---|---|---|
| **AGE** | | | | |
| 17-19 yrs | 79.2 | 78.3 | 57.6 | $\chi^2(4)=23.90^{**}$ |
| 20-25 yrs | 17.8 | 13.0 | 21.2 | |
| 26-56 yrs | 3.1 | 8.7 | 21.2 | |
| **YEAR OF UNIVERSITY** | | | | |
| 1 | 70.7 | 68.9 | 61.3 | $\chi^2(6)=3.12$ |
| 2 | 20.6 | 24.4 | 25.8 | |
| 3 | 5.9 | 2.2 | 9.7 | |
| 4+ | 2.3 | 4.4 | 3.2 | |
| **MAJOR** | | | | |
| Social Sciences | 37.7 | 37.0 | 48.5 | $\chi^2(10)=9.86$ |
| Sciences | 27.0 | 23.9 | 15.2 | |
| Education | 10.4 | 8.7 | 21.2 | |
| Fine Art & Music | 3.9 | 2.2 | 0.00 | |
| Business & Law | 7.9 | 10.9 | 3.0 | |
| Undecided | 13.0 | 17.4 | 12.1 | |
| **SEMESTER** | | | | |
| Spring | 68.4 | 67.4 | 75.8 | $\chi^2(2)=3.17$ |
| Fall | 31.6 | 32.6 | 24.2 | |
| **FAMILY OF ORIGIN** | | | | |
| Both Parents | 85.6 | 78.3 | 46.9 | $\chi^2(6)=35.91^{**}$ |
| Step-Parent Family | 5.0 | 4.3 | 21.9 | |
| Single Parent Family | 8.3 | 17.4 | 25.0 | |
| Foster Care or Extended Family | 1.1 | 0.00 | 6.3 | |

Note. EXTRA = Extrafamilially Abused, INTRA = Intrafamilially Abused.
$^{*}p < .01$ $^{**}p < .001$.

(table continues).

| | NO CSA n=361 (%) | EXTRA n=46 (%) | INTRA n=33 (%) | STATISTIC |
|---|---|---|---|---|
| **FAMILY INCOME** | | | | |
| <=29,999 | 11.2 | 11.4 | 20.7 | $\chi^2(8) = 10.37$ |
| 30,000 - 44,999 | 17.2 | 20.5 | 24.1 | |
| 45,000 - 59,999 | 25.0 | 27.3 | 34.5 | |
| 60,000 - 74,999 | 21.0 | 18.2 | 0.00 | |
| >=75,000 | 25.6 | 22.7 | 20.7 | |
| **MARITAL STATUS** | | | | |
| Single | 94.5 | 89.1 | 78.8 | $\chi^2(4) = 20.15^*$ |
| Married/Living as Married | 5.0 | 4.3 | 15.2 | |
| Separated/Divorced/Widowed | 0.6 | 6.5 | 6.1 | |
| **PREVIOUS COUNSELLING** | | | | |
| Yes | 26.9 | 43.3 | 52.6 | $\chi^2(2) = 8.21^*$ |
| No | 73.1 | 56.7 | 47.4 | |

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

Research sessions were conducted by the researcher alone, or with the assistance of another female research assistant, in classrooms at the University of Victoria. Sessions were conducted in groups, with a minimum of four women comprising each group, in order to ensure anonymity for participants. As participants entered the classroom, they were handed a standard departmental form outlining the basic rights and privileges of research participants, and were instructed to find a seat which was at least three seats away from other participants. The researcher explained that the distance in seating ensured greater confidentiality, and allowed participants to feel more comfortable completing the questionnaire because the questions were of such a personal nature.

After all of the participants had arrived, been seated, and read the rights and privileges form, they were reminded of the general nature of the study and were handed an informed consent form, which was also read to them by the researcher (see Appendix A). At this time, subjects were informed that the questionnaire included questions about life experiences, as well as sexual and medical history. Subjects were reminded that they could withdraw from the study at any time and were told that if they chose to discontinue their participation that they would still obtain their participation credits. Subjects were also told that they would not be penalized in any way and would not have to offer an explanation for the discontinuation of their participation. Participants were reminded not to put their names on the questionnaire and were informed about the manner in which responses were kept anonymous and confidential. Participants were also informed that more information about the study would be provided to them at the end of their

participation. After all of this information was disseminated, and questions answered, subjects signed the informed consent forms and placed them in a single envelope circulating throughout the classroom. Informed consent forms were collected prior to distribution of the questionnaires, to ensure that the individuals' names could not be associated with respondents and their questionnaires. Finally, each subject was then handed an uncoded questionnaire to complete.

The order of the questionnaires was counterbalanced to assess possible impact of the order of measures on subject's responses to stress and psychological symptoms. Due to the instatement of counterbalancing after initial data collection, unequal numbers of the two forms of the questionnaire were obtained. Assignment of questionnaires to participants was random, as the questionnaires were handed out by alternating the two forms. Sixty-six percent of participants completed the questionnaire with measures in the following order: Demographics Information, Trauma Symptom Inventory (Briere, 1991), the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978), the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), the Childhood Abuse Survey and the Feedback Questions (version one). The remaining 34% of participants completed the questionnaire with measures in the alternate order: Demographics Information, Perceived Stress Scale, Life Experiences Survey, Childhood Abuse Survey, the Trauma Symptom Inventory and Feedback Questions (version two). Because the measures used in this study were imbedded in a larger study of women's general health concerns, they either preceded or followed a number of physical health measures. Specifically, participants completed the health measures after the Childhood Abuse Survey in version

one, while the other participants completed the health measures after the Demographics Information in version two. It was not expected that completing physical health questions along with stress and psychological symptom measures would alter individual's responses, because participants had previously been told that the questions in the study queried "a variety of health concerns that many women have"; and informed women that psychological and physical health concerns would be addressed in the study.

When each subject completed the study, she put her questionnaire in a blank brown envelope provided at the beginning of the study, and then submitted her envelope to the researcher. Psychology 100 students were then given signed credit forms for their participation. Individuals were instructed to fill in their own names on the credit slips, to prevent the researcher from associating participants' names with the individuals. Finally, subjects were thanked for their participation, and were given a final debriefing sheet ("Purpose of the Study") informing them about this study (see Appendix B).

The debriefing sheet informed subjects that the researchers were interested in examining the influence of recent and past stressors on physical and psychological health. Subjects were also told that previous research has indicated that some early stressors (including early unwanted sexual experiences) may be related to a variety of health concerns. Telephone numbers of the research supervisor and the University Counseling Services were included on the debriefing sheet, in order to provide assistance while maintaining confidentiality, to individuals who might have felt upset by memories and emotions which might have been triggered by participation in this study.

## Measures

### Measures of Demographics and Childhood History

Demographics Information. The purpose of the demographics sheet was to obtain descriptive information about the sample and to determine appropriate covariates to be included in subsequent analyses. Subjects were asked to provide their age, year of study, and their declared or intended major. Participants were also asked to identify their marital/dating status, family composition, estimated family income, and birth order position. Family income was used as an estimation of the social economic status of subjects' families of origin (see Appendix C).

Subjects were also asked about past experience with therapy, and what their main reason was for seeking therapy. However, because this question was added after data collection began, data on this question is only available for 292 of the total 440 subjects. It was thought that therapy experiences may reduce reports of current stress and symptoms, or that therapy may have the opposite effect if subjects have learned that they are expected to report more stress and psychological symptoms as a result of their psychological problem, history, or condition.

In addition to basic descriptive information, the obtained demographics also allowed the author to test for significant differences in stress according to student level (first and upper level students), economic status, and marital/dating status. The author contended that first year students may report more stressful life events than other students, since they have graduated to a higher level of education, may have moved and separated from their family and friends, and may have secured a loan for the first time.

Childhood Abuse Survey. Participants were asked to provide information about their sexual experiences as children, in a section of the questionnaire entitled "Childhood Experiences". This information was obtained from the sexual abuse section, titled "section B", of a two part survey entitled "Childhood Experiences". The criteria for inclusion in the sexual abuse group was based on a series of questions and included both reported events and the subject's self-identification of an incident as sexual abuse. Individuals were asked to report if they had ever "been pressured into forced contact with the sexual part of their body, with the sexual part of someone else's body, (or were too young to understand something sexual had happened to them)" and were 18 years of age, or younger, at the time of the event. This initial question is a paraphrased version of an item from the Life Experiences Questionnaire (Bryer, Nelson, & Miller, 1987) which was used to identify sexual abuse in other studies (e.g., Chu & Dill, 1990). Individuals who responded in the affirmative were then asked a number of questions regarding this experience, and were asked to indicate whether they felt they had been sexually abused as a child. In addition to those who felt the recalled incident of sexual behaviour was sexual abuse, subjects who reported that they felt they had been sexually abused as a child, in general, were also included in the sexual abuse group. Where subjects felt that the identified sexual event was not sexual abuse, but the perpetrator of the reported incident was eighteen years of age or older, and the victim fourteen years of age or younger, the individual was included in the sexual abuse group. Following this secondary criteria, only three individuals (4% of the CSA group) were classified as experiencing childhood sexual abuse despite their beliefs that they had not been sexually

abused. Subjects who reported an incident which met the initial criteria for childhood sexual abuse, but identified a boyfriend as the perpetrator, were excluded from the child sexual abuse group. These experiences were excluded in order to differentiate possible consensual sexual acts as well as date-rape sexual experiences from child sexual abuse.

Women who met criteria for the sexual abuse group and identified the perpetrator of abuse as a family member were included in the intrafamilial sexual abuse group. This group included perpetrators from the subjects immediate family as well as more distant relatives (e.g., cousin, uncle) and family obtained through marriage (e.g., brother-in law, step-sister).

Other sexual abuse characteristics were included in the Childhood Abuse Survey, allowing the subjects to identify which sexual acts had occurred and the frequency of these acts, as well as the duration of the abuse, and the age at which the abuse began, and the age difference between perpetrator and victim. Subjects were also queried as to additional sexual abuse experiences, which provided a measure of the individual's history of multiple abuse experiences (with multiple perpetrators).

Measure of Psychological Symptoms

The Trauma Symptom Inventory. The Trauma Symptom Inventory (TSI; Briere, 1995) is a measure of psychological symptoms which represents a wide variety of symptoms common to individuals who have experienced a traumatic event (e.g., interpersonal violence, natural disaster)The TSI is 100 item measure of post-traumatic symptomology that consists of ten subscales: anxious arousal (AA), depression (D), anger/irritability (AI), intrusive experiences (IE), defensive avoidance (DA), dissociation

(DIS), sexual concerns (SC), dysfunctional sexual behaviour (DSB), impaired self-reference (ISR), and tension reduction behaviour (TRB). This measure is based upon an earlier questionnaire, called the Trauma Symptom Checklist (TSC-33 and the TSC-40) (Briere & Runtz, 1989; Briere & Runtz, 1992). The TSI is an appropriate measure for the present study, as it assesses psychological symptoms most relevant to trauma, and is therefore more inclusive than measures of general symptoms or distress (Briere, 1991).

Subjects are instructed to indicate how often each of one hundred experiences has occurred for them within the past six months. Responses range from "never" (0) to "often" (3) on a four point scale (see Appendix D). Subscale scores are obtained by summing the items for the applicable subscale; with eight or nine items comprising each subscale. Acceptable reliability coefficients of the TSI subscales have been derived for both student and general population samples, with alpha coefficients ranging from 0.78 to 0.93 (Briere, 1991). Concurrent and predictive validity has also been well established for the TSI. For example, subscales of the TSI correlated significantly with those on the Brief Symptom Inventory and elevated TSI scores are related to adulthood and childhood interpersonal violence and disaster experiences in both in clinical and normative samples (Briere, 1995). Of greatest relevance to the present study, TSI scores in both a university and general population sample have been found to be significantly related to childhood sexual abuse (Briere, 1995). Research relating TSI scores to various traumatic experiences indicate that subscale scores differ according to trauma experience, with trauma groups scoring higher on TSI subscales than no trauma groups (Briere, 1995).

Additionally, individuals with history of childhood sexual abuse have demonstrated higher scores than non-abused or physically abused individuals on the following subscales: sexual concerns, dysfunctional sexual behaviour, anxious arousal, anger/irritability, and intrusive experiences (Briere, 1995).

Measures of Stress

The Life Experiences Survey. The Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978) is a self-report measure of life events experienced in the past year. The measure is composed of 57 items, 10 of which were specifically designed for students. The LES is largely based upon events found in other life event measures, particularly the Social Readjustment Rating Scale (SRRS; Holmes & Rahe, 1967), with thirty-four of the events in the LES similar to those found in the SRRS. However, the authors of the LES improved upon the SRRS by dropping several items from the measure (Christmas and vacation, for example) and making other items more specific. In addition, several other important events which were not included in other measures were included in the LES: for example, abortion, illness of a close friend, and breaking up with a boyfriend were not represented in other measures of life events.

Another advantage of the LES, above other measures of life events, is the inclusion of a rating of the desirability and impact of events. Individuals indicate not only which events they have experienced in the past year, but also report their (un)desirability on a seven point Likert scale, with responses ranging from extremely negative (-3) to no impact (0) to extremely positive (+3). This scale allows the individual to report their subjective appraisal of the desirability and impact of the event, rather than

having the researcher make inferences about the degree of overall change required for the events. This manner of measurement of life events reflects recent research findings which indicate that desirability is a critical characteristic of life events, and that measures of desirability outweigh the utility of the weighting events based on an objective rating of overall life change (Sarason et al., 1978; Vinokur & Selzer, 1975). As there is still contention about the issue of objective and subjective weighting of events in stress research (Cohen, Kessler, & Gordon, 1995), the LES allows the researcher to consider overall amount of life change (summed number of events), as well as the desirable and undesirable impact of these events.

The Life Experiences Survey has demonstrated reasonable test-retest reliability, over a 5- to 6-week interval, with reliability coefficients of 0.56 and 0.88 for negative change scores and 0.63 and 0.64 for total change scores with two separate samples (Sarason et al., 1978). The LES has also demonstrated good predictive validity, as it significantly correlates with various measures of psychological symptoms and adjustment including state and trait anxiety, social discomfort, depression, and grade point average (Sarason et al., 1978). In addition, the LES was able to distinguish students from a counseling center from those of the general student population, finding that student clients had higher negative change scores than other students (Sarason et al., 1978). Additional strengths in the LES include the observation that scores for men and women are not significantly different, and that the LES is unrelated to social desirability (Sarason et al., 1978).

Several adjustments were made to the LES for the purpose of this study. While

the original LES required respondents to specify whether they had experienced the event(s) in the past 6 months, or in the past year, the researcher only required subjects to identify events occurring within the past year. In the directions for the LES, subjects were explicitly instructed to exclude events occurring more than a year prior to the research session.

The LES item content was also modified slightly for this study. Three items were removed, because they applied to male respondents only (for example, "wife/girlfriend having abortion"), and two items were removed because they were believed to be confounded with the dependent measure ("major change in sleeping habits" and "major change in eating habits"). Three items in the original measure were represented by six items in the present measure; for example, instead of "Major change in financial status (a lot better off or a lot worse off)" the question was separated into the two forms to represent separate positive change and a negative change consistent with other questions on the LES. In addition, where the original LES provided an opportunity for the individual to identify several persons who had died or become seriously ill, the items were combined and simply reinstated as one item by the statement "Death of a close family member" or "Serious illness or injury of close family member". Two items were re-worded to be inclusive of various sexual preferences; for example, "Breaking up with boyfriend/girlfriend" was changed to "Breaking up with romantic partner". Finally, because of expected variability in responses, individuals were not provided with the opportunity to include up to three recent events not already included in the standardized measure. As a consequence of these changes, there are a total of 54 items on the

modified LES, used in this study, (see Appendix E). Subjective life event stress scores were derived by summing only negative life event ratings (the "negative change score"), while the objective life event scores were derived by summing the number of life events endorsed by the subject.

The Perceived Stress Scale. The Perceived Stress Scale (PSS) is a measure of "global stress" which is based on a person's appraisal of his or her life as stressful, including qualities of "overload", uncontrollability, and unpredictability (Cohen, Kamarck, & Mermelstein, 1983). It is intended to be an assessment of global stress, because it does not examine particular life events, but rather a person's subjective experience of stress. This assessment of the individual's appraisal of stress is argued to be a superior measure of stress because it includes whatever stressors (events and /or hassles) that are relevant for the individual. Moreover, this scale assesses stress on the basis of the individual's appraisal of threat or demand in relation to her perceived ability to cope with the situation.

Subjects are instructed to consider how often they have had certain thoughts or feelings, related to stress, within the past month. The PSS is composed of 14 items, each of which is rated on a five point scale from 0 (never experienced) to 4 (very often experienced) (see Appendix F). The PSS is scored by summing scores for the 14 items on the scale; seven of fourteen items (4, 5, 6, 7, 9, 10, 13) must be reverse scored. Mean scores for two student samples were 23.18 and 23.67 (Cohen et al., 1983).

The PSS demonstrates acceptable test-retest reliability, with correlations between re-tests decreasing with larger intervals of time. For example, a student sample re-tested

within a two day interval resulted in a correlation coefficient of 0.85 (Cohen et al., 1983). However, the test-retest reliability was somewhat reduced over a six week interval (for subjects in a subjects in a smoking cessation program), with test-retest scores correlated at a moderate level ($r = 0.55$) (Cohen et al., 1983). The decrease in correlation over a six week period is not necessarily a detriment to the measure, since it is measuring the subject's appraisal of stress which might vary greatly over a six week period, particularly in a group of individuals trying to quit smoking over that period of time.

Concurrent validity has been established for the PSS, as significant correlations (ranging from a low of 0.20 for number of events and 0.49 for the impact of events) were observed between scores on the PSS and the College Student Life Event Scale (Cohen et al., 1983). The PSS was also found to be only slightly correlated with the negative change score on the Life Experiences Survey ($r = 0.24$), indicating that the LES and PSS measure slightly different features of subjective stress (Pbert, Doerfler, & DeCosimo, 1992).

Regarding predictive validity, the PSS has significantly correlated with depression, anxiety, and psychosomatic symptoms (Pbert et al., 1992), physical symptoms, social anxiety, and even predicted smoking rate three months following treatment (Cohen et al., 1983). Like the LES, the research on the PSS has determined no significant differences in scores for men or women (Cohen et al., 1983).

Feedback Questions. In the final section of the questionnaire, the participants were asked several open ended questions. The first question inquired about subjects' experienced stress while completing the questionnaire, and also about their own

explanations for their experienced stress. These questions were asked to provide the researcher with an indication of whether subjective stress was created during the study by answering the personal questions on the questionnaire. Finally, subjects were asked to indicate any impact (positive or negative) that their participation had on them, and to provide any comments (see Appendix H).

Counterbalancing the Questionnaire

As mentioned previously, two versions of the questionnaires were used with each questionnaire including the same measures, but in different orders. The location of the two stress measures was alternated, as was the relative location of the Trauma Symptom Inventory and the Childhood Experiences Survey. These measures were counterbalanced to assess possible order effects. Specifically, it was thought that completing the Childhood Experiences Survey prior to the TSI might inflate TSI scores, and that completion of the Life Experiences Scale might inflate Perceived Stress Scores.

## Results

The main hypothesis that childhood sexual abuse and stress and would predict psychological symptoms was examined using Multivariate Multiple Regression. Relationships between childhood sexual abuse and stress, and childhood sexual abuse and psychological symptoms, were examined using Multivariate Analysis of Variance (MANOVA). Appropriate covariates for MANOVAs and multivariate multiple regressions were examined by using Pearson product moment correlation, Independent Samples T-tests, or univariate analysis of variance (ANOVA) as appropriate.

### Preliminary Analysis: Measures of Stress

Pearson product-moment correlations were used to assess the degree of relationship between the three measures of stress: number of life events, appraisal of negative life events (negative change score), and perceived stress. Although negative change scores are based on subjects' appraisal of the events, it was not surprising to find that they were highly correlated to the actual number of recent life events ($r = -0.68$, $p = .00$), since number of life events and negative change are derived from the same scale (Life Experiences Survey, Sarason et al., 1978). As a result, only the negative change score was chosen to represent stress scores on the Life Experiences Survey. Negative change score (appraisal of negative life events) was significantly related to perceived stress ($r = -.36$, $p = .00$)

A single question with a six-point scale assessed the subject's current stress: "How much stress, if any, do you feel that you currently experience?". This item was correlated with both the perceived stress score ($r = 0.67$, $p = .00$) and the negative change

score ($r$ = -0.29, $p$ = .00). Because appraisal of negative life events and perceived stress were only moderately correlated, $r$ = -0.37, and have proven reliability (Cohen et al., 1983; Kuiper, Olinger & Lyons, 1986; Sarason et al., 1978), they were the only stress scores retained for further analyses. Refer to Table 2 for a correlation matrix of the stress measures.

Two Independent Samples t-tests were used to examine possible effects related to the order of the questionnaires on perceived stress and negative changes scores. These tests determined that the order of the measures was not significantly related to perceived stress, $t$ (151) = -.70, $p$ = .49, or to the appraisal of negative life events, $t$ (151) = -.15, $p$ = .89. Thus, providing information about recent life events or psychological symptoms, prior to answering questions about perceived stress, did not influence subjects' responses. Likewise, answering questions about perceived stress, first, did not influence subjects responses to measures of recent life events or psychological symptoms.

The feedback questions, which queried individuals about immediate stress, indicated that 22.9% of subjects felt some stress while completing the questionnaire. However, an Independent Samples T-test indicated that subjects who reported experiencing stress during completion of the questionnaire did not exhibit significantly different perceived stress scores, $t$ (295) = 1.91, $p$<.06. T-tests for the same variable on the negative change score were also non-significant, indicating that stress experienced while participating in the study was not related to responses on either measure of stress. Chi-Square analysis indicated that the sexually abused subjects were no more likely to experience stress during the study than non-abused subjects, $\chi^2(1) = 1.70$, $p$ = .19.

Table 2

Intercorrelations Between Stress Measures

| Measure | 1. | 2. | 3. | 4. | 5. |
|---|---|---|---|---|---|
| 1. Number of Life Events | - | -.68*** | .16*** | .09 | .25 |
| 2. Negative Change Score | - | - | -.36*** | -.29 | -.24 |
| 3. Perceived Stress Score | - | - | - | .64*** | .10 |
| 4. Single Question† | - | - | - | - | .24 |
| 5. Stress Attributed to CSA† | - | - | - | - | - |

Note. † data available for only 292/440 participants. *** $p \leq .001$

In addition, individuals who reported stress experienced during the study cited a variety of reasons for their feelings including reasons directly related to their participation (e.g., "wondering what my answers mean", "answering personal questions") as well as external sources (e.g., "school"). Only 6.9% of the sample felt that the stress experienced during the study might have affected their responses on the questionnaire. An Independent Samples T-test for individuals who felt their responses might have been affected by immediate stress, proved to be non-significant for both perceived stress, $t$ (58) = 0.75, $p$ = .46 and for appraisal of negative life events, $t$ (58) = 0.14, $p$ = .89.

Preliminary Analysis: Trauma Symptom Inventory

Internal consistency reliabilities of the subscales of the Trauma Symptom Inventory were analyzed by examining Chronbach's alpha co-efficients for each subscale. Reliability coefficients for the TSI clinical scales in the present sample demonstrated a mean alpha of .82, with nine of ten subscales exhibiting alphas of .80 or greater. The only subscale which had somewhat weak reliability was Tension Reduction Behaviour which had an alpha of .64. These alpha coefficients are comparable to those obtained for the university sample reported by the author of the TSI (Briere, 1995, p.35), and confirm the internal consistency of the TSI subscales.

An Independent Samples T-test of mean differences on TSI subscales, indicated that order of presentation of the measures in the questionnaire was significantly related to only one of the ten subscales, Defensive Avoidance, $t$ = 2.35, $p$ = .02. Contrary to what might be expected, individuals who completed the Trauma Symptom Inventory *first* had higher Defensive Avoidance scores ($M$ = 8.58, $SD$ =6.06) than individuals who

completed it after responding to the other measures (M =7.13, SD = 6.19). Consequently, order of questionnaires was entered as a covariate, but only for the Defensive Avoidance subscale in subsequent ANOVAs.

Demographic Variables Related to Stress and to Psychological Symptoms

Since previous research had demonstrated significant relationships between measures of stress and psychological symptoms and demographic variables such as socioeconomic status, marital status (Thoits, 1982; Thoits, 1983), and age (Briere, 1995), relationships between these variables were assessed to determine the utility of using these demographic variables as covariates in the main analyses. Pearson product moment correlations indicated no significant relationships between family income and perceived stress, r = -.01, p = .796, appraisal of negative life events, r = -.00, p = .93, or any of the symptom subscales of the Trauma Symptom Inventory (TSI). Consequently, family income was not included as a covariate in further analyses of stress or of psychological symptoms.

Univariate tests of analyses of variance were conducted to examine the relationship of marital status to stress and to psychological symptoms. First, marital status raw data were reduced to represent three categories: single, married (or living as married), and previously married (separated, divorced, or widowed). The ANOVAs for marital status on stress scores revealed a significant relationship for perceived stress only, F (2, 437) = 3.12, p = .05. Although group means on perceived stress were highest for single individuals (M = 26.62, SD = 7.80) compared to married (M = 23.88, SD = 8.38) and previously married (M = 20.86, SD = 8.97) persons, a post-hoc Scheffé test

determined that the between-group comparisons were not significant at the $p < .05$ level. In addition, marital status was unrelated to negative change scores, $F$ (2, 437) = 0.71, $p = .49$.

A Multivariate analysis of variance (MANOVA) was conducted to evaluate the relationship between marital status and the symptom scores of the Trauma Symptom Inventory. As the MANOVA for the TSI was significant, $F$ (2, 433) = 2.47, $p < .001$, univariate ANOVAs were subsequently conducted. Significant ANOVAs for marital status on TSI subscales were apparent for Anxious Arousal, $F$ (2, 433) = 4.18, $p = .02$, Impaired Self-Reference, $F$ (2, 433) = 6.68, $p = .00$, and for Tension Reduction Behaviour, $F$ (2, 433) = 4.32, $p = .01$. Post-hoc Scheffé tests indicated that the only significant between-group differences ($p < .05$), on TSI subscale scores, was that previously married women had lower Anxious Arousal scores ($M = 4.86$) than either married ($M = 9.08$) or single ($M = 9.68$) women.

Additional analyses indicated that subject age was related to perceived stress ($r = -.14$, $p = .002$), with older students reported experiencing less stress than younger students. Similar to analyses of the other demographic variables, age was unrelated to negative change scores ($r = .06$, $p = .17$). Age was, however, significantly related to reports of psychological symptoms on six of the ten subscales: Anxious Arousal ($r = -.12$, $p < .01$), Anger/Irritability ($r = -.10$, $p < .05$), Depression ($r = -.09$, $p < .05$), Impaired Self-Reference ($r = -.14$, $p < .01$), Sexual Concerns ($r = -.10$, $p < .05$), and Tension Reduction Behaviour ($r = -.14$, $p < .01$). While age was significantly related to psychological symptoms on these six subscales of the TSI, it accounted for only 1-3% of

variance when entered into subsequent multivariate multiple regression analyses.

It was expected that marital status, age, and childhood sexual abuse history would be inter-related, as previous research had indicated that older students are more likely to be married and that these older students are more likely to report histories of childhood sexual abuse (Roche, 1995). For the purpose of conducting Chi-Square analyses on these variables, age was divided into three groups: 17-19 years of age (77.4% of participants), 20-25 years of age (17.5% of participants), and 26 years and older (5.0% of participants). Age and marital status were indeed highly related, $\chi^2$ (4) = 200.05, $p < .01$, as were CSA and marital status, $\chi^2$ (2) = 15.95, $p < .01$, and CSA and age, $\chi^2$ (2) = 16.10, $p < .01$. The relationships between these variables confirm that the older students were more likely to be married or previously married than younger students. Additionally, a higher proportion of women with a history of childhood sexual abuse were 26 years of age or older, or were either married or previously married. For example, 13.9% of women with a history of childhood sexual abuse were 26 years or older at the time of the study, while only 3.1% of non-abused women were within the same age range. Similarly, 8.9% of sexually abused women were married at the time of the study, compared to 5.0% of non-abused women; and while 6.3% of sexually abused women were separated, divorced, or widowed, less than 1% of the non-abused women were previously married.

The relationships of age and of marital status to stress and to symptoms could suggest the inclusion one of these variables as covariates in further analyses. However, the researcher decided to exclude both of these variables from further analyses largely because of the relationships among them and because of their significant relationships to

childhood sexual abuse. The inter-relationships of these variables make reasoning for statistical adjustment for their individual effects on stress and symptoms difficult, since one can not determine the individual contributions of age and marital status, to stress and to symptoms, when these variables are so highly related and are also significantly related to CSA. This decision took into account Tabachnick and Fidel's (1989) caution against using covariates which are highly related to the independent variables in regression analyses: "When too many covariates are used and they are correlated with each other, a point of diminishing returns in adjustment of the DV [dependant variable] is quickly reached [because of diminished degrees of freedom]" (p. 346). Another consideration in this decision was the researcher's judgement that there was little justification to include age and marital status as covariates when so few individuals in this study were in the older age groups or were married or previously married at the time of their participation. Additionally, while statistically significant relationships were observed between these demographic variables and measures of stress and of psychological symptoms, the actual size of these relationships were relatively small, ranging from correlations of $\underline{r} = -.09$ to $\underline{r} = -.14$ (accounting for less than 2% of the variance)..

In addition to marital status and age possible relationships between previous counselling and stress, and previous counselling and psychological symptoms were examined. Independent Samples T-Tests for previous counselling on both perceived stress and appraisal of negative life events (i.e. negative change score) were non-significant. However, a MANOVA indicated that previous counselling was significantly related to psychological symptoms measured on the TSI, $\underline{F}$ (10, 279) = 3.29,

$p < .001$. Univariate ANOVAs on the subscales of the TSI indicated that previous counselling was significantly related to each of the ten subscales, ranging in significance from a low of $F(1, 290) = 4.27$, $p = .04$ for Impaired Self-Reference, to a high of $F(1, 290) = 22.20$, $p < .001$ for Intrusive Experiences. In all cases the counselled group scored higher on each subscale than the non-counselled group. Chi Square analysis indicated that of those individuals who had previous counselling (for a variety of reasons), 74.2% were from the non-abused group. Thus, despite the fact that sexually abused subjects were more likely to have had previous counselling, compared to non-abused subjects (see Table 1), the counselled group was composed primarily of women who had not been abused, due to the greater number of women in the non-abused group. While these statistical findings suggest that inclusion of previous counselling could serve as a reasonable covariate in TSI analyses, it was not included as a covariate because it would decrease the sample size by 34.1%[1], and result in a significant loss of power to detect effects in subsequent analyses. Instead, a post-hoc analysis will examine the influence of previous counselling in multiple regression analyses related to psychological symptoms.

The researcher also tested for significant effects of a number of variables which could confound findings in further analyses involving stress. The author hypothesized that first year students may report greater stress than those who have already completed at least one year of study, due to the adjustment required when entering university.

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[1] One-hundred and fifty participants were not queried about past counselling, due to the addition of this question after initial data collection.

Additionally, many life events (such as moving to a new city and beginning advanced education) occur at the beginning of the school term, therefore students may experience significantly more stress at that time. Independent Samples T-tests were conducted in order to determine if students differed on their stress scores, according to student level (first year or upper level student) and semester of participation (spring or fall). Of these two variables, only the semester of participation was related to significant differences in stress, with significant differences in perceived stress only, $t$ (438) = -2.21, $p < .03$. Students who participated in the study during the fall term reported significantly greater perceived stress scores ($M$ = 27.61, $SD$ = 8.68) than students who participated in the spring term ($M$ =25.81, $SD$ = 7.57). Relationship of semester of participation to appraisal of negative life events was non-significant, $t$ (438) = -0.22, $p < .82$. In this case, a statistical adjustment in stress scores according to semester of participation is valid, as individuals who participated in this study in the spring semester (a less stressful period of time in the school year) may have had similar perceived stress scores if they had participated in the fall term. Consequently, semester of participation was used as a covariate for analyses involving stress as the dependant variable.

Childhood Sexual Abuse Characteristics

Individuals who reported an experience of childhood sexual abuse indicated that the first incident of abuse occurred at 9 years of age ($M$ = 9.05), with one discrete incident or with the abuse occurring in a period less than one year (56.4%), with a perpetrator who was more than 5 years older than the victim (61.9%). Additionally, survivors of childhood sexual abuse in this study indicated that the perpetrator of the

abuse was most frequently a male friend or other unidentified male (38%), cousin (10.1%), father (8.9%), male stranger (8.9%), male adult friend of the family (5.1%), male neighbour (5.1%), grandfather (5.1%), or brother (5.1%). Most perpetrators of abuse were male (94.9%). In most cases (83.5%), the survivor of sexual abuse had disclosed their experience to another person, most often to a friend (39.4%), their mother (22.7%), boyfriend or husband (9.1%), sister or step-sister (7.6%), or counsellor/therapist (7.6%). However, it should be noted that the modal age of first disclosure was 17 years of age, indicating that few victims of childhood sexual abuse disclosed their abuse while it was occurring (see Table 3 for other sexual abuse characteristics).

Childhood Sexual Abuse and Stress

In order to test the hypothesis that women with a history of childhood sexual abuse would report experiencing more stress than women who did not have a history of sexual abuse, a multivariate analysis of covariance (MANCOVA) was conducted with comparisons between sexually abused and non-abused groups on negative change scores and perceived stress, with semester of participation used as a covariate. Similarly, a comparison between intrafamilial and extrafamilial sexual abuse groups was made using the same dependant variables. Sexually abused and non-abused women did not statistically differ in amount of perceived stress $F$ (1, 437)= 0.01, $p$ = .94 or appraisal of negative life events $F$ (1, 437) = 0.30, $p$ = .58 experienced in the recent past. Differentiating intrafamilial from extrafamilial abuse improved the relationship of abuse to stress, but the relationship remained statistically non-significant for both perceived stress, $F$(1, 78) = 1.38, $p$ = .24, and for appraisal of negative life events, $F$(1, 78) = .27,

Table 3

Sexual Abuse Characteristics of Women who Experienced Intrafamilial and Extrafamilial Abuse.

| | EXTRA n=46 (%) | INTRA n=33 (%) | STATISTIC |
|---|---|---|---|
| **AGE OF ABUSE ONSET** | | | |
| < = 5 yrs old | 21.7 | 30.3 | $\chi^2(3) = 7.38$ |
| 6 to 10 yrs old | 41.3 | 48.5 | |
| 11 to 15 yrs old | 17.4 | 21.2 | |
| 16 to 18 yrs old | 19.6 | 0.0 | |
| **AGE DIFFERENCE** | | | |
| < 5 yrs | 47.7 | 25.0 | $\chi^2(2) = 6.37^{*}$ |
| 5 to 10 yrs | 15.9 | 9.4 | |
| > 11 yrs | 36.4 | 65.6 | |
| **DURATION** | | | |
| < 1 yr | 71.7 | 34.4 | $\chi^2(3) = 16.04^{**}$ |
| 1 to 5 yrs | 28.3 | 43.8 | |
| 6 to 10 yrs | 0.0 | 12.5 | |
| 11 to 15 yrs | 0.0 | 9.4 | |
| **INTERCOURSE** | | | |
| None | 82.6 | 81.8 | $\chi^2(4) = 3.14$ |
| 1-2 Times | 13.0 | 9.1 | |
| 3-5 Times | 4.3 | 3.0 | |
| 11-20 Times | 0.0 | 3.0 | |
| >20 Times | 0.0 | 3.0 | |
| **MULTIPLE PERPETRATORS** | | | |
| Yes | 15.2 | 36.4 | $\chi^2(1) = 4.70^{*}$ |
| No | 84.8 | 63.6 | |
| **STRESS ATTRIBUTED TO CSA** | | | |
| None | 12.5 | 10.5 | $\chi^2(5) = 5.61$ |
| Little | 37.5 | 26.3 | |
| Some | 18.8 | 21.1 | |
| Much | 15.6 | 5.3 | |
| Very Much | 12.5 | 15.8 | |
| Extreme | 3.1 | 21.1 | |

Note. * $p \leq .05$ ** $p \leq .001$. EXTRA = Extrafamilial Abuse, INTRA = Intrafamilial Abuse.

$p = .60$. A single sample t-test between the stress scores observed in this study, to those of another student sample, indicated that perceived stress scores for this sample ($M = 26.37$, $SD = 7.97$) were significantly higher than values derived from university students in Cohen et al.'s (1983) sample, ($M = 23.57$, $SD = 7.55$), $t = 7.37$, $p < .001$. Negative change scores for this sample, however, were relatively consistent with the scores observed in other studies. The negative change scores for this sample ($M = 6.50$, $SD = 5.43$) were significantly higher than those for the students in Sarason et al.'s sample ($M = 7.04$, $SD = 7.90$), $t = 2.08$, $p < .05$, but were comparable to those of Kuiper et al.'s (1986) sample, ($M = 6.14$, $SD = 6.34$), $t = -1.40$, $p = .16$.

As there was no overall observed relationship between history of childhood sexual abuse and stress scores, specific characteristics of the subject's sexual abuse history were examined to determine if they would predict stress scores. A hierarchical multivariate multiple regression was employed to determine if sexual abuse characteristics (intrafamilial abuse, duration of abuse, history of multiple perpetrators, and sexual abuse severity based on both type and frequency of sexual acts) would predict perceived stress and negative change scores. This analysis determined that only the duration of experienced sexual abuse significantly predicted perceived stress, $F(1, 78) = 8.71$, $p < .01$, with the combination of variables accounting for 9% of the variance in stress scores. Subjects who experienced abuse over an extended period of time generally reported greater perceived stress scores. For example, subjects who experienced sexual abuse over a period less than one year had lower perceived stress scores ($M = 25.39$) than those who experienced sexual abuse for a period exceeding ten years ($M = 35.33$). This

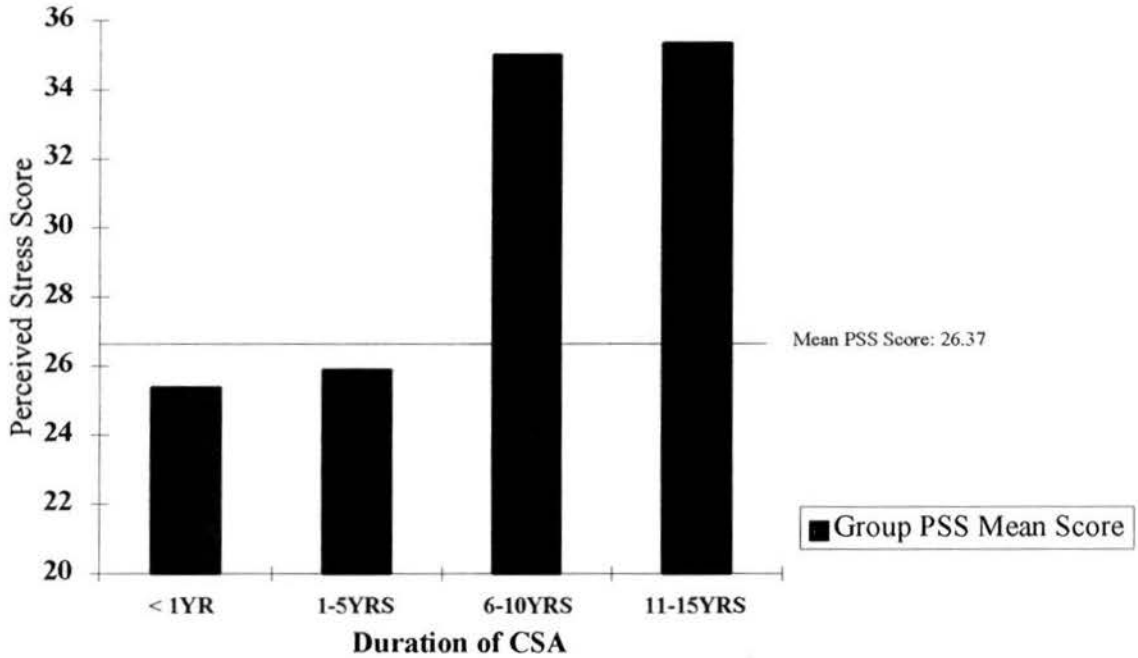
finding is particularly notable as only 9% of the sexually abused group experienced abuse with a duration of six or more years, but a significant effect for duration on perceived stress score was still detected (see Figure 1). Thus, although main effects for CSA on stress scores were not observed in this sample, it may be that a relationship exists for individuals who have experienced abuse of longer duration.

It is also possible that a history of childhood sexual abuse contributes to stress in a unique fashion, which may not be captured by a simple relationship between CSA and general stress. This idea is supported by the observation that a one-statement question about stress directly attributed to childhood sexual abuse (see Appendix G) was neither related to perceived stress ($r$ = .10, $p$= .50) nor to appraisal of negative life events ($r$ = -.24, $p$ = .10), (see Table 2).

Childhood Sexual Abuse and Psychological Symptoms

A multivariate analysis of variance (MANOVA) was employed to test for differences between sexually abused and non-abused subjects on the ten subscale scores of the TSI. As discussed previously, no covariate was used in these analyses with the sole exception of the Defensive Avoidance subscale, where order of the measures was used as a covariate in a univariate ANOVA. A MANOVA of the TSI subscales determined that women with a history of childhood sexual abuse reported experiencing more psychological symptoms than women without a history of childhood sexual abuse, $F$ (10, 426) = 6.38, $p$ < .001. ANOVAs indicated that there was a significant relationship between history of childhood sexual abuse and psychological symptoms on seven of ten subscales on the TSI: Anger/Irritability, Defensive Avoidance, Depression,

**Figure 1**
**Perceived Stress (PSS) by CSA Duration**



Dysfunctional Sexual Behaviour, Intrusive Experiences, Sexual Concerns, and Tension Reduction Behaviour. However, there were no significant differences in any TSI subscale scores according to extrafamilial and intrafamilial sexual abuse. Mean scores and p values for sexually abused and non-abused groups in this sample are presented in Table 4.

A comparison of obtained TSI means to those reported by the author of the measure (Briere, Elliott, Harris, & Cotman, 1995) indicates that, while scores of sexually abused subjects in the present sample were higher than those of non-abused subjects, they were still noticeably lower than those of victimized individuals in a clinical sample. Refer to Table 5 for a comparison of scores on the TSI between this sample of university women and a sample of victimized women in psychotherapy.

Contribution of Sexual Abuse and Stress to Psychological Symptoms

Multivariate multiple regression allowed the researcher to determine the amount of variance in symptoms that was accounted for with a model including CSA, perceived stress and appraisal of negative life events (negative change score) as independent variables. These analyses also allowed the researcher to test the hypothesis that the *interaction* between a history of childhood sexual abuse and recent stress would predict psychological symptoms among women. Hierarchical regression procedures were employed, with childhood sexual abuse history (dummy coded to represent CSA and no-abuse groups), perceived stress score, negative change score, and the interaction of CSA and stress scores serving as independent variable "predictors" of the ten symptom subscales of the TSI. Predictor variables were entered into the regression in three steps:

Table 4

TSI Means for Sexually Abused and Non-Abused Women.

| TSI Subscale | NO CSA (n=361/440) | CSA (n=79/440) | F (1,434) |
|---|---|---|---|
| Anxious Arousal | 9.48 | 9.94 | 0.66 |
| Anger/ Irritability | 9.13 | 10.48 | 4.24* |
| Defensive Avoidance | 7.47 | 10.87 | 20.80*** |
| Depression | 8.31 | 10.17 | 7.99** |
| Dissociation | 7.85 | 8.76 | 2.26 |
| Dysfunctional Sexual Behaviour | 3.29 | 6.35 | 35.58*** |
| Intrusive Experiences | 5.91 | 9.22 | 28.74*** |
| Sexual Concerns | 5.21 | 7.06 | 10.40*** |
| Impaired Self -Reference | 10.46 | 11.38 | 1.89 |
| Tension Reduction Behaviour | 3.85 | 5.54 | 19.92*** |

Note. * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$.

Table 5

Mean Scores on the TSI Compared to a Clinical Sample

| TSI Scale | Present university sample with a history of CSA | | Clinical sample with trauma history* | |
|---|---|---|---|---|
| | M | SD | M | SD |
| Anxious Arousal | 9.94 | (5.06) | 14.56 | (5.35) |
| Anger/Irritability | 10.48 | (5.05) | 15.06 | (6.22) |
| Depression | 10.17 | (5.74) | 15.36 | (6.20) |
| Defensive Avoidance | 10.87 | (7.06) | 13.73 | (5.98) |
| Dissociation | 8.76 | (5.32) | 13.58 | (6.42) |
| Dysfunctional Sexual Behaviour | 6.35 | (6.14) | 4.64 | (5.88) |
| Intrusive Experiences | 9.22 | (6.25) | 12.57 | (6.38) |
| Impaired Self Reference | 11.38 | (5.85) | 15.07 | (6.21) |
| Sexual Concerns | 7.06 | (5.92) | 10.57 | (2.68) |
| Tension Reduction Behaviour | 5.54 | (4.14) | 6.50 | (4.64) |

Note. *Data from Briere, J., Elliot, D. M., Harris, K., & Cotman, A. (1995).

in the first step, CSA was entered as the sole predictor variable. Then, in the second step, perceived stress score (PSS) and negative change score (NCS) were entered into the regression. Finally, in the third step, the interaction of CSA and perceived stress score (CSA x PSS), and the interaction of CSA and the negative change score (CSA x NCS) were included in the regression.

When CSA was entered as the sole predictor of psychological symptoms, childhood sexual abuse was a significant predictor for symptoms on seven of the ten TSI subscales: Anger/Irritability, Defensive Avoidance, Depression, Dysfunctional Sexual Behaviour, Intrusive Experiences, Sexual Concerns, and Tension Reduction Behaviour (ranging in significance from $F = 4.24$, $p < .05$ for Anger/Irritability, to $F = 35.58$, $p \leq .001$ for Dysfunctional Sexual Behaviour; see Table 4). However, the accounted variance in the model was small, with the largest amount of variance accounted for being only 7.4% (for Dysfunctional Sexual Behaviour).

When perceived stress and appraisal of negative life events were added, a great deal more variance in psychological symptoms was accounted for in the regression. This model indicated that CSA remained a significant predictor for all but three of the TSI subscales (Anxious Arousal, with the largest amount of accounted variance being 38.3% (for Depression). Perceived stress was a highly significant predictor for all of the TSI subscales, with significance ranging from $F = 8.68$, $p < .01$ (for Dysfunctional Sexual Behaviour) to $F = 198.12$, $p < .001$ (for Depression). Pearson product moment correlations confirmed that there is a significant positive relationship between perceived stress score and all of the TSI subscale scores indicating that as reports of perceived

stress increase, so to do psychological symptoms. Correlations between perceived stress and TSI subscales ranged from moderate to high, with a range of $r = .20$ ($p < .001$) for Dysfunctional Sexual Behaviour to $r = .60$ ($p < .001$) for Depression. This variation in strength of association makes sense, as stress measures have consistently shown a relationship between stress and "general" symptoms (such as anxiety and depression), while sexual trauma symptoms (such as Dysfunctional Sexual Behaviour) may demonstrate slightly less association with general measures of stress.

Appraisal of negative life events also proved to be a significant predictor for all but three of the TSI subscales (Anxious Arousal, Anger/Irritability, and Dissociation), but with much smaller $F$ values compared to those for perceived stress. Correlations between negative change scores and TSI subscales were also significant and in the expected direction; ranging from $r = -.22$ ($p < .001$) for Dissociation to $r = -.34$ ($p < .001$) for Intrusive Experiences. Therefore, as appraisals of life events became more negative, reports of psychological symptoms increased. Standardized regression coefficients (ßs ) and significance levels for independent variables predicting psychological symptoms are presented in Table 6.

In the final step of the regression equation, the interactions between CSA and stress measures were added to the other independent variables. With the inclusion of the CSA x PSS and CSA x NCS interactions, the amount of accounted variance in psychological symptoms was improved only slightly (1% for Tension Reduction Behaviour, 1% for Sexual Concerns, and 3% for Dysfunctional Sexual Behaviour). With this combination of variables, CSA was a significant predictor for only Dysfunctional

Sexual Behaviour, $F$ (1, 430) = 4.08, $p < .04$, while perceived stress was a significant predictor for all but one of the ten TSI subscales (Anger, $F$ (1, 430) = 3.56, $p = .06$). Despite the fact that perceived stress demonstrated a strong relationship to psychological symptoms, appraisal of negative life events was significant only for Dysfunctional Sexual Behaviour, $F$ (1, 430) = 5.00, $p = .03$.

After the main effects were accounted for in the regression, the interactions of CSA with stress were significant predictors for three of the ten TSI subscales. CSA x PSS was a significant predictor of Tension Reduction Behaviour, $F$(1, 430) = 6.32, $p < .05$, Dysfunctional Sexual Behaviour, $F$ (1, 430) = 9.59, $p < .05$ and Sexual Concerns, $F$ (1, 430) = 4.31, $p < .01$. The interaction of CSA x NCS was not related to psychological symptoms on the TSI subscales, reinforcing the observation that perceived stress is the best predictor of psychological symptom in this study.

Changes in the amount of variance accounted for in psychological symptoms, according to the present order of entry for the regression, suggests that stress accounts for the greatest amount of variance in psychological symptoms, with significant (but much less robust) effects for childhood sexual abuse history and the interaction between CSA and recent stress (see Table 6).

Post-hoc regression analyses were conducted to examine the potential effect of including demographic variables such as age, or counseling, in the final regression predicting psychological symptoms. Including age as a first step variable, (before CSA, perceived stress score, appraisal of negative life events, and the interactions of CSA with the stress measures) exerted very little effect on the amount of variance in psychological

Table 6

Summary of Hierarchical Regression Analysis for Variables Predicting Psychological Symptoms on the Trauma Symptom Inventory.

| | Standardized regression coefficients (ß) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | AA | AI | DA | D | DIS | DSB | IE | ISR | SC | TRB |
| Step 1 | | | | | | | | | | |
| CSA | - 0.04 | - 0.10* | - 0.21*** | - 0.13** | - 0.07 | - 0.28*** | - 0.25*** | 0.07 | - 0.15*** | - 0.21*** |
| Step 2 | | | | | | | | | | |
| CSA | - 0.04 | - 0.09* | - 0.21*** | - 0.13*** | - 0.07 | - 0.23*** | - 0.24*** | - 0.06 | - 0.15*** | - 0.20*** |
| PSS | 0.48*** | 0.54*** | 0.29*** | 0.57*** | 0.36*** | 0.14** | 0.31*** | 0.56*** | 0.31*** | 0.37*** |
| NCS | - 0.06 | - 0.06 | - 0.18*** | - 0.10** | - 0.09 | - 0.18*** | - 0.22*** | - 0.10** | - 0.13** | - 0.12** |
| Step 3 | | | | | | | | | | |
| CSA | 0.11 | - 0.20 | - 0.08 | - 0.02 | 0.12 | 0.31* | - 0.03 | - 0.11 | 0.21 | 0.19 |
| PSS | 0.82*** | 0.39 | 0.46* | 0.74*** | 0.56* | 0.84*** | 0.61** | 0.43* | 0.78*** | 0.91*** |
| NCS | 0.28 | - 0.05 | - 0.20 | - 0.04 | - 0.25 | - 0.50* | - 0.24 | - 0.24 | - 0.23 | - 0.16 |
| CSA x PSS | - 0.42 | 0.19 | - 0.22 | - 0.22 | - 0.25 | - 0.87** | - 0.37 | 0.16 | - 0.58* | - 0.68** |
| CSA x NCS | - 0.36 | - 0.01 | 0.03 | - 0.06 | 0.17 | 0.34 | 0.02 | 0.15 | - 0.58 | - 0.68 |

Note: AA = Anxious Arousal, AI = Anger/Irritability, DA = Defensive Avoidance, D = Depression, DIS = Dissociation, DSB = Dysfunctional Sexual Behaviour, IE = Intrusive Experiences, ISR = Impaired Self-Reference, SC = Sexual Concerns, TRB = Tension Reduction Behaviour.
* $p < .05$, ** $p < .01$, *** $p < .001$

symptoms accounted for in the original regression equation. For all of the TSI symptom subscales, the inclusion of age into the regression accounted for less than an additional 1% of the variance, with little observable effect upon the significance of the other independent variables other than a decrease in significance for CSA on Dysfunctional Sexual Behaviour ($F = 3.53$, $p < .06$). In some cases (Depression, Dissociation, Tension Reduction Behaviour), the inclusion of age decreased the amount of variance accounted for, but these values did not exceed a drop of 1%.

The addition of counseling to the regression equation generally improved the amount of variance accounted for in psychological symptoms (see Table 7). When previous counseling was included as the first step of the complete regression equation (which included CSA, perceived stress, appraisal of negative life events and the interactions of CSA and the two measures of stress), the amount of variance accounted for was altered by 1.6% to 6%. Variance accounted for in Anxious Arousal, Dysfunctional Sexual Behaviour, and Tension Reduction Behaviour, declined 1-2%, while variance accounted for in Impaired Self-Reference, Intrusive Experiences, Dissociation, Sexual Concerns, and Defensive Avoidance increased 1% -6%. The remaining two subscales, Anger/Irritability and Depression increased in amount of variance accounted for, but by less than 1% (see Table 7). Previous counseling was significantly related to all but one of the ten symptom subscales, Impaired Self-Reference. Additionally, several significant relationships for perceived stress, and the CSA by perceived stress interaction were eliminated when previous counseling was accounted for in the regression equation. However, these consequences of including

previous counseling as a variable in the regression may be a result of a reduction in the total number of subjects (to n = 294), and particularly in the number sexually abused subjects (to n = 49). This statistical effect may also be the result of overlapping variance of CSA and counselling; these ideas will be addressed further in the discussion.

Table 7

Adjusted $R^2$ Values for Three Steps Predicting Psychological Symptoms in a Hierarchical Regression.

| | Step 1* | Step 2** | Step 3*** | Counselling**** |
|---|---|---|---|---|
| TSI Subscale | $R^2$ | $R^2$ | $R^2$ | $R^2$ |
| AA | 0.00 | 0.25 | 0.25 | 0.24 |
| AI | 0.01 | 0.33 | 0.33 | 0.33 |
| DA | 0.04 | 0.19 | 0.19 | 0.25 |
| D | 0.02 | 0.38 | 0.38 | 0.39 |
| DIS | 0.00 | 0.16 | 0.16 | 0.18 |
| DSB | 0.07 | 0.14 | 0.17 | 0.16 |
| IE | 0.06 | 0.25 | 0.25 | 0.30 |
| ISR | 0.00 | 0.36 | 0.36 | 0.36 |
| SC | 0.02 | 0.16 | 0.17 | 0.20 |
| TRB | 0.04 | 0.22 | 0.23 | 0.22 |

Note. * CSA only. ** CSA, perceived stress (PSS), and negative change (NC) only. *** CSA, PSS, NC, CSA x PSS, CSA x NC. **** Previous counselling, CSA, PSS, NC, CSA x PSS, CSA x NC.
AA=Anxious Arousal, AI = Anger/Irritability, DA = Defensive Avoidance, D = Depression, DIS = Dissociation, DSB = Dysfunctional Sexual Behaviour, IE = Intrusive Experiences, ISR = Impaired Self Reference, SC = Sexual Concerns, TRB = Tension Reduction Behaviour.

## Discussion

Consistent with previous research (Briere & Runtz, 1988; Briere & Runtz, 1990; Browne & Finkelhor, 1986; Finkelhor, 1990; Green, 1993; Greenwald et al., 1990; Jehu, 1991; Mullen, Martin, Anderson, Romans, & Herbison, 1996), the hypothesis that women with a history of childhood sexual abuse (CSA) would report experiencing more psychological symptoms than women without this history was supported. The results of this study demonstrate that women with a history of CSA tend to experience unwanted thoughts and memories of their traumatic experience and attempt to avoid these painful thoughts and memories, either cognitively or by avoiding situations associated with them. Additionally, their early sexual trauma has left them with general distress about sexual behaviour, and a tendency for their sexual behaviour to be somewhat problematic or dysfunctional. Women who have experienced CSA often try to cope with unpleasant thoughts, feelings, and memories by using tension reduction behaviour, thus "externalizing distress through suicidality, aggression, inappropriate sexual behaviour, self-mutilation, and activities intended to forestall abandonment or aloneness" (Briere, 1995). Lastly, women with a history of CSA tend to be more depressed than women without this history, perhaps because feelings of exploitation and powerlessness produce shame and guilt, which can have long lasting effects on the individual's self-image and self-esteem (Finkelhor & Browne, 1986; Sgroi, 1982).

Contrary to other research, which found that psychological symptoms were more pronounced for those who were abused by a family member (Courtois, 1979; Roche, 1995; Tsai, Feldman-Summers, & Edgar, 1979), there were no significant differences in

psychological symptoms related to intrafamilial abuse in this study. This finding is surprising given that women who were intrafamilially abused were more likely to have experienced greater duration of abuse, with a greater age difference from the perpetrator, and were more likely to have had additional sexual abuse experiences with at least one other perpetrator. As all of the TSI subscale scores were relatively low, when compared to Briere et al.'s clinical sample (1995), there may have been too little variability in scores to detect such within group differences. Another possible explanation for a lack of observable differences in psychological symptoms between intrafamilial and extrafamilial abuse is that individuals who received counselling tended to have higher TSI scores regardless of whether they were abused or not; thereby further diluting the possible differences in symptoms attributable to abuse characteristics such as intrafamilial abuse.

Firm support was gained for the second hypothesis, that women reporting greater stress would also report experiencing more psychological symptoms, as there was a direct relationship between stress and psychological symptoms. Regardless of abuse status, women who experienced higher stress reported more symptoms and women who reported lower stress reported fewer symptoms. This relationship confirms previous research (Brimaher et al., 1994, Flannery, 1986; Frank et al., 1994; Nezu, 1986; Vinokur & Selzer, 1975; Walker & Greene, 1991) which found a similar relationship between stress and symptoms, regardless of whether stress was based on the subject's appraisal of recent life events, or their perceived stress in general.

The importance of stress as related to psychological symptoms was confirmed, as

results demonstrated that stress was a better predictor of psychological symptoms than was childhood sexual abuse. Compared to any other single variable in this study, perceived stress accounted for the most variance in psychological symptoms. Interestingly, perceived stress was a significant predictor of symptoms thought to be related to sexual trauma (e.g., sexual concerns, dysfunctional sexual behaviour, intrusive experiences) as well as for more general symptoms previously linked to stress (e.g., anxiety, depression). This finding was also surprising because of the comparably small amount of variance accounted for by childhood sexual abuse alone, and because the measure of symptoms used in this study is thought to be particularly sensitive to symptoms resulting from a traumatic experience (Briere, 1995). These results demonstrate the value of multiple regression techniques in studies of psychological symptoms, because Multivariate Analysis of Covariance may indicate highly significant results for sexual abuse groups, but the actual amount of variance in symptoms accounted for by this single variable may be small.

Although both perceived stress and appraisals of negative life events were included in this study, perceived stress proved to be the most valuable measure of stress in this sample. Thus, while perceived stress maintained a high degree of significance, negative change was not as robust a predictor of psychological symptoms. It appears that there is very little variation in the life events of the students in this sample, which may have reduced the utility of using the Life Experiences Survey with university students. Differences in life experiences were likely limited due to the fact that students in this sample were relatively similar in age, marital status, and socioeconomic status. Open

ended responses from students also indicated that school workload was cited as being the primary reason for the stress students were experiencing; this one domain appeared to overshadow other categories of life events. The observation that school workload was viewed as the primary source of stress was further supported by the finding that students who participated in the study during the first semester of the school year reported experiencing greater stress than those who participated in the second semester. These results suggest that subsequent research on stress, using a student population, should take into account the semester of participation and acknowledge that the individual's school workload (as well as life events) could have an impact on perceived stress scores. This finding also emphasizes the value of perceived stress as a measures of stress because it takes into account the individual's appraisal of experienced stress regardless of recent life events.

The third hypothesis, that women with a history of childhood sexual abuse would report experiencing greater stress than non abused women was partially supported in this study. In general, women who were sexually abused as children experienced a similar amount of stress as women who had not been sexually abused as children. Likewise, women who experienced intrafamilial abuse experienced a similar amount of stress as women who had experienced extrafamilial abuse. However, additional analyses of sexual abuse characteristics and stress determined that the women who experienced longer-term sexual abuse did indeed have higher stress scores than women with a shorter duration of abuse. In particular, women who experienced sexual abuse for six years or longer had significantly higher stress scores. This finding is particularly salient, given

that only 9% of the sample had abuse experiences lasting six years or more. Although the researcher expected that most women who had experienced childhood sexual abuse would exhibit a higher degree of stress than non-abused women, it is evident that this may only be the case for the most severe cases of abuse which continued over an extended period of time. This finding does not, however, negate the influence that the severity, and degree of threat involved in the abuse experience can have on an individual's experience of stress and of psychological distress. Although severity of the abuse experience, measured on the basis of type and frequency of sexual abuse acts, did not prove to be a significant predictor of stress in this study, it is acknowledged that a single severe act of abuse can result in a significant amount of distress regardless of the duration of the abuse experience. The forced choice answer responses in this study perhaps did not allow abuse survivors to describe their experience fully, thus providing a limited definition of severity of sexual abuse.

With regard to the relationship between extended duration of abuse and percieved stress, there are several possible explanations for these results. Perhaps the duration of the sexual abuse experience serves to create a lower "threshold" of tolerance to stress. Thus, individuals with a lengthy abuse experience taking place over the course of their development, may prove to be more vulnerable to stress. According to a curvilinear hypothesis of stress (Ruch et al., 1980), some individuals who survive and adapt to short-term abuse experiences, or less severe abuse experiences, may develop resiliency to stress later experienced in adulthood. However, those with the more severe abuse experiences may experience the opposite effect, and develop a vulnerability to stress in

adulthood. Although characteristics of CSA history (duration, severity, etc.) were plotted to assess curvilinear effects on stress, it was evident that the effects were more linear than curvilinear in nature. However, given that this sample was relatively well functioning, and that few individuals suffered abuse of long duration, a study using a community or clinical sample may be more appropriate to examine this possible explanation.

One other possible explanation for this outcome is that the early trauma (CSA) exerts its effect on stress in adulthood in an indirect, rather than a direct manner. For the sexually abused subjects in this study, their history of abuse in childhood alone did not predispose them to greater stress in adulthood. Certainly duration of the abuse has proved to be an important factor in the relationship between CSA and subsequent stress. Other factors of importance, which were not measured in this study, may have a part in this relationship. For example, the presence of a supportive adult during the individual's childhood, as well as responses of parents to disclosure of sexual abuse have also proved to be important factors in psychological adjustment to the trauma (Everill & Waller, 1995; Kendall-Tackett, Williams, & Finkelhor, 1993; Ligezinska, Firestone, Manion, McIntyre, Ensom, & Wells, 1996; Waller & Ruddock, 1993 ), and may be equally important to the development of vulnerability (or resiliency) to stress in adulthood.

Another factor which may be an important link in the relationship between history of sexual abuse and stress is self-blame for the abuse experience. In an attempt to ascribe meaning to their experiences children suffering from sexual abuse may develop beliefs that they were responsible for the abuse (Lyons, 1991). Children sometimes feel responsible for participating in the abuse, failing to recognize the experience as abuse,

failing to avoid, control, or seek help to end the abuse, failing to protect one's self or siblings from abuse; or they might feel responsible because of pleasure or advantages gained from the abuse, and responsible for familial consequences to disclosure of the abuse (Celano, 1992).

Anecdotal responses in this study suggest that there may be a link between self-blame (characterological self-blame and "self-deprecatory attributions") for the abuse experience and subsequent reports of stress. When individuals were asked to respond to an open-ended question about the amount of current stress directly attributed to their sexual abuse experience, self-blame and guilt were common themes. For example, one individual, who received a perceived stress score greater than one standard deviation above the mean (score = 45; $\underline{M}$ = 26.37), reported "I feel worthless and like I deserved it and that colours my life in many ways". Another individual, who received a perceived stress score well below the mean (score = 21; $\underline{M}$ = 26.37), reported
" Occasionally there is sadness and some shame that my father would resort to such measures to satisfy his sexual needs". It is clear that the first individual ascribed a profound amount of guilt and self-blame for the sexual abuse -- but also, perhaps, for all of the negative events in her life as well. In contrast, the latter individual clearly understands that her father was responsible for the abuse, and even though she recognizes some feelings of shame over the experience, the shame is not internalized but, rather, associated with her father's behaviour.

Participants' anecdotal information related to self-blame and attribution for the abuse indicate that attribution research could provide information on the link between

stress and childhood sexual abuse. Learned helplessness research has postulated that there are three dimensions related to attributional style: internal/external, global/specific, and stable/unstable (Abramson, Seligman, & Teasdale, 1978). Within this framework, Abramson et al. (1978) proposed that "self-deprecatory attributions" occur when an individual attributes positive events to external, specific, unstable causes and negative events to internal, global, stable causes. For example, an individual with this attributional style might attribute the occurrence of a positive event (e.g., work promotion) to "luck", while attributing the occurrence of a negative event (e.g., an assault) to personal characteristics. Other researchers have proposed that characterological self-blame (as opposed to behavioural self-blame) is related to negative adjustment to or "outcome" of trauma (Janoff-Bulman, 1992; Meyer & Taylor, 1986). Among other things, this type of attributional style has been related to negative affect in sexually abused children and adolescents (Wolfe, Gentile, & Wolfe, 1989). Additionally, McEvoy & Daniluk (1995) have determined that a sense of shame and guilt is a common theme in adult survivors of childhood sexual abuse. Recent research has indicated that women who blamed themselves for the abuse exhibited poorer "adjustment" and more psychological symptoms than other women with a history of childhood sexual abuse (Gold, 1986; Hoagwood, 1990; Spaccarelli & Kim, 1995; Wyatt & Newcomb, 1990). An attributional style of self-deprecatory or characterological self-blame may be created as a result of the individual's attempt to understand the abuse experience and possible self-blame for the traumatic experience which she was unable to stop.

The stress that women report experiencing as a direct result of their abuse also

indicates that there may be a more complex relationship between history of childhood sexual abuse and stress in adulthood. There was no relationship between the amount of abuse-related stress and the amount of general stress experienced by women in this study. In an open-ended question on stress attributed to childhood sexual abuse alone, many individuals assigned little responsibility for their stress to their abuse experience. However, the responses of these women varied greatly, and many responded by mentioning coping strategies or indicated that they had already experienced some recovery from their abuse experience. Many women reported using avoidance strategies to deal with their abuse, such as "tried to repress it", "try not to let it bother me", or framed the event as something which happened in the past and that no longer affects their life "he has passed away, and it's all in the past". Other responses indicate that some women may have already addressed the effect of the sexual abuse on their lives, and have perhaps already resolved their feelings and thoughts about their experiences; for example, one woman reported "It was a long time ago and I put it behind me". As many women with a history of childhood sexual abuse had previous counselling, it is possible that many abused women have already addressed their painful memories, thoughts, and feelings related to their abuse experience; modifying both their expression of symptoms and their perception of the effects of the abuse. Indeed, it is said that for effective therapy with adult survivors of sexual abuse it is essential to directly address painful memories of the abuse and the accompanying affect, which in part involves addressing self-blame and reframing the experience (Briere, 1992; Olio & Cornell, 1993).

The fourth hypothesis was partially supported, as the interaction between a

history of childhood sexual abuse and recent stress was a significant predictor of sexual concerns, dysfunctional sexual behaviour, and tension reduction behaviour. Although these effects were statistically significant, the interaction of these two variables made little difference to the prediction of psychological symptoms. Moreover, these interactions were observed for only three of the ten symptom subscales. However, it is interesting that the three symptom subscales were most characteristic of the individual's sexual abuse experience and responses to this traumatic sexual experience. It may be possible that recent stress intensifies the abused individual's sexual concerns and compels her to act out sexually (in a dysfunctional way) or to reduce tension by acting out in a harmful or aggressive manner. More research is needed to make such conclusions, for although this support for the vulnerability theory is statistically significant, the actual differences observed in this study are not large enough to be meaningful.

This study indicates that the trauma of childhood sexual abuse and recent stress in adulthood independently contribute to self-reports of psychological symptoms. As mentioned previously there was a small degree of support for the vulnerability hypothesis, that early trauma predisposes individuals to subsequent stress in adulthood. Support for this conclusion was evidenced by the significance of the interaction of these two variables in predicting symptoms, and the recognition that individuals who suffered long-term abuse reported experiencing higher degrees of perceived stress than other women. However, the multiple regression analyses of this study support the notion that childhood traumatic stress and recent stress may be relatively additive, as both variables

contribute to reports of psychological symptoms. Additionally, perceived stress was by far the most significant predictor of psychological symptoms, outweighing both the contributions of an appraisal of negative life events and childhood sexual abuse.

This study of the mutual effects of childhood sexual abuse and recent stress to psychological symptoms clearly indicates that perceived stress is an important factor in studies of psychological symptoms-- even when the symptoms are representative of traumatic experiences, rather than general symptomatology. This study also hints at a possible relationship between history of childhood sexual abuse and experienced stress in adulthood, but only for those individuals with extensive periods of abuse. Given that this sample provided little variability in psychological symptoms and an overall higher degree of stress compared to other samples (Cohen et al., 1983), a more diverse sample may help to reveal significant differences only suggested by this study. Additionally, the use of a university student sample to test the vulnerability hypothesis of stress may have provided too little variability in experiences and overall stress to detect more meaningful differences. Given these limitations, future research in this area would greatly benefit from using a large community sample to test similar hypotheses. This kind of sample would allow for sufficient variability in both life experiences, sexual abuse experiences, current stressors, and psychological functioning to adequately test theories of vulnerability (and resilience).

Additionally, statistical analysis employing structural equation modelling could assess the contribution of factors related to the individual (e.g., self-esteem, autonomy, family support, etc.), her sexual abuse experience (e.g., family reaction to disclosure,

self-blame, etc.) and recent stress (recent life events, perceived stress, etc.) to understand how both vulnerability and resiliency factors contribute to the psychological adjustment of abuse survivors. It is also recognized that a longitudinal study would be most beneficial in understanding the inter-relationships of these important vulnerability/resiliency factors in addition to revealing the *process* of adjustment to childhood sexual abuse.

While the results of this study determined that there is a relationship between stress and psychological symptoms, between childhood sexual abuse and psychological symptoms, and between duration of abuse and stress, a causal relationship between these variables can not be assumed. Stronger arguments for causation could be made on the basis of in depth longitudinal studies of childhood sexual abuse. Ideally, such a study would examine the many intervening or moderating factors which could predispose individuals to greater vulnerability, or greater resilience, to stress and to psychological symptoms.

Another limitation of this study is the retrospective nature of the research. This methodology has been criticized for the possibility that reported symptoms may impact individual's reports of their abuse experience and the fact that abuse-related symptomology may vary and change as a function of time and the individual's development (Briere, 1992; Friedrich & Reams, 1987). However, the time and financial investment into prospective or longitudinal studies has created a reliance upon retrospective research to improve our understanding of the long-term sequelae of childhood sexual abuse. Regardless of their limitations, retrospective research on the

long-term effects of childhood sexual abuse have inundated psychological research, particularly in the past decade (Olio & Cornell, 1993), testifying to the importance of this research.

The findings of this study have certain implications for therapeutic interventions. First, given the prevalence of childhood sexual abuse, it is recommended that therapists query their clients about any unwanted sexual experiences they might have had as children, as a routine process of adult assessment in individual therapy. Since it is clear that many women who report experiencing stress also report psychological symptoms, it is likely that recent stress may be the factor initiating therapeutic intervention. However, while there may be an alternative reason for the client seeking treatment, the effects of CSA may be exerting an effect either on the genesis or the maintenance of her symptoms.

Likewise, when clients initiate therapy specifically to resolve their childhood trauma the therapist must acknowledge the impact that recent stressors and perceived stress exert on the individual's psychological health. Therapists should routinely question their clients about any recent stressful events that the individual has experienced and query the amount of psychological stress that she may currently experience. This protocol may be particularly applied to university students in counselling, as school events (e.g., failing an exam), workload, and the timing of major school-related life events (begining of the school year) have proved to be salient predictors of psychological distress in this study.

For many sexual abuse survivors, developing strategies to cope with recent stress could serve to decrease some expressions of psychological distress prior to (or in addition

to) addressing specific issues relating to their sexual abuse experience. Additionally, an initial focus on recent stressors and ways to cope with stress may help survivors to successfully cope with their day to day stressors. This process may help to augment the individual's sense of achievement and confidence in dealing with life stressors. Consequently, this process may also assist in developing the strong therapeutic bond which is said to be the critical factor in successful treatment of women suffering from the long-term effects of childhood sexual abuse (Briere, 1992; Olio & Cornell, 1993).

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# Appendix A

## Basic Rights and Privileges of Volunteer Research Participants[2]

Any person who participates in research projects conducted by the Department of Psychology at the University of Victoria is entitled to the following rights and priveleges. Please read carefully the following information and ask the experimenter any questions you like.

1. You may withdraw from this study at any time and are not required to explain your reasons for doing so. Your participation or non-participation in the research has no effect upon your grades or standing in the University, apart from any course credit specifically associated with participation.

2. Prior to beginning your activity in the research project, you should be informed:

   (a) about the general nature of your activity and how long it will take,

   (b) about any equipment to be used and any risks involved,

   (c) about what aspects of your behaviour will be observed and recorded and how the observation is to be done,

   (d) that anonymity and confidentiality of any recorded behaviour is guaranteed, and the means of maintaining anonymity and confidentiality should be explained.

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[2] Standardized research participation form, Department of Psychology, University of Victoria.

3. Once you have finished the project you should be:

   (a) given the opportunity to erase any or all records pertaining to your participation in the project,

   (b) asked for consent to make public any anonymous records such as audio or video recordings,

   (c) offered a complete explanation of the purpose of the research, either orally or in writing, and given the opportunity to ask questions about the project.

4. If you have any complaints, please report them to the Department of Psychology.

Appendix B

Informed Consent Statement

I understand that this research project is a study of women's health concerns, and as such, will inquire about a variety of physical and psychological health concerns that many women may have. My participation involves answering questions on a self-report questionnaire. I am aware that some of the questions may be personal in nature, and include questions about sexual and medical history.

I understand that my participation is completely voluntary, and that I may withdraw from the study at any time, without explanation and without penalty. I am also aware that if I do withdraw from the study, I will still obtain my participation credits.

I have been assured that my responses are completely anonymous, as my name can not be linked to my responses in any way. My responses will be identified by number only, and this coded number on the questionnaire cannot identify me in any way. I have been informed not to put my name on any materials. I have also been asked to provide this consent form to the researcher prior to filling out the questionnaires, so the consent form will not be associated with the responses I provide. I have been told that all research materials will be kept in a secure/locked room, and that only members of the research team will have access to this information.

Having been informed of the nature of this study and the extent of my participation, and having been assured of my anonymity and the confidentiality of my responses, I willingly consent to participate in this study as noted by my signature at the bottom of this page.

Signature: _____

Date: _____

Appendix C

Purpose of the Study

Dear Participant:

We would like to thank-you for participating in this study of women's health. your responses are greatly appreciated as we realize that many of these questions were personal and perhaps not easy to answer. Please be assured that your responses will remain both anonymous and confidential. As we are only interested in responses from large groups of people (rather than any one individual), your responses will only be analyzed in combination with all other subjects' responses.

One of the main purposes of this study is to develop a checklist of women's health concerns. While a number of health questionnaires exist, many do not cover the types of concerns that many women may have about their health. We are particularly interested in the types of health concerns university women are dealing with and how this relates to their use of medical services. We hope that the resultant "Women's Health Inventory" will be useful in the assessment of women's health needs and concerns in a variety of situations.

In addition to the development of the "Women's Health Inventory", we are very interested in the relationship between a number of life experiences and women's current health status and use of medical services. In particular, we are interested in the role of both current and past life stress as potential influences on present physical and psychological health. There is some evidence to suggest that early life stress (such as some types of unwanted early sexual experiences and early experiences with physical aggression) may be associated with reports of certain health concerns (such as PMS and other gynecological problems). Similarly, current day-to-day stressors may also contribute to greater health concerns and use of medical services. These are the main questions that the research that you have participated in will be exploring. While not every question about the link between life stress and health can be answered by this

study, we hope to begin to address some of the issues that may be of greatest concern to women.

We appreciate your participation in this study, and hope that this has been an educational experience for you. If you have any questions or concerns about this study, please contact Dr. Marsha Runtz at 721-7546. She will be happy to respond to any questions or concerns that you may have about this research. Once the study has been completed, a short summary of the final results will be made available by the researcher.

If any of the questions you answered here made you uncomfortable in any way, or if participating in this study has brought up issues that are distressing for you, some resources which might be of assistance are provided below. Further referrals can be obtained either from the agencies listed here, or from the researchers.

**Need Crisis and Referral Line**

**386-6323**

(anonymous and confidential telephone counseling by trained volunteers)

**University of Victoria Counseling Services**

**721-8341**

(a wide range of services; free to all UVic students)

Appendix D

Demographic Information

1. What is your age?_____

2. What year of university are you currently in?_____

3. What is your declared or intended major?_____

4. What is your marital/dating status?

| | | | |
|---|---|---|---|
| single and not dating | ____ | married | ____ |
| single and dating more than one person | ____ | separated | ____ |
| single but in a committed relationship | ____ | divorced | ____ |
| living as married | ____ | widowed | ____ |

5. What kind of family describes the one you grew up in, for most of the time, *prior to age 18?*

| | |
|---|---|
| both biological parents | ____ |
| both adoptive parents | ____ |
| step family | ____ |
| single parent family | ____ |
| foster parent family | ____ |
| extended family as primary caregivers (e.g. grandparent) | ____ |

6. What was your family of origin's estimated yearly income when you were 18?

| | | | |
|---|---|---|---|
| Less than $15,000 | ____ | $45,000 - $59,999 | ____ |
| $15,000 - $29,999 | ____ | $60,000 - $74,999 | ____ |
| $30,000 - $44,999 | ____ | $75,000 or above | ____ |

7. How many siblings do you have?

| | | | | |
|---|---|---|---|---|
| fully biological | brother(s) | ____ | sister(s) | ____ |
| adopted | brother(s) | ____ | sister(s) | ____ |
| half | brother(s) | ____ | sister(s) | ____ |
| step | brother(s) | ____ | sister(s) | ____ |

8. In your family, what birth-order position do you occupy?

only child ____
oldest child ____
middle child ____
youngest child ____

9. Have you ever seen a counsellor or therapist for any concern or problem that you may have experienced? **YES**_____ **NO**_____

What was your main reason for seeing a counsellor or therapist?_____

_____

Appendix E

TSI

Please indicate how often each of the following experiences have happened to you ***in the last six months***, using the following scale:

| **0** | **1** | **2** | **3** |
|---|---|---|---|
| **NEVER** | | | **OFTEN** |

1) Heart pounding or beating too fast _____

2) Nightmares or bad dreams _____

3) Trying to forget abut a bad time in your life _____

4) Unwanted sexual thoughts _____

5) Irritability _____

6) Stopping yourself from thinking about the past _____

7) Getting angry about something that wasn't very important _____

8) Feeling empty inside _____

9) Sadness _____

10) "Flashbacks" (sudden memories or images of upsetting things) _____

11) Not being satisfied with your sex life _____

12) Not being able to say "no" when someone wanted to have sex with you, but you didn't want sex _____

13) Feeling like you were outside of your body _____

14) Lower back pain _____

15) Sudden disturbing memories when you were not expecting them _____

16) Wanting to cry _____

17) Bad feelings about sex _____

18) Not feeling happy _____

19) Becoming angry for little or no reason _____

20) Feeling like you don't know who you really are _____

21) Feeling depressed _____

22) Being bothered by memories _____

23) Having sex with someone you hardly knew _____

24) Thoughts or fantasies about hurting someone _____

25) Your mind going blank _____

26) Fainting _____

27) Not enjoying things you used to enjoy _____

28) Periods of trembling or shaking _____

29) Pushing painful memories out of your mind _____

30) Not understanding why you did something _____

31) Threatening or attempting suicide _____

32) Feeling like you were watching yourself from far away _____

33) Feeling guilty _____

34) Feeling tense or "on edge" _____

35) Getting into trouble because of sex _____

36) Not feeling like your real self _____

37) Wishing you were dead _____

38) Worrying about things _____

39) Not being sure of what you want in life _____

40) Feeling like you weren't really yourself _____

41) Bad thoughts or feelings during sex _____

42) Being easily annoyed by other people _____

43) Starting arguments or picking fights to get your anger out _____

44) Suddenly feeling afraid for little or no reason _____

45) Having sex or being sexual to keep from feeling lonely or sad _____

46) Getting angry when you didn't want to _____

47) Not being able to feel your emotions _____

48) Confusion about your sexual feelings _____

49) Using drugs other than marijuana _____

50) Feeling jumpy _____

51) Absent-mindedness _____

52) Feeling paralyzed for minutes at a time _____

53) Needing other people to tell you what to do _____

54) Yelling or telling people off when you felt you shouldn't have _____

55) Flirting or "coming on" to someone to get attention _____

56) Sexual thoughts or feelings when you thought you shouldn't have them _____

57) Intentionally hurting yourself (for example, by scratching, cutting, or burning, even though you weren't trying to commit suicide _____

58) Aches and pains _____

59) Having a feeling that something bad was about to happen _____

60) Sexual fantasies about being dominated or overpowered _____

61) High anxiety _____

62) Problems in your sexual relations with another person _____

63) Wishing you had more money _____

64) Nervousness _____

65) Getting confused about what you thought or believed _____

66) Avoiding things that you knew would upset you _____

67) Feeling tired _____

68) Feeling mad or angry inside _____

69) Getting into trouble because of your drinking _____

70) Staying away from certain people or places because they reminded you of something _____

71) One side of your body going numb _____

72) Wishing you could stop thinking about sex _____

73) Suddenly remembering something upsetting from your past _____

74) Wanting to hit someone or something _____

75) Feeling hopeless _____

76) Hearing someone talk to you who wasn't really there _____

77) Suddenly being reminded of something bad _____

78) Getting into relationships that were bad for you _____

79) Sudden feelings of anger _____

80) Trying to block out certain memories _____

81) Sexual problems _____

82) Using sex to feel powerful or important _____

83) Violent dreams _____

84) Acting "sexy" even though you didn't want sex _____

85) Just for a moment, seeing or hearing something upsetting that happened earlier in your life _____

86) Using sex to get love or attention _____

87) Frightening or upsetting thoughts popping into your mind _____

88) Getting your own feelings mixed up with someone else's _____

89) Wanting to have sex with someone you knew was bad for you _____

90) Feeling down and unhappy _____

91) Feeling ashamed about your sexual feelings or behaviour _____

92) Trying to keep from being alone _____

93) Losing your sense of taste _____

94) Trouble paying attention to people _____

95) Having the same (or nearly the same) bad dream over and over again _____

96) Your feelings or thoughts changing when you were with other people _____

97) Having sex that had to be kept a secret from other people _____

98) Worrying that someone is trying to steal your ideas _____

99) Taking drugs or alcohol to stop your feelings _____

100) Not letting yourself feel bad about the past _____

101) Feeling like things weren't real _____

102) Feeling like you were in a dream _____

103) Not eating or sleeping for two or more days _____

104) Drinking or taking drugs to stop certain thoughts or memories _____

105) Trying not to have any feelings about something that once hurt you _____

106) Painful or disturbing memories _____

107) Daydreaming _____

108) Trying not to think or talk about things in your life that were painful _____

109) Feeling like life wasn't worth living _____

110) Being startled or frightened by sudden noises _____

111) Seeing people from the spirit world _____

112) Trouble controlling your temper _____

113) Being easily influenced by others _____

114) Wishing you didn't have any sexual feelings _____

115) Wanting to set fire to a public building _____

116) Feeling afraid you might die or be injured _____

117) Feeling so depressed that you avoided people _____

118) Thinking that someone was reading your mind _____

119) Feeling worthless _____

Appendix F

Life Experiences Survey

Listed below are a number of events which sometimes bring about change in the lives of those who experience them. Please identify those events which you have experienced ***in the past year***, by placing a check mark on the corresponding line. for each item checked, please also indicate the extent to which you viewed the event as having either a positive or negative impact on your life, by circling an appropriate number. A rating of -3 would indicate an extremely negative impact. A rating of 0 suggests no impact, neither positive or negative. A rating of +3 would indicate an extremely positive impact. *If you have not experienced an event in the past year, (even if you experienced that event more than a year ago), leave that item blank.*

| **extremely negative -3** | **moderately negative -2** | **somewhat negative -1** | **no impact 0** | **slightly positive +1** | | **moderately positive +2** | | **extremely positive +3** | |
|---|---|---|---|---|---|---|---|---|---|
| 1. Marriage | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 2. Detention in jail or comparable institution | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 3. Death of a spouse | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 4. Death of a close family member | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 5. Foreclosure on mortgage or loan | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 6. Death of a close friend | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 7. Outstanding personal achievement | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 8. Minor law violations (traffic tickets, disturbing the peace etc.) | | | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9. Pregnancy | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 10. Changed work situation (different work responsibility, major change in working conditions, working hours, etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 11. New job | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 12. Serious illness or injury of close family member | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 13. Sexual difficulties | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 14. Trouble with employer (in danger of losing job, being suspended, etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 15. Trouble with in-laws | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 16. Major change in financial status (a lot better off) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 17. Major change in financial status (a lot worse off) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 18. Major change in closeness of family (increased closeness) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 19. major change in closeness of family (decreased closeness) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 20. Gaining a new family member (through birth, family moving, etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 21. Change of residence | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 22. Marital separation from mate (due to conflict) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 23. Major change in church activities (increased or decreased attendance) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24. Marital reconciliation with mate | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 25. Major change in number of arguments with spouse (a lot more) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 26. Major change in number of arguments with spouse (a lot less) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 27. Change in spouse's work (loss of job beginning new job, retirement etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 28. Major change in type and/or amount of recreation | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 29. Borrowing more than $10,000 (buying home, business, student loan, etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 30. Borrowing less than $10,000 (buying car, getting school loan etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 31. Being fired from a job | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 32. Having an abortion | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 33. Major personal illness or injury | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 34. Major change in living conditions of family (building house, remodeling, deteriorating neighborhood etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 35. Divorce | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 36. Serious injury or illness of close friend | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 37. Retirement from work | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 38. Son or daughter leaving home | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 39. Ending of formal schooling | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 40. Separation from spouse (due to work, travel, etc.) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 41. Engagement | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 42. Breaking up with romantic partner | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 43. Leaving home for the first time | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 44. Reconciliation with romantic partner | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 45. Beginning a new school experience at a higher academic level | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 46. Changing to a new school, at the same academic level | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 47. Academic probation | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 48. Being dismissed from dormitory or other residence | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 49. Failing an important exam | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 50. Changing a major | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 51. Failing a course | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 52. Dropping a course | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 53. Joining a fraternity/sorority | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 54. Financial problems concerning school (in danger of not having sufficient money to continue) | _____ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |

Appendix G

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts *during the last month*. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate. For each question, choose from the following alternatives:

**0. never**
**1. almost never**
**2. sometimes**
**3. fairly often**
**4. very often**

1. In the last month, how often have you been upset because of something that happened unexpectedly? _____

2. In the last month, how often have you felt that you were unable to control the important things in your life? _____

3. In the last month, how often have you felt nervous and "stressed"? _____

4. In the past month, how often have you dealt successfully with irritating life hassles? _____

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life? _____

6. In the last month, how often have you felt confident about your ability to handle your personal problems? _____

7. In the last month, how often have you found that things were going your way? _____

8. In the last month, how often have you found that you could not cope with all the things that you had to do? _____

9. In the last month, how often have you been able to control irritations in your life? _____

10. In the last month, how often have you felt that you were on top of things? _____

11. In the last month, how often have you been angered because of things that happened that were outside of your control? _____

12. In the last month, how often have you found yourself thinking about things that you have to accomplish? _____

13. In the last month, how often have you been able to control the way you spend your time? _____

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? _____

15. How much stress, if any, do you feel you currently experience? _____

16. In your opinion, what is responsible for the stress you currently experience?

_____

_____

# Appendix H

Childhood Experiences: Section B

It is now generally accepted that many people have sexual experiences as children. Some of these experiences are with friends or acquaintances, and some are with family members or relatives. Sometimes these experiences are upsetting, and sometimes they are not. Although little is often known about these early sexual experiences, they are a very important part of one's medical and personal history. Please think about any sexual experiences you might have had as a child, and answer the following questions.

1. When you were a child (under 18 years of age) were you ever pressured into forced contact with the sexual part of your body, with the sexual part of someone else's body, (or were too young to understand something sexual had happened to you)?

**YES** _____ **NO** _____

**IF YOU HAVE ANSWERED NO TO THIS QUESTION, PLEASE GO TO PAGE 14.**
**IF YOU HAVE ANSWERED YES TO THIS QUESTION, PLEASE CONTINUE.**

2. As a child, with how many different people had you experienced events like those described in question 1?

_____

*PLEASE CHOOSE THE ONE EXPERIENCE THAT SEEMS MOST IMPORTANT TO YOU NOW, AND ANSWER THE FOLLOWING QUESTIONS ABOUT IT.*

3. Who was the person involved in that particular experience? (Check one only)

| | | | **MALE** | **FEMALE** |
|---|---|---|---|---|
| mother | _____ | school counselor | _____ | _____ |
| stepmother | _____ | school teacher | _____ | _____ |
| father | _____ | coach | _____ | _____ |
| stepfather | _____ | baby-sitter | _____ | _____ |
| sister | _____ | neighbor | _____ | _____ |
| brother | _____ | friend (peer) | _____ | _____ |
| aunt | _____ | friend of family (adult) | _____ | _____ |
| uncle | _____ | doctor or dentist | _____ | _____ |
| grandmother | _____ | boyfriend | _____ | _____ |
| grandfather | _____ | stranger | _____ | _____ |
| cousin | _____ | other:_____ | _____ | _____ |

4. What did the experience involve? (To answer, please circle the appropriate letters):

| A | B | C | D | E | N/A |
|---|---|---|---|---|---|
| once or twice | 3-5 times | 6-10 times | 11-20 times | more than 20 times | not applicable |

| | | | | | | |
|---|---|---|---|---|---|---|
| someone touching/fondling the sexual parts of your body | A | B | C | D | E | N/A |
| someone making you touch/fondle the sexual parts of their body | A | B | C | D | E | N/A |
| attempted vaginal, oral, or anal intercourse | A | B | C | D | E | N/A |
| intercourse (vaginal, oral, or anal) | A | B | C | D | E | N/A |
| sexual contact with more than 1 person at the same time | A | B | C | D | E | N/A |
| other (specify) _____ | A | B | C | D | E | N/A |

5. The first time this happened, about how old was the person involved?_____

6. How old were you *the first time* t his happened? _____

7. How old were you *the last time* this happened?_____

8. Did you tell anyone about the experiences mentioned above? **YES** _____ **NO** _____

9. If you have told someone about these experiences, at what age did you tell for the very first time?

_____

10. If you have told someone about these experiences, who did you tell? _____

_____

11. If you experienced other similar events (as indicated in question 2 above) please describe briefly:

_____

_____

_____

12. Do you feel that the experience described in questions 3-7 was sexual abuse?

**YES** ___ **NO** ___

13. Do you feel that you were sexually abused as a child?

**YES** ___ **NO** ___

14. Have you ever sought counseling or therapy to help you understand these experiences?

**YES ___ NO ___**

15. How much stress, if any, do you feel you currently experience as a direct result of the experiences you just mentioned? (Please circle the appropriate number and describe briefly):

| 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **None** | **Little** | **Some** | **Much** | **Very Much** | **Extreme** |

_____

_____

_____

_____

Appendix I

Feedback Questions

1.) Did you feel *under stress* at any point *during the study?*_____

_____

If yes, what would you say is the main source of that stress?_____

_____

_____

Do you think these feelings influenced your responses to the questionnaire in any way?

_____

_____

2.) What impact has being a participant in this study had on you (positive and/or negative)?

_____

_____

3.) Other comments:

_____

_____

_____

# VITA

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| | |
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| University of Victoria | 1993 to 1996 |
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Embree, J. M., & Runtz, M. R. (June, 1996). *Childhood Sexual Abuse as a Vulnerability Factor for Stress and Distress*. Paper presented at the American Professional Society on the Abuse of Children Convention, Chicago, Illinois, U.S.A.

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Title of Thesis: The Role of Stress in the Relationship Between Childhood Sexual Abuse and Psychological Symptomatology in University Women.

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Date: July 5, 1996