# Some Mental and Physical Health Outcomes Associated with Sexual Abuse in Childhood: A Community Survey of New Zealand Women

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Angela Faye Jury

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# Abstract

This study examines the long-term impact of childhood sexual abuse (CSA) on mental and physical health functioning, as well as the potentially mediating effects of PTSD symptomatology in a community sample of 964 New Zealand women. In total 63% ($n$ = 606) of women surveyed reported experiencing a traumatic event in their lifetime, of which 16 experienced CSA only and 114 experienced multiple types of traumatic events including CSA. Current mental health functioning was examined using measures of Posttraumatic Stress Disorder (PTSD) symptomatology and psychological distress. Measures of physical health symptoms, chronic health, and health care use were used to assess current physical health functioning. Significantly higher levels of PTSD symptomatology and psychological distress were found among women with histories of CSA in comparison to nontraumatised women. Elevated levels of physical health symptoms were also found in women who had experienced multiple types of traumatic events including CSA in comparison to nontraumatised women. Findings indicate that the main effects of traumatic experiences involving CSA on psychological distress and physical health symptoms were partially mediated by PTSD symptomatology. Among women with histories of CSA, hierarchical multiple regression analyses were used to evaluate the impact of CSA characteristics and contextual factors on current mental and physical health functioning, over and above that explained by relevant demographic and background variables. Among the CSA variables, appraisals of CSA effecting many areas of a survivor's life were associated with higher levels of PTSD symptomatology. Higher levels of chronic health problems were associated with experiences involving physical injury and appraisals of CSA as uncontrollable were related to increased health care use. In conclusion, traumatic experiences involving CSA can negatively impact on the current mental and physical health functioning of women. However, a higher risk of adverse outcomes is associated with several CSA factors. These findings indicate the importance of ensuring the development and provision of services aimed at preventing and ameliorating the impact of exposure; the need to comprehensively assess survivors in both clinical and health care settings; and the utility of further research examining factors which may influence individual variability in adaptation, as well as subsequent trauma exposure.

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The awareness of psychological trauma as a genesis of a variety of psychological disorders has waxed and waned throughout history (van der Kolk, Weisaeth, & van der Hart, 1996). In 1900BC, an ancient Egyptian text made reference to hysterical reactions (Veith, 1965; cited in Wilson & Raphael, 1993). Charcot, Janet, Erichsen, Oppenheim, and Freud were among the first scientific contributors to our current understanding of the sequelae associated with trauma exposure (van der Kolk et al., 1996). Towards the end of the 19th century Freud recognised the trauma of sexual abuse in childhood, however following social and political resistance it was postulated that such experiences were a product of childhood fantasies (van der Kolk et al., 1996). However, during the 20th century, mass victimisations took place around the world that could not be refuted. These included two world wars, the Holocaust, Vietnam, and Cambodia, along with numerous other altercations (McCann, Sahkeim, & Abrahamson, 1988). In their wake, the pain and suffering experienced by survivors was referred to by a variety of terms including "shell shock", "combat fatigue", and "Vietnam veterans syndrome" (Scaer, 2001; McGregor, 2000, Wilson & Raphael, 1993). The "battered women syndrome", "rape trauma syndrome", and "abused child syndrome" also emerged during the late 1970s, in recognition of the victimisation and violence experienced by women and children (Weaver & Clum, 1995; van der Kolk et al., 1996; McGregor, 2000). Following the investigation of these trauma specific syndromes, common patterns of psychological distress across diverse types of traumatic events emerged.

The focus of the current study is on the long-term impact associated with exposure to sexual abuse in childhood among women. The study first examines what is meant by the term childhood sexual abuse (CSA). The number of women exposed to CSA at some time in their lives and the associated impact on current mental and physical health functioning is then considered. The mental health outcomes examined include Posttraumatic Stress Disorder (PTSD) symptomatology and psychological distress. The role of posttraumatic stress in relation to physical health outcomes is also investigated. The physical health outcomes explored include physical health symptoms, chronic health problems, and health care use. The sequelae associated with CSA is compared to that of other types of trauma exposure. Factors influencing individual variability in outcomes among CSA survivors are also considered. Based on these findings a number of hypotheses have been formulated, which will be further examined.

***What is Childhood Sexual Abuse?***

Childhood sexual abuse (CSA) is a term that is used widely in the literature. However, a range of definitions exist, which accordingly have different meanings (Bolen, 2001). These issues are explored further below.

*Definition of Child*

What constitutes a "child" varies considerably depending on social, cultural, and legal factors (Mrazek, 1981; Hartman & Burgess, 1989). Furthermore, childhood is not clearly demarcated from adulthood. While it is currently legal in New Zealand to consent to a sexual relationship at the age of 16, the age criterion for voting is 18 (Parsonson, 2000). For CSA research purposes however, an age criterion of 18 years or less has frequently been used (Bolen & Scannapieco, 1999).

*Range of Sexually Abusive Experiences*

Sexual abuse does not refer to any particular type of sexual behaviour but a range of behaviours. CSA may include fondling a child's genitals, masturbation, oral-genital contact, digit penetration, vaginal and anal intercourse (American Psychological Association, 1999). However, CSA is not restricted to physical contact and may also include noncontact abuse such as exposure, voyeurism, and child pornography (American Psychological Association, 1999). A study of Otago women found that 70% of CSA involved genital contact or more severe abuse, and that 12% of all abuse cases involved sexual intercourse (Anderson, Martin, Mullen, Romans, & Herbison, 1993).

*Perpetrator*

Although the literature indicates that CSA perpetrators are predominantly male (Russell, 1995; Fergusson, Lynskey, & Horwood, 1996), research suggests that as much as 5-15% of sexual abuse is perpetrated by women alone (Smith & Bentovim, 1994; cited in Flood & Wilson, 1997). Furthermore, while there is a common perception that strangers primarily perpetrate CSA, research indicates otherwise. An estimated 70-85% of CSA is perpetrated by either acquaintances or family members (Anderson et al., 1993; Fergusson, Lynskey et al., 1996). However, stepfathers are nearly 10 times more likely to sexually abuse than biological fathers (Anderson et al., 1993; Finkelhor, 1990). Consequently, the term sexual abuse has been used to apply to sexual contact between a child and his/her father, stepfather, mother, stepmother, another older relative, teacher, or baby sitter, as

well as sexual contact at the hands of any adult, known or unknown (Finkelhor, 1987; cited in Gabriels, 1995). This definition includes both extrafamilial and intrafamilial sexual abuse, or incest. However, the above definition ignores adolescent perpetrators. As many as 1 in 4 abusers may be aged 18 years or younger (Anderson et al., 1993; Flood & Wilson, 1997).

*Power*

While some sexual contact between peers is wanted and considered nonexploitive, sexual contact that involves the misuse of power is considered exploitive. In a power relationship the adult or older adolescent perpetrator holds a dominant position in sharp contrast to the child's age, dependency, and subordinate position (Sgroi, Blick, & Porter, 1982; cited in Oates, 1990). It has been suggested that the power difference is often, but not always, reflected in age differences (MacDonald, Lambie, & Simmonds, 1995). An age difference of 5 years or more has frequently been used to define abusive relationships (Russell, 1995). The abuse of power and authority may enable the perpetrator implicitly or directly to coerce the child into sexual compliance (Sgroi et al., 1982; cited in Oates, 1990).

*Coercion & Force*

By manipulating moral standards and acting with the child's trust, the perpetrator may encourage the child to consider the relationship as mutual (Finkelhor, 1990; McGregor, 2000). While some children may consent to the sexual relationship, they cannot give informed consent if they do not fully comprehend the significance of their actions (Schecter & Roberge, 1976; cited in Oates, 1990). In a substantial number of cases however, offenders make use of threats and/or force to obtain the child's cooperation (Kendall-Tackett, Williams, & Finkelhor, 1993; Browne & Finkelhor, 1986).

In summary, what is meant by the term CSA depends on the scope of the definition employed. Furthermore, there is no currently agreed upon definition for research purposes. Consequently, the results and conclusions drawn from studies examining CSA will vary partly as a function of the definition used. With these limitations in mind, the following section examines the number of women who have been exposed to CSA at some time in their life along with other types of trauma exposure.

# 2. Prevalence of CSA & Trauma

### *Prevalence of Traumatic Events*

The prevalence of traumatic events in society is best determined by epidemiological studies, which employ randomly selected community samples. While clinical research has enhanced our understanding of trauma exposure, clinical populations only represent a fraction of people who have been exposed to such events and seek help (Schlenger, Fairbank, Jordan, & Caddell, 1997). The results of epidemiological studies conducted in New Zealand (NZ) and overseas, which have been designed to estimate the percentage of the population who have been exposed to a variety of traumatic events at some time in their lives are presented below in Table 1.

**Table 1**

*Estimates of Lifetime Prevalence of Exposure to Traumatic Events (rate/100)*

| Source | Male | Female |
|---|---|---|
| Breslau et al. (in press)[a] | 92.2 | 87.1 |
| Stein et al. (1997) | 81.3 | 74.2 |
| Flett et al. (1996) | 65.9 | 63.1 |
| Kessler et al. (1995) | 60.7 | 51.2 |
| Resnick et al. (1993) | - | 69.0 |
| Norris (1992) | 73.6 | 64.8 |

*Note.* [a] From *Psychological Trauma* (p. 10), by N. Breslau, 1998, Washington, DC: American Psychiatric Press. Copyright 1998 by the American Psychiatric Press.

Traumatic life events have previously been considered to be outside the range of usual human experience (American Psychiatric Association, 1987). However, these findings clearly challenge that notion. Table 1 indicates that 60-92% of men and 51-87% of women have experienced some type of traumatic event in their life. These findings therefore suggest that there are no substantial gender differences in being exposed to any type of traumatic event. However, Table 2 indicates that there are gender differences associated with exposure to specific types of events.

Table 2 indicates that in comparison to females, males have a higher risk of being exposed to motor vehicle accidents, physical assault, combat, and theft by force. On the other hand, females are more likely to experience an event involving the traumatic death of a

loved one and sexual abuse. Issues pertaining to sexual assault are therefore more pertinent to females.

**Table 2**

*Lifetime Prevalence of Specific Traumatic Events (rate/100)*

| | Flett et al. (1996) | | Breslau et al. (in press) [a] | | Norris (1992) | |
|---|---|---|---|---|---|---|
| Trauma Type | Men | Women | Men | Women | Men | Women |
| Motor Vehicle Accident | 15.5 | 8.7 | 32.8 | 23.5 | 27.9 | 20.1 |
| Physical Assault | 14.4 | 7.8 | 13.1 | 9.8 | 18.7 | 11.7 |
| Combat | 9.7 | 0.2 | 2.8 | 0.0 | 19.3 | 1.8 |
| Theft by Force | 9.6 | 3.4 | 34.0 | 16.4 | 26.2 | 23.8 |
| Disaster | 6.0 | 5.5 | 17.9 | 15.3 | [b] 12.6 | [b] 14.0 |
| Traumatic Death | 19.9 | 28.0 | 61.1 | 59.0 | 30.0 | 30.4 |
| Adult Sex Abuse | 0.7 | 9.5 | 1.1 | 9.4 | 1.3 | 7.3 |
| Child Sex Abuse | 2.6 | 13.5 | - | - | - | - |

*Note.* [a] From *Psychological Trauma* (p. 10), by N. Breslau, 1998, Washington, DC: American Psychiatric Press. Copyright 1998 by the American Psychiatric Press.
[b] Excludes Hurricane Hugo

### *Prevalence of CSA*

While only one study in Table 2 examined the prevalence rate of childhood sexual abuse (CSA), a number of other studies are informative. In a prospective study of a Christchurch birth cohort, Fergusson, Lynskey et al. (1996) found that just over 17% of females and 3% of males had been exposed to CSA before the age of 16. Furthermore, Bolen (2001) reviewed the prevalence rate in North American national surveys and found the mean rate across studies was 9% for males and 19% for females. Collectively, these findings indicate that a large number of women in society have been exposed to CSA.

In summary, the findings of community-based surveys indicate that the vast majority of men and women in society have experienced a traumatic event at some time in their lives. However, there are differences in the types of events that men and women tend to be exposed to. More specifically, women have a higher risk of being sexually assaulted. Furthermore, as many as 1 in 5 women in NZ may have been exposed to sexual abuse in childhood. The psychological impact associated with such exposure is examined in the following section.

## 3. Mental Health Outcomes

***Posttraumatic Stress Disorder***

In 1980 the diagnosis of Posttraumatic Stress Disorder (PTSD) was introduced as an anxiety disorder into the 3rd edition of the Diagnostic and Statistical Manual (DSM) (American Psychiatric Association, 1980). Various trauma specific syndromes such as "shell shock", "combat fatigue", "Vietnam veterans syndrome", "battered women syndrome", "rape trauma syndrome", and "abused child syndrome" were subsumed under the new diagnosis. Consequently, insights gained from examining specific types of traumatic events were integrated under the one conceptual umbrella. In addition, the DSM standardised classification system helps facilitate communication among health professionals by demarcating disorders and their defining features. As outlined below in Table 3, the DSM-IV diagnostic criteria for PTSD specifies stressor, symptomatology, and duration criteria, which must be met in order for a diagnosis to be made.

As a psychological disorder, PTSD is unique. Other than Organic Brain Syndromes and Substance Abuse Disorder, PTSD is the only diagnostic category that includes an etiological variable in its criteria (Jones & Barlow, 1990). Furthermore, the PTSD stressor criterion implies that individual vulnerability plays less of an important role (McFarlane, 1995). On the other hand, when suffering is attributed to individual factors, it is often dismissed and stigmatised (Kleber, Figley, & Gersons, 1995). Therefore, PTSD seems to have been received as a legitimisation and validation of the psychic distress experienced by trauma survivors (van der Kolk & McFarlane, 1996).

## Table 3

*DSM-IV Diagnostic Criteria for Posttraumatic Stress Disorder*

A. The person has been exposed to a traumatic event in which both of the following were present:
   (1) The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.
   (2) The person's response involved intense fear, helplessness, or horror. Note: in children, this may be expressed instead by disorganised or agitated behaviour

B. The traumatic event is persistently reexperienced in one (or more) of the following ways:
   (1) Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: in young children, repetitive play may occur in which themes or aspects of the trauma are expressed
   (2) Recurrent distressing dreams of the event. Note: in children, there may be frightening dreams without recognisable content
   (3) Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). Note: in young children, trauma-specific reenactment may occur.
   (4) Intense psychological distress at exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event
   (5) Physiologic reactivity on exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:
   (1) efforts to avoid thoughts, feelings, or conversations associated with the trauma
   (2) efforts to avoid activities, places, or people that arouse recollections of the trauma
   (3) inability to recall an important aspect of the trauma
   (4) markedly diminished interest or participation in significant activities
   (5) feeling of detachment or estrangement from others
   (6) restricted range of affect (e.g., unable to have loving feelings)
   (7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:
   (1) difficulty falling or staying asleep
   (2) irritability or outbursts of anger
   (3) difficulty concentrating
   (4) hypervigilance
   (5) exaggerated startle response

E. Duration of the disturbance (symptoms in criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

*Specify if:*
**Acute:** if duration of symptoms is less than 3 months
**Chronic:** if duration of symptoms is 3 months or more

*Specify if:*
**With delayed onset:** onset of symptoms at least 6 months after the stressor

*Note.* From *Sypnosis of Psychiatry: Behavioral Sciences/Clinical Psychology* (p.619), by H.I. Kaplan and B.J. Sadock, 1998, New York: Lippincott Williams & Wilkins. 

The conditional risk or probability of developing PTSD following trauma exposure has been examined in several studies. Breslau's (1998) findings from a large-scale community survey are presented below in Table 4.

**Table 4**

*The Conditional Risk of Developing PTSD Following Exposure to Specific Types of Traumatic Events (rate/100)*

| Trauma Type | PTSD |
|---|---|
| Rape | 49.0 |
| Physical Assault | 31.9 |
| Sexual Assault | 23.7 |
| Traumatic Death | 14.3 |
| Theft by Force | 8.0 |
| Disaster | 3.8 |
| Motor Vehicle Accident | 2.3 |
| Any Event | 9.2 |

*Note.* Adapted from *Psychological Trauma* (p. 10), by N. Breslau, 1998, Washington, DC: American Psychiatric Press. Copyright 1998 by the American Psychiatric Press.

These findings indicate that a large number of survivors may develop PTSD following trauma exposure. However, these results also suggest that PTSD is not an inevitable outcome. In other words, a traumatic event is necessary but not sufficient to elicit PTSD. In addition, Table 4 indicates that the risk of developing PTSD varies in relation to the nature of the event experienced. More specifically, there appears to be a relatively high risk of developing PTSD following sexual assault.

Among trauma survivors who develop PTSD, up to half may continue to have the disorder decades later (Green, 1994; Kilpatrick et al., 1989). Following exposure to any type of traumatic event, research indicates that between 6-9% of women will currently meet full PTSD diagnostic criteria (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Norris, 1992). However, the rate associated with sexual assault is almost twice as high. As many as 12-17% of women who have been sexually assaulted at some time in their life may currently have PTSD (Resnick et al., 1993; Kilpatrick, Saunders, Veronen, Best, & Von, 1987; Norris, 1992). However, these findings may underestimate current suffering and distress.

Focusing solely on trauma survivors who meet full PTSD diagnostic criteria ignores the suffering experienced by those who meet partial diagnostic criteria. Stein and colleagues (1997) examined the impact of full and partial PTSD and found that partial PTSD was associated with clinically meaningful levels of functional impairment. Furthermore, Norris (1992) concluded that if the diagnostic criteria for PTSD was slightly less restrictive, then rates of PTSD might double or even triple in some cases. Consequently, it has been argued that PTSD is nothing more than an arbitrary cut off point on a continuous distribution of symptom scores (Kessler, Magee, & Nelson, 1996). Therefore, several studies have employed continuous measures of PTSD symptomatology such as the Mississippi Scale for PTSD to evaluate the impact of trauma exposure (e.g., Vrana & Lauterbach, 1994; Flett, Millar, Long, & MacDonald, 1996). Using this measure, Vrana and Lauterbach (1994) found that sexual assault was associated with higher mean levels of PTSD symptomatology in comparison to other types of trauma exposure.

***Psychological Distress***

PTSD is not the only outcome that has been associated with traumatic event exposure. Trauma exposure has been associated with a range of other psychological disorders and pathological outcomes (van der Kolk & McFarlane, 1996; Green, 1994; Green, 1993b; Breslau, 1998; Boudreaux, Kilpatrick, Resnick, Best, & Saunders, 1998; Joseph, Williams, & Yule, 1997; Lee & Young, 2001; Burnam, et al., 1988). More specifically, Mullen and colleagues (1993) found that women reporting histories of childhood sexual abuse (CSA) had significantly higher levels of psychopathology on a range of measures in comparison to nonabused controls.

A number of studies have also examined the relationship between trauma exposure, PTSD and other forms of psychopathology. Estimates based on large, representative samples suggest that 62-88% of trauma survivors with PTSD have some other form of disorder (Boudreaux et al., 1998). Among crime victims with PTSD, Kilpatrick and colleagues (1987) found that 41% also reported sexual dysfunction, 32% had major depression, 27% had obsessive compulsive disorder, and a further 18% had phobias. Possible explanations for the high rate of comorbidity include overlapping symptom/diagnostic criteria as well as preexisting psychopathology, historic or genetic factors (Green, 1994). However, the prevailing explanation suggests that other forms of psychopathology are caused by, or a reaction to PTSD (Breslau et al., 1998). A recent study by Boudreaux and colleagues

(1998) provides evidence to support the argument that PTSD is the mechanism through which trauma exposure has an impact on other forms of psychopathology. Therefore, as van der Kolk and McFarlane (1996, p. 16) pointed out, "focusing solely on PTSD to describe what victims suffer from does not do justice to the complexity of what actually ails them".

In summary, research indicates that following sexual assault there is a relatively high risk of developing PTSD in comparison to other types of trauma exposure. Furthermore, as many as 12-17% of women who have been sexually assaulted at some time in their lives may currently meet the full diagnostic criteria for PTSD. However, the sequelae associated with CSA may include but is not limited to PTSD. A number of CSA survivors may currently experience elevated levels of PTSD symptomatology as well as other forms of psychopathology and psychological distress. A possible explanation for the high rate of comorbidity found among trauma survivors is that PTSD influences the development of further pathological outcomes. However, further research is required to clarify this relationship among CSA survivors.

## 4. Theories of Posttraumatic Stress

Although a considerable amount of research on trauma exposure has been atheoretical, over the last ten years a variety of theoretical models have been developed. While a number of trauma specific models have also been formulated, models which offer a conceptual framework for a wide variety of traumatising events may be more useful than less inclusive theories (Carlson & Dalenberg, 2001). Generic frameworks help prevent fragmentation of the literature and facilitate comparisons across different types of traumatic events. General models that have contributed to our understanding of the sequelae associated with trauma exposure are summarised below. "These models have their roots in apparently contrasting biological, physiological, cognitive, behavioural, and psychodynamic frameworks" (Black, Newman, Harris-Hendriks, & Mezey, 1997, p. 54).

The learned helplessness model suggests that exposure to an uncontrollable and unpredictable event can result in the development of a generalised belief about future uncontrollability and the futility of action (Lee & Turner, 1997; Joseph et al., 1997). Building on this model, Foa, Zinbarg, and Rothbaum (1992) claim that the fear network developed in response to trauma exposure needs to be integrated within existing memory structures for successful resolution. Likewise, Chemtob and colleagues (1988) focused on the role of fear and postulated that traumatised individuals continue to act in the "survival mode" that was present during the original trauma.

Horowitz (1986) offers an explanation for avoidance and intrusive symptoms and claims that these oscillating phases facilitate the gradual assimilation of traumatic information into existing cognitive schemata. Similarly, Janoff-Bulman (1992) focused on cognitive schemata and suggested that posttraumatic stress results from the shattering of basic assumptions that people hold about themselves and the world. Furthermore, the just world hypothesis formulated by Lerner (1975; cited in Joseph et al., 1997) suggests that people believe that they live in a world where they get what they deserve, and deserve what they get. Consequently, victimisation experiences may convey to the survivor that they are not worthwhile. In addition, prominent behavioural theories explain why reminders of the original event may elicit psychological distress and how avoidance and escape strategies can maintain anxiety symptoms (Lee & Turner, 1997). Finally, Rachman (1980) offers a theoretical framework, which identifies factors thought to promote or impede emotional

processing and claims that posttraumatic stress is indicative of a process that is incomplete.

In summary, the models presented above emphasise somewhat different causal mechanisms and symptoms of posttraumatic stress. While none of the models presented above offers a comprehensive view of the disorder, each model offers some insight. Therefore, the current zeitgeist within the field of traumatic stress studies is to emphasise integrative models, which acknowledge the inadequacy of any single explanatory model (Freedy & Hobfoll, 1995). Several psychosocial models have therefore been developed that combine the explanatory power of various theoretical perspectives (e.g., Joseph et al., 1997; Green, Wilson & Lindy, 1985).

***PTSD Time-Process Framework***

Frederikson, Chamberlain, and Long (1995) have extended the work of Green, Wilson et al. (1985) and developed a Posttraumatic Stress Disorder (PTSD) time-process framework. As illustrated below in Table 5, an input-process-outcome structure has been imposed to consider the pre-stressor, stressor, and post-stressor variables in the context of passing of time (Frederikson, et al., 1995).

While the PTSD time-process framework was originally formulated to guide treatment, it is also useful for research purposes given that it identifies a number of factors that have been shown to influence subsequent adaptation among survivors following trauma exposure. Furthermore, several of these factors are amenable to clinical intervention. The model also acknowledges the complexity of the relationship between the stressor and subsequent adaptation, and offers an explanation for the variability in responses found among survivors exposed to similar stressors. In the following section this model is examined further in relation to childhood sexual abuse.

**Table 5**

*PTSD Time-Process Framework*

| INPUT | PROCESS | | OUTCOME |
|---|---|---|---|
| PRE-STRESSOR<br>Specific Risk Factors | STRESSOR<br>Stressor Characteristics | POST-STRESSOR<br>Internal processes and context in which they occur | |
| PRIOR PSYCHOPATHOLOGY | ENVIRONMENT OF EFFECT<br>Alone or with others in the experience | EXPOSURE TO POSITIVE AND/OR NEGATIVE SOCIAL SUPPORT | |
| BIOLOGICAL VULNERABILITY | TIME SCALE OF STRESSOR<br>Single episode, prolonged or multiple experiences | USE OF POSITIVE SOCIAL NETWORKS | POSITIVE ADJUSTMENT |
| PERSONALITY CHARACTERISTICS<br>Neuroticism<br>Extraversion | STRESSOR DIMENSIONS<br>Threat to life or limb<br>Severe harm or injury<br>Being hurt intentionally<br>Exposure to the grotesque | TALKING ABOUT THE STRESSOR EXPERIENCE<br><br>ASSIMILATING THE EXPERIENCE AND FINDING MEANING | \| |
| BACKGROUND CHARACTERISTICS<br>Poor psychosocial development<br>Early life exposure to abuse<br>Family history of psychopathology | Violent/sudden loss<br>Seeing loved ones harmed<br>Noxious/toxic exposure<br>Causing harm to others<br><br>MAGNITUDE OF THE STRESSOR | ATTRIBUTION<br><br>MOTIVATION | \| |
| PRE-STRESSOR ENVIRONMENT | CONTROL OR PREDICTABILITY<br><br>ADAPTATION TO STRESSOR<br>Coping strategies<br>Emotional distress | BIOLOGICAL RESPONSE<br><br>THE RECOVERY OR POST-STRESSOR ENVIRONMENT | PTSD |

*Note.* From *Posttraumatic Stress Disorder: A Time-Process View of Contributing Factors* (p. 33), by L.G. Frederikson, K. Chamberlain, and N. Long, 1995, Palmerston North, New Zealand: Department of Psychology, Massey University. 

## 5. Mental Health Outcomes among CSA Survivors

The model developed by Frederikson and colleagues (1995) has identified a number of factors that may explain the variability in post trauma adjustment among childhood sexual abuse (CSA) survivors. The following section further explores relevant trauma characteristics and contextual factors, as well as pre and post-stressor factors.

### *Trauma Characteristics & Contextual Factors*

The Posttraumatic Stress Disorder (PTSD) time-process framework developed by Frederikson et al. (1995) suggests that subsequent adaptation following trauma exposure is influenced by stressor-related factors. Previous research has examined objective and subjective characteristics of the stressor separately in order to evaluate their independent contribution to resulting distress (Weaver & Clum, 1995; Green, 1990; Spaccarelli, 1994). However, while these factors can be examined as rather isolated entities, their interdependence should also be recognised (Weaver & Clum, 1995). According to Green (1990), objective factors can be defined and measured fairly objectively without reference to the person who experienced the event, whereas subjective factors go beyond the environment and include perceptions and immediate appraisals of the event.

### *Objective Stressor-Related Factors*

Relevant objective stressor-related factors associated with CSA include physical injury, the duration of exposure, the time since the event, as well as exposure to multiple traumatic events. These factors are investigated further below.

#### *Physical Injury*

Green (1990) highlighted the fact that traumatic events vary in their degree of physical injury. Several studies have examined the impact of physical injury during trauma exposure and indicate that events involving physical injury are associated with more pathological outcomes (Kilpatrick et al., 1989; Green, Grace, & Gleser, 1985; Weaver & Clum, 1995; Resnick et al., 1993; Boudreaux et al., 1998). Furthermore, Kilpatrick and colleagues (1989) found that physical injury played a critical role in the development of PTSD following exposure to sexual assault in combination with life threat. Kilpatrick et al. (1989) found that 80% of women, who experienced rape, life threat, and physical injury developed PTSD.

*Duration*

Traumatic events also vary in relation to their time scale. Some forms of interpersonal violence such as rape, usually involve a single episode. However, stressors such as CSA may take place over a prolonged period of time (Green, 1993a; Green, 1993b; Anderson et al., 1993). The diagnosis of PTSD has been considered by some authors to be more appropriate to circumscribed events rather than stressors that occur over a long duration (Mezey, 1997; Herman, 1992; McGregor, 2000). Herman (1992) proposed a new diagnosis of Complex PTSD, while Terr (1994) used the term Type I syndrome to refer to the symptoms of single traumatic events, and the Type II syndrome to refer to the effects of prolonged events. Research suggests that exposure to events such as CSA that occur over a prolonged period of time are associated with more pathological outcomes (Flood & Wilson, 1997; Kendall-Tackett et al., 1993; Browne & Finkelhor, 1986; Foa, Steketee, & Rothbaum, 1989).

*Time Elapsed Since the Traumatic Event*

While the time since trauma exposure would appear intuitively to influence subsequent adaptation, it has rarely been examined (Kendall-Tackett et al., 1993). Of the few studies that have, the negative sequelae associated with trauma exposure appears to decrease over time (Kendall-Tackett et al., 1993; Green & Solomon, 1995; Weaver & Clum, 1995; Kilpatrick et al., 1989; Weaver & Clum, 1995). However, further research is required to clarify this relationship among CSA survivors given that research findings are inconsistent (e.g., Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Flett et al., 1996; Dunmore, Clark, & Ehlers, 1999).

*Multiple Traumatic Experiences*

A substantial number of people in the general population have experienced multiple traumatic events (Green et al., 2000, Green, 1994; Weaver & Clum, 1995; Resnick et al., 1993; Breslau, Davis, Andreski, & Peterson, 1991; Flett et al., 1996). Green and colleagues (2000) found that as many as 80-85% of college women who had been exposed to trauma had actually experienced multiple types of events. However, few studies have examined or evaluated the impact of multiple types of trauma exposure (Carlson & Dalenberg, 2000; Green et al., 2000; Weaver & Clum, 1995; Green, 1994). Of the few that have, childhood trauma has consistently been identified as a risk factor for further victimisation (Breitenbecher, 2001; Arata, 2000; Green et al., 2000; Acierno, Resnick, &

Kilpatrick, 1997; Flett et al., 1996; Weaver & Clum, 1995; Boney-McCoy & Finkelhor, 1995). Multiple exposure to the same or different types of traumatic events has also been associated with elevated levels of psychological distress (Arata, 2000; Green, 1994; Green et al., 2000; Flett et al., 1996). Therefore, the investigation of a focal traumatic event such as CSA, should also consider the possibility that the survivor has been exposed to other types of events.

In summary, the objective stressor-related characteristics examined above offer an understanding of the variability in responses among CSA survivors. However, these factors do not account for all of the variance in post trauma adjustment. Therefore, in line with current thinking, the following investigates the relationship between subjective stressor-related factors and subsequent outcomes.

***Subjective Stressor-Related Factors***

The fundamental importance of survivor's interpretations and appraisals in determining responses to traumatic events has been recognised by a number of authors (e.g., Green, Wilson et al., 1985; Kilpatrick et al., 1989; McCann et al., 1988; Foa et al., 1989, 1992, 1999; Kushner, Riggs, Foa, & Miller, 1992; Janoff-Bulman, 1992; Joseph et al., 1997; Spaccarelli, 1994: Weaver & Clum, 1995; Dunmore et al., 1999; Ehlers & Clark, 2000; Carlson & Dalenberg, 2000). The metaphor of the half-full, as opposed to the half-empty glass, illustrates the fact that any stimulus is capable of being perceived in a variety of ways (Janoff-Bulman, 1992; Joseph et al., 1997). Relevant subjective stressor-related factors that have been identified by Frederikson et al. (1995) as having an impact on post trauma adjustment include appraisals of predictability, controllability, life threat, subjective distress, and causal attributions, along with appraisals of the consequences and overall life effect of exposure. These factors are examined further below.

*Predictability*

Traumatic events vary in their degree of predictability. Unpredictable events usually occur rapidly, without prior warning, and do not provide enough time to prepare or process the event (Carlson & Dalenberg, 2000; Lazarus, 1999). On the other hand, predictable events offer more time to prepare for inevitable outcomes (Carlson & Dalenberg, 2000). Consequently, the literature indicates that unpredictable or unexpected events tend to be associated with more negative sequelae (Foa, et al., 1992; Lazarus, 1999;

Carlson & Dalenberg, 2000; Janoff-Bulman, 1992; Joseph et al., 1997; Taylor, 1991; Wilson, Smith, & Johnson, 1985). More specifically, unpredictable appraisals of a traumatic event have been associated with symptoms of arousal and generalised fear (Foa et al., 1992).

*Controllability*

Traumatic events also vary in their degree of controllability. Appraisals of an event as controllable suggests that the survivor could have significantly influenced the outcome of the event, whereas appraisals of an event as uncontrollable indicates that nothing could have been done to influence the stressor (Perrez & Reicherts, 1992; Joseph et al., 1997). Higher levels of psychopathology have been associated with uncontrollable appraisals (Foa et al., 1992; Dunmore et al., 1999). Posttraumatic stress symptoms linked specifically to uncontrollable appraisals include persistent arousal and generalised fear (Foa et al., 1992). Furthermore, exposure to an uncontrollable event may lead to the development of a generalised belief that nothing can be done to control aversive stimuli in the future (Seligman et al., 1971; cited in Foa et al., 1992; Kushner et al., 1992). Therefore, as indicated by Carlson and Dalenberg (2000), CSA survivors may continue to perceive themselves as powerless long after they have regained some control.

*Life Threat*

Green (1990) identified life threat as an important dimension of traumatic life events. Life threat involves an encounter with the environment in which the person may not know for certain whether he or she will survive, and is often thought of as a "brush with death" (Green, 1993b). Appraisals of life threat during trauma exposure have been associated with higher levels of psychopathology (Ullman & Filipas, 2001; Green, 1993b; Green, 1990; Green, Wilson et al., 1985; Kilpatrick et al., 1989; Kilpatrick & Resnick, 1993; Dunmore et al., 1999). Furthermore, as previously noted Kilpatrick and colleagues (1989) found that experiences of rape that involved appraisals of life threat along with physical injury had particularly devastating effects. Posttraumatic stress symptoms associated with life threat appraisals include fear, anxiety, hyperarousal, hypervigilance, and intrusive imagery (Freyd & DePrince, 2001; Wilson et al., 1985).

*Subjective Distress*

Appraisals of the distress experienced by the survivor immediately following trauma exposure have also been associated with post trauma adjustment (Foa et al., 1999). The literature suggests that negative appraisals of initial distress can elicit further negative emotions and the use of dysfunctional coping strategies, which may maintain posttraumatic stress symptoms (Ehlers & Clark, 2000; Joseph et al., 1997). Research indicates that more pathological outcomes are associated with negative appraisals of initial distress (Dunmore et al., 1999; Ehlers & Clark, 2000; Green, Grace et al., 1985; Weaver & Clum, 1995).

*Causal Attributions*

Following exposure to an unexpected event, survivors tend to make causal attributions for the event's occurrence (Weiner, 1985; Janoff-Bulman, 1992; Joseph et al., 1997). Attributions of self-blame have been associated with higher levels of psychological distress (Joseph et al., 1997; Weaver & Clum, 1995; Boeschen, Koss, & Figueredo, 2001; Abramson, Metalsky, & Alloy, 1989). However, causal attributions for an event's occurrence may be inaccurate. Janoff-Bulman (1992) found that women frequently blamed themselves for experiences of rape when it was evident that blame should have been attributed elsewhere. Self-blame may reflect a need to minimise the threat to the survivor's pre-existing belief system or a means of gaining a sense of control (Janoff-Bulman, 1992; Foa et al., 1989). Inappropriate self-blame may also stem from being the recipient of abuse from a parental figure or being blamed by others for the event's occurrence (McCann et al., 1988). On the other hand, external attributions, such as blaming the perpetrator for the event's occurrence do not appear to be as detrimental (Frazier, 1990; cited in Boeschen et al., 2001).

*Inferred Negative Consequences*

Negative appraisals of the consequences of trauma exposure have been implicated in the development of hopelessness and PTSD symptomatology (Abramson, 1988; Ehlers & Clark, 2000; Dunmore, et al., 1999; Foa et al., 1999; McFarlane & Yehuda, 1996; Carlson & Dalenberg, 2000). However, negative appraisals are not inevitable. An event may be appraised more positively if trauma exposure has led the survivor to find a purpose and appreciation for life, facilitated a reevaluation of personal values, acquisition of coping

skills, or increased psychosocial resources such as a result of a strengthened social support network (Tedeschi, Park, & Calhoun, 1998; Schaefer & Moos, 1998; Park, 1998).

*Overall Life Effect*

A belief that an event has had a negative impact on many areas of one's life has also been associated with the development of hopelessness and PTSD symptomatology (Ehlers & Clark, 2000; Foa et al 1999; Abramson et al., 1989; Flett et al., 1996; Greening, Stoppelbein, & Docter, 2002). According to Ehlers and Clark (2000), negative appraisals of the event and its sequelae may result in the survivor being "frozen in time". Furthermore, appraisals of an event as having far-reaching consequences and attributing a host of problems to it may prevent the examination of other factors that lead to psychological distress (Hughes, 1993; cited in McFarlane & van der Kolk, 1996). On the other hand, more adaptive outcomes have been associated with more time-limited appraisals of the impact of trauma exposure (Abramson et al., 1989; Foa et al., 1999; Ehlers & Clark, 2000).

In summary, the model developed by Frederikson et al. (1995) has identified a number of subjective stressor-related factors that help explain individual variability in post trauma adjustment among survivors exposed to similar stressors. A number of these factors also appear to influence subsequent adaptation among CSA survivors. However, the sequelae associated with CSA exposure may also be influenced by several factors in the pre and post-stressor environment. These factors are examined below.

***Post-Stressor Factors***

The model formulated by Frederikson et al. (1995) indicates that subsequent adaptation following trauma exposure is influenced by the coping strategies used in the post-stressor environment. According to Folkman & Lazarus (1991, p. 210), "coping consists of cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person". Consequently, coping efforts may be focused on alleviating internal distress (emotion-focused coping) or on alleviating the effects of the stressful situation (problem-focused coping). However, the actual function of coping can only be determined in relation to the context in which it is used (Folkman & Lazarus, 1991). The coping strategies identified by Frederikson and

colleagues (1995) include the use of positive social support networks and talking about the traumatic experience.

*Social Support Networks*

The use of social support networks has generally been associated with more adaptive outcomes following trauma exposure (Joseph et al., 1997; Green, Grace et al., 1985; Foa et al., 1989). Sources of social support include both informal and formal supports. Formal supports include clergy, physicians, and mental health workers, while informal supports include friends, co-workers, and family. Lower levels of distress have been associated with the use of informal supports (Green, Grace et al., 1985).

Social support may be beneficial in a number of ways. Social support networks may enhance recovery by positively influencing appraisals, interpretations, and coping strategies. In addition, social support may enhance recovery by encouraging discussion of the event (Foa et al., 1989). However, there may be several barriers to accessing appropriate social support. For example, children are typically reliant on caregivers in accessing formal support systems. In addition, when the CSA perpetrator is known to the victim, social supports tend to be used less frequently (Wolfe & Kimerling, 1997; Barker-Collo, 2000; McGregor, 2000, Anderson et al., 1993; Hanson, Resnick, Saunders, Kilpatrick, & Best, 1999; Arata, 1998). However, when a child exposed to CSA does not receive appropriate or adequate support, the victimisation may continue.

*Talking about the Stressor Experience*

Ehlers and Clark (2000) claim that many survivors have a persistent need to talk about their experience. Beneficial physical and health outcomes have been associated with talking about traumatic life events (Pennebaker, 1995; Kimerling & Calhoun, 1994; Tedeschi et al., 1998). Disclosure may help develop a coherent narrative about the experience and also change the way that material is represented in memory (Pennebaker, 1995; Joseph et al., 1997; Ehlers & Clark, 2000). However, trauma survivors may find it difficult to talk about their experience if they do not have the appropriate vocabulary or language (Cicchetti & White, 1990). Furthermore, survivors may not disclose their experience if they believe they will cause distress to others, or that others will respond negatively. For example, a victim of CSA may expect to be disbelieved, blamed, or fear reprisals.

*Confided Feelings in Others*

Subsequent adaptation to trauma exposure also appears to be influenced by how survivors talk about their experience. Rumination or discussing the event in a non-emotional way, like giving a police report, is unlikely to access the most distressing aspects of an experience (Ehlers & Clark, 2000). The ability to express feelings has been positively associated with mental and physical health outcomes (Tedeschi et al., 1998; Nightingale & Williams, 2000; Resick, 2001). However, negative beliefs toward emotional expression, along with gender and cultural norms may influence whether or not a survivor confides their feelings in others (Nightingale & Williams, 2000; Carlson & Dalenberg, 2000). However, a "stiff upper lip" attitude towards expressing emotions may be problematic (Nightingale & Williams, 2000).

Finally, although coping has connotations of successful outcomes, coping efforts must match the circumstances of the event and the resources of the individual (Resick, 2001; Shalev, 1996). Consequently, the indiscriminate use of a coping strategy may hinder adaptation (Joseph, et al., 1997; Taylor & Aspinwall, 1996; Lepore & Evans, 1996). Furthermore, transactional models of traumatic stress suggest that different coping strategies will be called for at different times, as the demands of the experience unfold over time (Joseph et al., 1997; Holahan, Moos, & Schaefer, 1996). Moreover, exposure to additional life events may place further adaptive demands on the survivor.

***Pre-Stressor Factors***

The PTSD time-process framework developed by Frederikson and colleagues (1995) has identified several factors prior to trauma exposure that may also influence subsequent adaptation. These factors include prior psychopathology, biological vulnerability, personality, and background characteristics. Therefore, prior psychopathology or biological predispositions may also influence the sequelae associated with CSA. Furthermore, pre-existing personality characteristics such as attributional or coping style, locus of control, neuroticism, and extraversion may have predisposed the victim of CSA to appraise the abuse in a particular way. Moreover, family dysfunction and adverse experiences in childhood have been implicated in the development of psychopathology (Brewin, Andrews, & Valentine, 2000; Breslau, 1998; Schnurr & Friedman, 1997).

Due to the nature of the phenomenon under investigation however it is usually difficult, if not impossible to obtain data relating to factors prior to trauma exposure (Baum et al., 1993; Joseph et al., 1997). This type of data can only be reliably examined in longitudinal studies, which assess children prior to CSA exposure. Although longitudinal studies are also limited by the associated ethical and legal constraints in studying this population. On the other hand, when this type of data is collected retrospectively, it is subject to recall errors and is likely to be influenced by current functioning (Breslau, Davis, Peterson, & Schultz, 1997). Therefore, while these factors may help explain subsequent adaptation following exposure to CSA, they are difficult variables to reliably investigate.

In summary, individual variability in outcomes following CSA exposure appears to be influenced by individual factors prior to trauma exposure, characteristics and contextual factors related to the abuse, as well as factors related to the post trauma environment. However, the impact of CSA exposure may not be limited to mental health domains of functioning. The following section examines the impact of such exposure on physical health.

# 6. Physical Health Outcomes

Despite the predominance of the biomedical model in Western medicine, the role of psychological and social factors in relation to health and illness are increasingly being recognised (Taylor, 2003; Cassidy, 1999; Sarafino, 1994). While a number of studies have examined these factors in relation to stress, the impact of traumatic life events has received less attention (Friedman & Schnurr, 1995). However, the available evidence suggests that trauma exposure is associated with a number of health outcomes including elevated levels of physical health symptoms, chronic illnesses, and health care use.

### *Physical Health Symptoms*

In a review of the literature, Friedman & Schnurr (1995) concluded that trauma survivors relative to nontraumatised controls reported more physical health symptoms. More specifically, Kimerling and Calhoun (1994) found that in the year following sexual assault, survivors reported more physical health symptoms in comparison to nonvictims. Frequently reported symptoms included back pain, headaches, gastrointestinal complaints, pounding heartbeats, allergies, and menstrual symptoms (Kimerling & Calhoun, 1994). In addition, Koss and colleagues (1990) found that criminal victimisation was associated with lower levels of perceived current health in comparison to nonvictims. Although there has been some debate over the validity of self-reported physical health symptoms, there appears to be some convergence in self-reported health and diagnosed illnesses (Friedman & Schnurr, 1995).

### *Chronic Health Problems*

In comparison to nontraumatised controls, trauma survivors tend to report higher levels of chronic health problems (Friedman & Schnurr, 1995). Although most of the research in this area has examined the relationship between trauma and chronic health problems in war veterans, survivors of childhood sexual abuse (CSA) may also be at risk. Trauma exposure has been linked to peptic ulcers, hypertension, musculoskeletal pain, gastrointestinal illness, and cardiovascular disease (Green, 1994; Green, Epstein, Krupnick, & Rowland, 1997; Friedman & Schnurr, 1995). Sexual assault in particular has been linked to elevated levels of obesity, gynaecological and functional bowel disorders (Kimerling & Calhoun, 1994; Green, 1994; Friedman & Schnurr, 1995).

### *Health Care Use*

The available evidence also suggests that trauma survivors in comparison to their nontraumatised counterparts tend to use more health care services (e.g., Green, 1994; Schnurr & Friedman, 1997; Kimerling & Calhoun, 1994; Mezey, 1991; Acierno et al., 1997; Koss, Woodruff, & Koss, 1990). More specifically, sexual assault has been linked to increased physician visits, hospital admissions, outpatient clinic appointments, and lifetime surgeries (Friedman & Schnurr, 1995; Kimerling & Calhoun, 1994; Ullman & Brecklin, 2002). Despite the general consistency in findings indicating that trauma exposure is on average associated with adverse physical health outcomes, the outcomes of individual survivors vary.

### *Physical Health Outcomes among CSA Survivors*

Several objective and subjective stressor-related factors may influence individual variability in physical health outcomes following trauma exposure. Physical injury during a traumatic event may result in long-term health consequences. More specifically, female sexual assault victims may have been exposed to sexually transmitted diseases, genital, and nongenital injuries, which may have led to infection, permanent scaring, disability, or pain (Resnick, Acierno, & Kilpatrick, 1997). The severity of the trauma and exposure to multiple traumatic events are additional factors which have been associated with adverse health outcomes (Friedman & Schnurr, 1995; Koss et al., 1990; Wolfe et al., 1999; Wolfe, Proctor, Duncan-Davis, Sullivan-Borgos, & Friedman, 1998; Taft, Stern, King, & King, 1999; Morris, Martin, & Romans, 1998). On the other hand, a number of studies indicate that trauma disclosure has a beneficial impact on health (e.g., Richards, Beal, Seagal, & Pennebaker, 2000; Greenberg & Stone, 1992). Moreover, individual variability in health outcomes among CSA survivors may also be influenced by Posttraumatic Stress Disorder (PTSD) symptomatology.

### *PTSD & Health*

Despite the paucity of research examining the relationship between PTSD and health, PTSD has also been associated with elevated levels of physical health symptoms, chronic illnesses, and health care use (Friedman & Schnurr, 1995). While research has again primarily focused on war veterans, the available literature suggests that PTSD is the mechanism through which trauma exposure has an impact on subsequent health outcomes. Wolfe and colleagues (1994) found that the impact of war zone exposure was dramatically

reduced when PTSD was taken into account. Using path analytic techniques, Friedman and Schnurr (1995), and Taft and colleagues (1999) reported similar findings. Consequently, these findings suggest that the impact of trauma exposure may not be limited to mental health domains of functioning. Trauma exposure may also result in a number of adverse physical health outcomes. Although, PTSD appears to be the mechanism through which trauma exposure has an impact on physical health. However, further research is required to clarify these relationships among CSA survivors. Based on these findings a number of research objectives and hypotheses have been formulated which are presented in the following section.

## 7. Research Objectives & Hypotheses

The literature reviewed clearly indicates that many men and women in society have been exposed to a traumatic event at some time in their life. Of particular concern, is the large number of women who have been exposed to interpersonal violence and sexual assault in particular. More specifically, as many as 1 in 5 New Zealand women may have been exposed to sexual abuse in childhood. Furthermore, a number of pathological outcomes have been associated with such exposure, which may be endured over a long period of time. Elevated levels of current Posttraumatic Stress Disorder (PTSD) symptomatology and psychological distress have been found in women with histories of childhood sexual abuse (CSA) in comparison to nontraumatised controls. In addition, research indicates that CSA exposure may result in a number of adverse physical health outcomes. Although, PTSD appears to be the mechanism through which CSA and trauma exposure have an impact on other forms of psychopathology and physical health. Despite the general consistency in findings indicating that on average CSA exposure is associated with more adverse outcomes in comparison to other types of trauma exposure, the average response of survivors obscures the individual variability in outcomes. A model has been presented, which may help explain why not all victims of CSA respond in the same way. A number of CSA characteristics and contextual factors as well as pre and post-stressor factors may influence subsequent adaptation among survivors. However, further research is required to clarify the relationship between several factors in relation to CSA. Based on these findings the current study has several objectives, which are summarised below:

Objective 1. To provide a descriptive account of the nature and extent of current mental and physical health functioning in a community sample of New Zealand women.

Objective 2. To evaluate the impact of traumatic events involving CSA on the current mental and physical health functioning in a community sample of New Zealand women, after controlling for significant demographic and background predictors.

Objective 3. To evaluate whether PTSD is the mechanism through which trauma has an impact on the current mental and physical health functioning of women in a New Zealand community sample.

Objective 4. To provide a descriptive account of the nature and extent of current mental and physical health functioning among women with histories of CSA in a New Zealand community sample.

Objective 5. To evaluate the impact of CSA characteristics and contextual factors on the current mental and physical health functioning of New Zealand women with histories of CSA, after controlling for relevant demographic and background variables.

Objective 6. To evaluate whether PTSD is the mechanism through which trauma has an impact on the current mental and physical health functioning of New Zealand women with histories of CSA.

Based on the objectives of the current study and previous research findings, several hypotheses have been formulated as follows:

Hypothesis 1. Traumatic experiences involving CSA will make a unique and significant contribution to the variance explained in current mental and physical health functioning among women, over and above that explained by significant demographic and background predictors.

Hypothesis 2. There will be significant mean differences in the current mental and physical health functioning among women who have experienced a traumatic event involving CSA in comparison to that of women who have not experienced a traumatic event in their lifetime.

Hypothesis 3. PTSD will partially mediate the impact of trauma exposure on the current mental and physical health functioning among all women.

Hypothesis 4. The characteristics and contextual features of CSA will make a unique and significant contribution to the variance explained in current mental and physical health functioning among women with histories of CSA, over and above that explained by significant demographic and background variables.

Hypothesis 5. PTSD will partially mediate the impact of CSA characteristics and contextual factors on the current mental and physical health functioning of women with histories of CSA.

# 8. Method

This study is part of a larger community-based survey that was directed by the Accident Rehabilitation and Insurance Compensation Corporation (ACC) to provide information on the long-term repercussions of trauma for New Zealand (NZ) society (Flett et al., 1996). Fifteen hundred adults aged 18 years and over ($n$ = 964 females and $n$ = 536 males) were interviewed about a range of traumatic events (as outlined in section F of the Appendix), including experiences of childhood sexual abuse (CSA). The current study is concerned with the experiences of the women surveyed. The following outlines the methodological issues relevant to the current study. Full details of the methodology used are reported elsewhere (see Flett et al., 1996).

### *Design*

A cross-sectional design was used in the current study, which involved simultaneously inquiring about exposure to prior traumatic events and current levels of functioning. Cross-sectional designs have frequently been used to investigate traumatic life events due to the nature of the phenomenon under investigation, the associated ethical and legal constraints, and difficulties in following participants over extended periods of time (Resnick, Acierno, Holmes, Dammeyer, & Kilpatrick, 2000; Bolen, 2001; Green, 1994; Anderson et al., 1993; Kendall-Tackett et al., 1993; Briere, 1992; Finkelhor, 1990).

### *Sampling*

The sampling strategy used in the current study involved a 3-stage stratified method, similar to that used in most national surveys (McCready, 1996). Māori and rural respondents were deliberately oversampled so that the experiences of these subgroups in the population could be reliably investigated (Flett et al., 1996). In the first stage, 150 census meshblocks were systematically selected from the North and South Islands of NZ as outlined in Table 6, in a ratio consistent with the oversampling required.

**Table 6**

*Geographic Distribution of Meshblocks*

| Region | No. of Meshblocks | Region | No. of Meshblocks |
|---|---|---|---|
| Northland | 16 | Manawatu – Wanganui | 8 |
| Auckland | 23 | Wellington | 10 |
| Waikato | 19 | Nelson – Marlborough | 2 |
| Bay of Plenty | 28 | West Coast | 2 |
| Gisborne | 16 | Canterbury | 7 |
| Hawkes Bay | 7 | Otago | 4 |
| Taranaki | 5 | Southland | 3 |

*Note.* From *Community Survey of Trauma* (p. 8), by R. Flett, M. Millar, N. Long, & C. MacDonald, 1996 Palmerston North, New Zealand: Technical Report to the Accident Rehabilitation and Compensation Insurance Corporation, New Zealand.

In the second stage, 10 households were randomly selected from within each meshblock. In the final stage, an eligible respondent was selected from each household. In the event of non-contact, three calls were made to each dwelling before substitution was made. Initially, 3562 attempted contacts were made, of which 972 were not eligible, did not reply or were otherwise unavailable for an interview. A further 1090 out of the remaining 2590 contacts refused to be interviewed, giving a valid response rate of 58% (Flett et al., 1996). Finally, the probability of being included in the study was known and was greater than zero.

### *Procedure*

#### *Interview Schedule*

An interview schedule was developed by Flett et al. (1996) from a range of measures used in previous research. Community-based studies concerned with the frequency and impact of traumatic life events have typically relied upon a range of retrospective self-reports in the context of a survey interview (Schlenger et al., 1997; Baum et al., 1993). A notable strength of the interview schedule developed for use in the current study was that it did not require respondents to make a conscious link between the trauma and subsequent outcomes, which may result in the serious under reporting of psychopathology (Green, Lindy, Grace, 1985; Goodman, Corcoran, Turner, Yuan, & Green, 1998).

*Pilot Study*

Two pilot studies were conducted to identify aspects of the interview schedule and survey that could be improved before the main study was undertaken. Based on issues arising from the initial pilot study of 20 respondents, the wording of some items and the design of the interview schedule were modified. The second pilot study demonstrated that the modifications successfully shortened and simplified the interview process in a comparable sample (Flett et al., 1996).

*Data Collection*

Data collection occurred over a 3-month period in 1995 using structured face-to-face interviews (Flett et al., 1996). Face-to-face interviews are generally recommended for the collection of data related to complex and sensitive issues (Statistics New Zealand, 1995). Furthermore, face-to-face interviews promote higher response rates in comparison to alternative methods such as telephone interviewing (Bolen, 2001; Bolen & Scannapieco, 1999; Wyatt & Peters, 1986). While there has been debate in the literature relating to the matching of gender and ethnicity of the interviewer to the respondent, what has emerged more importantly is the skill and ability of the interviewer (Bolen, 2001; Hoghughi, 1992). The interviews were conducted by trained National Research Bureau (NRB) interviewers on behalf of the Massey University research team. Furthermore, the interviews were conducted in the respondent's home to promote privacy and confidentiality.

The interviews were conducted in accordance with the ethical guidelines laid down by the New Zealand Psychological Society. Prior to seeking consent, potential respondents were given a detailed information sheet that described the nature of the study, the rights of participants, and the responsibilities of the researcher (Flett et al., 1996). Respondents were also informed that their responses were confidential, that they could skip or omit any of the interview questions, and could discontinue participation in the study at anytime (Flett et al., 1996).

Interviewers followed a standardised administration procedure. In most cases the interviews lasted between 45 and 60 minutes. The survey sections relevant to this study are attached in the Appendix. At the end of the interview, respondents were also supplied with detailed information about the Massey University researchers so

that they could obtain feedback about the results of the study, ask additional questions or seek further clarification about any aspect of the study (Flett et al., 1996). A procedure was also put in place whereby a respondent could access a network of counsellors if required.

### *Measures*

#### *Sample Characteristics*

Socio-demographic data was collected using questions modelled on the 1986 NZ Census (New Zealand Department of Statistics, 1988). Socio-demographic information collected included ethnicity, area of residence, age, marital status, employment status, and educational qualifications.

#### *Life Events*

Based on previous life events research (Brugha, Bebbington, Tennant, & Hurry, 1986; Singh, Lewing, Raphael, Johnson, & Walton, 1986) a scale was developed by Flett and colleagues (1996) to assess exposure to 20 life events during the previous 12 months. The life events examined included personal and family death, parenthood, personal and family legal problems, as well as changes in household composition, marital status, employment, residence, and finances. Scores on the scale range from 1 to 20 and reflect the number of life events experienced.

#### *Traumatic Experiences*

A modified version of the Traumatic Stress Schedule (TSS; Norris, 1990, 1992) was used to screen for lifetime exposure to 12 potentially traumatising events including childhood sexual abuse (CSA). An additional screening item examined other shocking, terrifying, or traumatic experiences, including events that the respondent was unable to name or talk about. The TSS was originally developed for use in the general population by lay interviewers (Norris, 1990). Prevalence rates obtained using the TSS converge with that of other large scale surveys (Norris & Riad, 1997). However, the TSS has been criticised for not explicitly assessing experiences of CSA (Norris & Riad, 1997). While there is no consensus in how to define CSA (Bolen, 2001), it is now widely accepted that behaviourally specific terminology should be used to inquire about such experiences, as opposed to global questions that rely on stereotypes (ie. "Have you ever been raped?") (Kilpatrick et al., 1989; Vrana &

Lauterbach, 1994; Wyatt & Peters, 1986; Schlenger et al., 1997; Keane, Weathers, & Foa, 2000). Therefore a screening item was developed which asked respondents to indicate if "During your childhood, did anyone ever make you have sex by using force or threatening to harm you? This involves all unwanted sexual activity". All experiences of extrafamilial and intrafamilial abuse prior to the age of 18 years were included.

*PTSD Symptomatology*

A continuous measure of Posttraumatic Stress Disorder (PTSD) symptomatology was used in the current study. A modified version of the Civilian Mississippi Scale (CMS) was used to assess PTSD symptomatology over the previous month. The CMS was originally developed as a parallel form to the Mississippi Scale for Combat-Related PTSD (CRMS; Keane, Caddell, & Taylor, 1988) for use in the National Vietnam Veterans and Readjustment Study (NVVRS). High internal consistency estimates have been reported for both forms of the scale (Keane et al., 1988; Vreven, Gudonowski, King, & King, 1995; Briere, 1997). Short versions of both the CMS and CRMS scales have also been developed (Fontana & Rosenheck, 1994; Vreven et al., 1995). In the current study, the 11-items from the CRMS short form with wording more appropriate for a general survey as utilised in the CMS, were used to assess PTSD symptomatology (Flett et al., 1996). Respondents rated each item on a 5-point response scale ranging from 1 "Never" to 5 "Very Frequently". High scores on the measure therefore indicate high levels of PTSD symptomatology. A coefficient alpha of .75 was reported by Madison-Smith (1998) for the modified version of the scale.

*Psychological Distress*

Current levels of psychological distress were assessed using a subscale of the Mental Health Inventory (MHI), which was originally developed for use in the general population (Veit & Ware, 1983). The MHI contains 38-items examining psychological distress and wellbeing over the previous month, which are rated on a 7-point scale. High scores on this measure reflect higher levels of psychological distress. The 2-factor structure of the MHI has been supported in several studies (Veit & Ware, 1983; Ostroff, Wolverton, Berry, & Lesko, 1996; Heubeck & Neill, 2000). Internal consistency estimates range from .92 to .96, and stability coefficients over a

1-year interval range from .63 to .64 (Veit and Ware, 1983; Flett et al., 1996; Madison-Smith, 1998). Individual item-total correlations range from .13 to .64 based on the women surveyed in the current study (Madison-Smith, 1998).

*Physical Health Symptoms*

A modified version of the Pennebaker Inventory of Limbic Languidness (PILL) (Pennebaker, 1982) was used to assess the frequency of physical symptoms over the past month. Pennebaker (1982) reported internal consistency estimates of .88 and stability coefficients over a 2-month period ranging from .79 to .83. However, subsequent studies have shown that a number of PILL items are highly correlated and do not contribute independently to the physical symptoms total (Alpass, Long, MacDonald, & Chamberlain, 1996; MacDonald, Chamberlain, & Long, 1995; Flett et al., 1996). Consequently, several items were combined and reworded to form the 28-item scale used in the current study. For example, "acne and pimples on face" and "acne and pimples other than face" were combined into a single item "acne or pimples". Respondents rated each item on a 5-point response scale ranging from 1 "Not at all" to 5 "Extremely". High scores on the measure therefore correspond with high levels of physical health symptoms.

*Chronic Health Problems*

A modified version of an existing checklist of serious medical conditions (Belloc, Breslow, & Hochstim, 1971), which incorporated the conditions included in the 1992-3 Household Health Survey (Statistics New Zealand & Ministry of Health, 1993) was used to assess the incidence of 17 chronic health problems. Respondents were asked to indicate if their doctor, nurse, or another health care worker had informed them that they had any of the conditions listed for six months or longer.

*Health Care Use*

An aggregate measure of health care use used in the current study. Respondents were asked to indicate if they had used any of the following health services in the previous 12 months: General Practitioner (GP), hospital admission, accident and emergency clinic, outpatient clinic, prescription items, as well as health professionals other than a GP. Scores on the measure range from 0 to 6 and reflect the number of health services used at least once.

*CSA Characteristics and Contextual Factors*

Respondents who endorsed an experience of CSA on the modified version of the TSS were also asked a number of additional questions relating to the characteristics and contextual factors of the abuse. For example participants were asked "When did this first happen to you?" and "How many times has this happened to you?". A full list of items relating to the characteristics and contextual factors of CSA is attached in section G of the Appendix.

# 9. Results

The results presented in this section focus on the impact of different types of traumatic experiences on the current mental and physical health functioning of all women surveyed. Analyses presented in the following section examine the impact of childhood sexual abuse (CSA) characteristics and contextual factors on the current functioning of women with histories of CSA. Current mental health functioning has been examined using measures of Posttraumatic Stress Disorder (PTSD) symptomatology and psychological distress, while measures of physical health symptoms, chronic health problems, and health care use have been used to examine current physical health functioning. For each set of analyses relevant descriptive statistics have been reported and are followed by the results of the bivariate and multivariate analyses pertaining to each dependent variable. The results of the study have been evaluated using an alpha level of .05 and a two-tailed test of statistical significance.

### *Socio-Demographic Information*

Socio-demographic information pertaining to all women surveyed, along with relevant coding algorithms are presented below in Table 7. These findings indicate that 35% of women identified themselves as Māori, and that the majority of the remaining respondents were NZ Europeans. Table 7 also indicates that the sample was comprised almost equally of women residing in urban and rural areas. The over representation of Māori women and rural respondents in comparison to their relative size in the New Zealand population is a reflection of the sampling strategy used. The age of the women surveyed ranged from 19 to 90 years ($M$ = 44, $SD$ = 16.3). Fifty nine percent of women surveyed were currently married, while the remaining 41% were either widowed, separated, divorced, or had never been married. Table 7 also indicates that 41% of women were either in full or part time paid employment. The majority of remaining women were either retired or beneficiaries. Finally, 43% of women surveyed had no formal educational qualifications, 35% had obtained a secondary school qualification, and the remaining 22% had attained a higher educational qualification.

**Table 7**

*Summary of Socio-Demographic Information for All Women (N = 964)*

| | No. | % | Coding Algorithm |
|---|---|---|---|
| Ethnicity | | | |
| NZ Māori | 341 | 35 | 1=Non-Māori, |
| NZ European | 551 | 57 | 2=Māori |
| Pacific Islander | 34 | 4 | |
| Other[1] | 38 | 4 | |
| Area of residence | | | |
| Urban | 497 | 52 | 1=Urban, |
| Rural | 467 | 48 | 2=Rural |
| Age (Years) | | | |
| 18 – 29 | 189 | 20 | Age in years |
| 30 – 39 | 294 | 31 | |
| 40 – 49 | 160 | 17 | |
| 50 – 59 | 119 | 12 | |
| 60 – 69 | 117 | 12 | |
| 70 + | 82 | 8 | |
| Marital status | | | |
| Married | 571 | 59 | 1=Married, |
| Never married | 161 | 17 | 2=Unmarried |
| Separated/Divorced | 124 | 13 | |
| Widowed | 104 | 11 | |
| Primary work role | | | |
| Full time paid employment | 184 | 19 | 1=Paid employment, |
| Part time paid employment | 206 | 22 | 2=Not in paid employment |
| Unemployed | 100 | 10 | |
| Retired | 181 | 19 | |
| Student | 26 | 3 | |
| Beneficiary | 167 | 17 | |
| House-wife, parent | 99 | 10 | |
| Highest educational qualification | | | |
| No school qualification | 406 | 43 | 1=No school qualifications, |
| Secondary school qualification | 335 | 35 | 2=School certificate, |
| Trade or professional | 132 | 14 | 3=6th form/Uni. entrance, |
| University qualification | 56 | 6 | 4=Bursary/Scholarship, |
| Qualification gained overseas | 22 | 2 | 5=Trade/Prof qualification, |
| | | | 6=Uni. degree, 7=Postgrad. |

[1] Includes Australia, Asia & Europe

***Traumatic Experiences***

Of the 964 women surveyed, 37% ($n$ = 358) indicated that they had never experienced a traumatic event in their lifetime. In total, 130 (13.5%) women reported experiences of CSA. For 16 of these women, CSA was the only type of traumatic event experienced. However, the majority of women with histories of CSA ($n$ = 114) reported experiencing multiple types of traumatic events. A list of the most frequently reported additional events is presented below in Table 8. Table 8 also includes details of the traumatic events experienced by nearly half ($n$ = 476) of the women who reported experiencing a traumatic event other than CSA. The type of trauma experienced (CSA only, multiple types of traumatic events including CSA, or traumatic events other than CSA) was represented in subsequent analyses using a set of dummy variables. Women who had experienced a particular type of trauma were coded 1, or otherwise 0.

**Table 8**

*Lifetime Prevalence of Exposure to Traumatic Events by Type of Trauma History (rate/100)*

| | Multiple Trauma Exposure Including CSA ($N$ = 114) | Trauma Exposure other than CSA ($N$ = 476) |
|---|---|---|
| Injury loved one | 55 | 31 |
| Family assault | 54 | 21 |
| Other trauma[a] | 54 | 29 |
| Death loved one | 45 | 40 |
| Sex abuse in adulthood | 40 | 10 |
| Assault | 27 | 9 |
| Motor vehicle accident | 14 | 14 |
| Other accident | 9 | 12 |
| Disaster | 11 | 9 |
| Robbery | 7 | 6 |

*Note.* [a] Includes marital or family problems; foetal, baby or infant death; own serious health problems; serious family health problems; non-injury vehicle accident, fatal accident; suicide; wartime experiences; criminal action against family members; psychological abuse; and other traumas.

Table 8 indicates that there are substantial differences in the types of traumatic events most frequently experienced by women who have experienced multiple types of traumatic events including CSA in comparison to women who have experienced a traumatic event other than CSA. Women with histories of CSA are more likely to report experiences involving injury to a loved one, family assault, other traumas, assault, and sexual abuse in adulthood.

The time since last trauma exposure was also examined. Of the 606 women who reported traumatic experiences, 15% ($n$ = 92) indicated that they had been exposed to a traumatic event in the previous year. In subsequent analyses these women were coded 1, or otherwise 0.

### *Descriptive Statistics*

Relevant descriptive statistics (means and SD) pertaining to the variables examined are presented below in Table 9. Data screening prior to analysis indicated that scores on each of these variables were within the expected range. However, 4 cases with high z scores on chronic health were identified as univariate outliers and were subsequently deleted from further analyses examining this dependent variable. SPSS listwise deletion was used to delete cases with missing data in each analysis.

**Table 9**

*Descriptive Statistics and Coding Algorithms*

| | Mean | SD | Coding Algorithm | Min. Score | Max. Score |
|---|---|---|---|---|---|
| PTSD | 22.59 | 6.14 | Score on the modified version of the CMS | 11 | 55 |
| Psychological distress | 58.32 | 25.16 | Score on MHI psychological distress subscale | 24 | 112 |
| Physical health | 39.94 | 10.81 | Composite symptom score on the modified version of the PILL | 28 | 104 |
| Chronic health | 1.48 | 1.92 | No. of chronic health problems | 0 | 17 |
| Health care use | 2.84 | 1.36 | No. of health care services used | 0 | 6 |
| Life events | 2.85 | 2.11 | No. of life events | 0 | 20 |

### ***Data Transformations***

Prior to any further analyses being conducted, data transformations were performed to improve the skewness and kurtosis on several variables. Logarithmic transformations substantially improved the distributions of PTSD symptomatology, physical health symptoms, and chronic health. The distribution of psychological distress was also markedly improved by a square root transformation. Subsequent references to each of these variables pertain to their transformations.

In summary, the objective of the analyses in this section is to examine the impact of different types of traumatic experiences on the current mental and physical health functioning of all women surveyed, over and above that already explained by relevant demographic and background variables. The potentially mediating effects of PTSD symptomatology are also examined. The specific hypotheses investigated include: (1) that traumatic experiences involving CSA will make a unique and significant contribution to the variance explained in current functioning over and above that explained by significant demographic and background variables; (2) that there will be significant differences in the current level of functioning among women with histories of CSA in comparison to women who have not experienced any type of traumatic event in their lifetime; and finally (3) that PTSD will partially mediate the impact of trauma on current functioning.

### *Bivariate Relationships*

Presented below in Table 10 are the bivariate relationships between each of the dependent and predictor variables.

**Table 10**

*Bivariate Relationship between the Predictor and Dependent Variables*

| | PTSD | Psychological Distress | Physical Health | Chronic Health | Health Care Use |
|---|---|---|---|---|---|
| Life events | .31 ** | .32 ** | .22 ** | -.03 | .17 ** |
| Ethnicity | .09 ** | .07 * | -.00 | .00 | -.10 ** |
| Age | -.18 ** | -.21 ** | .02 | .46 ** | .04 |
| Area of residence | -.14 ** | -.15 ** | -.10 ** | -.06 | .00 |
| Level of education | -.06 | -.07 * | -.07 * | -.10 ** | .09 ** |
| Marital status | .11 ** | .09 ** | .09 ** | .11 ** | -.02 |
| Employment status | .06 | .02 | .08 * | .21 ** | .03 |
| Trauma in last year | .06 | .09 ** | .03 | -.02 | .04 |
| CSA only | .07 * | .07 * | -.01 | -.04 | -.02 |
| Multiple traumas incl. CSA | .31 ** | .26 ** | .18 ** | .02 | .05 |
| Other traumas (excl. CSA) | .07 * | .02 | .06 * | .06 | .07 * |
| PTSD | - | .65 ** | .43 ** | .09 ** | .15 ** |
| Psychological distress | | - | .51 ** | .13 ** | .20 ** |
| Physical health | | | - | .46 ** | .28 ** |
| Chronic health | | | | - | .25 ** |
| Health care use | | | | | - |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Analyses focusing on PTSD symptomatology will be presented first and will be followed by those examining psychological distress, physical health symptoms, chronic health, and health care use.

***PTSD Symptomatology***

Table 10 indicates that there is a significant negative relationship between PTSD symptomatology and area of residence, as well as age. That is, women who are younger and live in urban areas tend to report more PTSD symptoms on average. Table 10 also indicates that there is a significant positive relationship between PTSD symptomatology and life events, ethnicity, and martial status. In other words, women who are not currently married, Māori, and who have experienced a greater number of life events over the previous year tend to report higher levels of PTSD symptomatology on average.

Among the trauma variables, Table 10 indicates that there is a significant positive relationship between each type of traumatic experience and PTSD symptomatology. That is, women who report higher levels of PTSD symptomatology tend to have experienced a traumatic event in some form.

The magnitude of each of these relationships with PTSD symptomatology indicates that the largest amount of variance is being explained by experiences of multiple traumatic events including CSA (10%) and life events (10%), followed by age (3%).

***Intercorrelations among the Predictor Variables***

Presented below in Table 11 are the intercorrelations among the independent variables. Table 11 indicates that some of the correlations among the independent variables are greater in strength than their bivariate relationship with the dependent variable. These findings therefore indicate that some of the observed relationships between the independent and dependent variables may actually be due to confounding. That is, some other third variable may be responsible for the observed effect.

**Table 11**

*Intercorrelations among the Predictor Variables*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Life events | - | | | | | | | | | | |
| 2. Ethnicity | .21** | - | | | | | | | | | |
| 3. Age | -.37** | -.22** | - | | | | | | | | |
| 4. Area of residence | -.12** | .00 | .03 | - | | | | | | | |
| 5. Level of education | -.05 | -.26** | -.07* | -.02 | - | | | | | | |
| 6. Marital status | .07* | .13** | .05 | -.19** | -.08* | - | | | | | |
| 7. Employment status | -.02 | .13** | .23** | -.02 | -.20** | .15** | - | | | | |
| 8. Trauma in last year | .18** | .10** | -.14** | -.01 | -.08* | .04 | .04 | - | | | |
| 9. CSA only | -.01 | -.05 | -.05 | -.01 | -.04 | .01 | -.02 | -.04 | - | | |
| 10. Multiple traumas incl CSA | .23** | .10** | -.19** | -.08* | -.06 | .08* | .02 | .11** | -.05 | - | |
| 11. Other trauma (excl CSA) | .09** | .02 | .00 | .02 | .04 | -.03 | -.02 | .18** | -.13** | -.36** | - |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

### *Hierarchal Multiple Regression Analysis*

Hierarchical multiple regression (HMR) analysis takes into account the intercorrelations among the variables when assessing the individual and collective impact of independent variables on a dependent variable. HMR also provides a means of evaluating the variance explained by an independent variable at its own point of entry into the equation (Hair, Anderson, Tatham, & Black, 1998). Therefore, as dictated by the objectives of the current study, relevant demographic and background variables that had a significant relationship with the dependent variable were entered in on step 1 of each HMR analysis. On step 2, the dummy variables reflecting traumatic experiences of CSA only, experiences of multiple types of traumatic events including CSA, and experiences of traumatic events other than CSA were entered into the analysis. Women who had not experienced any type of traumatic event in their lifetime were included in the reference category, which is represented implicitly in the data (Cohen & Cohen, 1983).

### *$R^2$, Adjusted $R^2$, & Change in $R^2$*

For each HMR analysis the $R^2$, adjusted $R^2$, and the change in $R^2$ have been reported. $R^2$ reflects the total variance explained by the set of independent variables collectively in the dependent variable, while the adjusted $R^2$ takes into account the inflation in $R^2$ due to the number of variables in the model and sample size (Hair et al., 1998). The change in $R^2$ indicates the additional variance explained in the dependent variable by the set of

independent variables entered in on subsequent steps of the analysis (Tabachnick & Fidell, 2001). The unstandardised (*B*) and standardised regression coefficients (β) have also been reported. Presented below in Table 12 are the results of the HMR analysis examining the impact of the predictor variables on current levels of PTSD symptomatology.

**Table 12**

*Summary of Hierarchical Regression Analysis for Variables Predicting Current PTSD Symptomatology among All Women (N = 939)*

| | Step 1 | | Step 2 | |
|---|---|---|---|---|
| | *B* | β | *B* | β |
| Life events | .01 | .26 ** | .01 | .19 ** |
| Ethnicity | .00 | .01 | .00 | .00 |
| Age | -.00 | -.09 * | -.00 | -.05 |
| Area of residence | -.02 | -.09 ** | -.02 | -.08 * |
| Marital status | .02 | .08 * | .02 | .07 * |
| | | | | |
| CSA only | | | .10 | .11 ** |
| Multiple traumas incl. CSA | | | .12 | .32 ** |
| Other traumas (excl. CSA) | | | .04 | .19 ** |
| | | | | |
| ***R*** | | .34 ** | | .45 ** |
| ***R²*** | | .12 | | .21 |
| ***Adjusted R²*** | | .11 | | .20 |
| ***R² change*** | | .12 ** | | .09 ** |

** $p<.01$, * $p<.05$

After step 1, the *R* for the regression was significantly different from zero, $F(5, 933) = 24.66$, $p < .01$. Life events, age, area of residence, and marital status each contributed significantly to the prediction of PTSD symptomatology. However, once the intercorrelations among the predictor variables had been taken into account, ethnicity was no longer associated with PTSD. Altogether 12% (11% adjusted) of the variability in PTSD symptomatology was predicted by knowing the scores on these variables.

After step 2 with the addition of the traumatic experience variables to the equation, $R^2 = .21$, $F(8, 930) = 29.96$, $p < .01$, there was a significant increment in $R^2$ ($R^2$ change = .09, $p < .01$). Each type of traumatic experience contributed significantly to the prediction of PTSD symptomatology. That is, significant mean differences in PTSD symptomatology

were found in women who had experienced some form of traumatic event in comparison to the reference group. On average, women who had experienced a traumatic event reported higher levels of PTSD symptomatology. Altogether, 21% (20% adjusted) of the variability in PTSD symptomatology was predicted by knowing the scores on these variables.

### *Multiple Regression Assumptions*

The assumptions of multiple regression were examined following the HMR analysis using the strategies recommended by Hair and colleagues (1998) and Pallant (2001). Data analysis revealed that the assumptions of multicollinearity, normality, linearity, homoscedascity, and independence of residuals were all adequately met. The ratio of cases-to-independent variables was also adequate following the use of listwise deletion to delete cases with missing data. Furthermore, no multivariate outliers were detected. Unless otherwise stated, these assumptions have also been adequately met for all other HMR analyses performed.

### *Psychological Distress*

Due to the well documented interrelationships between mental and physical health variables in the literature (e.g., Flett et al., 1996) the physical health variables were introduced as control variables into the following analysis of psychological distress. The bivariate relationship between each of the predictor variables and psychological distress is presented above in Table 10. Table 10 indicates that there is a significant positive relationship between psychological distress and physical health symptoms, chronic health, life events, ethnicity, marital status, and trauma exposure during the previous year. That is, women who are currently experiencing higher levels of psychological distress tend to be Māori, unmarried, and have recently experienced a traumatic event, as well as a greater number of life events, physical health symptoms, and chronic health problems on average. Table 10 also reveals a significant negative relationship between psychological distress and age, area of residence, and level of education. That is, women experiencing higher levels of psychological distress tend to be younger, living in urban areas, and have fewer qualifications on average.

Table 10 also indicates that there is a significant positive relationship between psychological distress and traumatic experiences involving CSA. That is, women who have experienced a traumatic event involving CSA tend to report higher levels of current psychological distress on average.

The magnitude of each of these relationships with psychological distress indicates that physical health symptoms are explaining the largest amount of variance (26%), followed by life events (10%), experiences of multiple traumatic events including CSA (7%), and age (4%).

***PTSD Mediation***

It has been proposed that PTSD symptomatology mediates the main effect of trauma on mental and physical health outcomes. According to Baron and Kenny (1986) a variable functions as a mediator if it meets the following conditions as outlined below in Figure 1:

(a) Variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path *a*),

(b) Variations in the mediator significantly account for variations in the dependent variable (i.e., Path *b*), and

(c) When Paths *a* and *b* are controlled, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when Path *c* is zero.

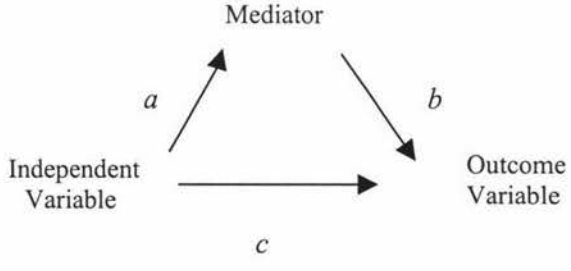


**Figure 1.** *Mediational Model*

In the current study Path *a* was examined at the bivariate level. Path *b* and *c* were examined in subsequent steps of the HMR analysis, after significant demographic and background variables had been controlled for. The results of the HMR analysis of psychological distress are presented below in Table 13.

**Table 13**

*Summary of Hierarchical Regression Analysis for Variables Predicting Current Psychological Distress among All Women (N = 903)*

| | Step 1 | | Step 2 | | Step 3 | |
|---|---|---|---|---|---|---|
| | *B* | β | *B* | β | *B* | β |
| Physical health | 7.41 | .47 ** | 7.15 | .45 ** | 4.26 | .27 ** |
| Chronic health | .04 | .01 | .01 | .00 | .21 | .04 |
| Life events | .10 | .14 ** | .09 | .12 ** | .05 | .07 * |
| Ethnicity | -.09 | -.03 | -.08 | -.02 | -.11 | -.03 |
| Age | -.02 | -.20 ** | -.02 | -.17 ** | -.01 | -.14 ** |
| Area of residence | -.26 | -.08 ** | -.24 | -.08 ** | -.14 | -.04 |
| Level of education | -.04 | -.05 | -.04 | -.04 | -.03 | -.03 |
| Marital status | .10 | .03 | .08 | .02 | .01 | .00 |
| Trauma in last year | .16 | .03 | .10 | .02 | .20 | .04 |
| CSA only | | | 1.06 | .08 ** | .44 | .04 |
| Multiple traumas incl. CSA | | | .64 | .13 ** | .00 | .00 |
| Other traumas (excl. CSA) | | | .13 | .04 | -.11 | -.03 |
| PTSD | | | | | 6.57 | .48 ** |
| ***R*** | | .59 ** | | .61 ** | | .72 ** |
| ***R²*** | | .35 | | .37 | | .52 |
| ***Adjusted R²*** | | .34 | | .36 | | .52 |
| ***R² change*** | | .35 ** | | .02 ** | | .16 ** |

** $p<.01$, * $p<.05$

After step 1, the *R* for the regression was significantly different from zero, $F(9, 893) = 53.05$, $p < .01$. Physical health symptoms, life events, age, and area of residence each contributed significantly to the prediction of psychological distress. On the other hand chronic health problems, ethnicity, level of education, marital status, and exposure to a traumatic event in the previous year were no longer associated with psychological distress once the intercorrelations among the predictor variables had been taken into account. Altogether 35% (34% adjusted) of the variability in psychological distress was predicted by knowing the scores on these variables.

After step 2, with the addition of the trauma variables to the equation, $R^2 = .37$, $F(12, 890) = 42.85$, $p < .01$. The inclusion of the trauma variables to the model resulted in a

significant increment in $R^2$ ($R^2$ change = .02, $p$ <.01). Each type of traumatic experience involving CSA contributed significantly to the prediction of psychological distress. In other words, significant mean differences in psychological distress were found between women with histories of CSA and the reference group. The regression coefficients indicate that women who have experienced CSA tend to report higher levels of PTSD symptomatology on average. Altogether 37% (36% adjusted) of the variability in psychological distress was predicted by knowing the scores on these variables.

After step 3, with the addition of PTSD symptomatology to the equation, $R^2$ = .52, $F$(13, 889) = 74.68, $p$ <.01. The inclusion of PTSD symptomatology resulted in a significant increase in $R^2$ ($R^2$ change = .16, $p$ <.01), and altogether 52% (52% adjusted) of the variability in psychological distress was predicted by knowing the scores on these variables. The change in the regression coefficients on step 3 of the analysis associated with the main effects of traumatic experiences involving CSA indicates that PTSD symptomatology is partially mediating these effects on psychological distress.

***Physical Health Symptoms***

The bivariate relationship between physical health symptoms and the predictor variables is presented above in Table 10. Table 10 indicates that there is a significant positive relationship between physical health symptoms and chronic health problems, life events, marital and employment status. That is, women who report a greater number of chronic health problems and life events, on average tend to report higher levels of physical health symptoms. On average, these women also tend to be currently unmarried and not in paid employment. Table 10 also reveals a significant negative relationship between physical health symptoms and area of residence, as well as level of education. That is, on average women who are currently experiencing higher levels of physical health symptoms tend to be living in urban areas and have fewer qualifications.

Among the trauma variables, Table 10 indicates that there is a significant positive relationship between physical health symptoms and experiences of multiple types of traumatic events including CSA, as well as traumatic experiences other than CSA. That is, women with these types of trauma histories tend to report higher levels of physical health symptoms on average.

The magnitude of each of these relationships with physical health symptoms indicates that chronic health problems are explaining the largest amount of variance (21%), followed by life events (5%), and experiences of multiple types of traumatic experiences including CSA (3%).

Table 10 also indicates that there is a significant positive relationship between physical health symptoms and PTSD symptomatology. Therefore the potentially mediating effects of PTSD were examined in the HMR analysis. The results of the HMR are presented below in Table 14. The control variables were entered in on step 1 of the analysis, followed by the trauma variables on step 2, and PTSD on step 3.

**Table 14**

*Summary of Hierarchical Regression Analysis for Variables Predicting Current Physical Health Symptoms among All Women (N = 911)*

| | Step 1 | | Step 2 | | Step 3 | |
|---|---|---|---|---|---|---|
| | *B* | β | *B* | β | *B* | β |
| Chronic health | .16 | .45 ** | .16 | .44 ** | .15 | .42 ** |
| Life events | .01 | .23 ** | .01 | .19 ** | .01 | .12 ** |
| Are of residence | -.01 | -.03 | -.01 | -.03 | -.00 | -.00 |
| Level of education | -.00 | -.02 | -.00 | -.02 | -.00 | -.02 |
| Marital status | .00 | .02 | .00 | .02 | .00 | .00 |
| Employment status | -.00 | -.02 | -.00 | -.01 | -.00 | -.03 |
| CSA only | | | .02 | .02 | -.01 | -.02 |
| Multiple traumas incl. CSA | | | .04 | .14 ** | .01 | .03 |
| Other traumas (excl. CSA) | | | .01 | .07 * | .00 | .01 |
| PTSD | | | | | .30 | .35 ** |
| ***R*** | | .51 ** | | .53 ** | | .61 ** |
| ***R²*** | | .26 | | .28 | | .37 |
| ***Adjusted R²*** | | .25 | | .27 | | .37 |
| ***R² change*** | | .26 ** | | .02 ** | | .10 ** |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero, $F(6, 904) = 52.66$, $p < .01$. Chronic health and life events each contributed significantly to the prediction of physical health symptoms. On the other hand, area of residence, level of

education, marital and employment status were no longer shown to have an impact on physical health symptoms once the intercorrelations among the predictor variables had been taken into account. Altogether 26% (25% adjusted) of the variability in physical health symptoms was predicted by knowing the scores on these variables.

After step 2, with the inclusion of the trauma variables to the equation, $R^2 = .28$, $F(9, 901) = 38.06$, $p < .01$. The inclusion of these variables to the model resulted in a significant increment in $R^2$ ($R^2$ change = .02, $p < .01$). Experiences of multiple types of traumatic events including CSA, as well as traumatic experiences which did not involve CSA, both contributed significantly to the prediction of physical health symptoms. In other words, significant mean differences in physical health symptoms were found between women with these types of trauma histories and the reference group. Altogether, 28% (27% adjusted) of the variability in physical health symptoms was predicted by knowing the scores on these variables.

After step 3, with the addition of PTSD symptomatology to the equation, $R^2 = .37$, $F(10, 900) = 53.35$, $p < .01$. The inclusion of PTSD symptomatology resulted in a significant increment in $R^2$ ($R^2$ change = .10, $p < .01$). Altogether 37% (37% adjusted) of the variability in physical health symptoms was predicated by knowing the scores on these variables. The change in the regression coefficients on step 3 of the analysis associated with the main effects of the trauma variables, which were shown on step 2 to have a significant relationship with physical health symptoms, indicates that PTSD symptomatology is partially mediating these effects.

***Chronic Health Problems***

The bivariate relationship between chronic health and the independent variables is presented above in Table 10. Table 10 indicates that there is a significant positive relationship between chronic health and physical health symptoms, age, marital and employment status. That is, women who are currently experiencing a number of physical health symptoms tend to also report a greater number of chronic health problems on average. Women who report a greater number of chronic health problems also tend to be on average older, unmarried, and not currently in paid employment.

On the other hand, Table 10 indicates that there is a significant negative relationship between chronic health problems and level of education. That is, women with fewer educational qualifications tend to report higher levels of chronic health problems on average. Table 10 also indicates that chronic health is not significantly associated with any type of traumatic experience. Therefore the conditions required to test for a PTSD mediation effect have also not been met.

The magnitude of each of the above relationships with chronic health indicates that age and physical health symptoms are explaining the largest amount of variance (21%), followed by employment status (4%).

The results of the HMR analysis are presented below in Table 15. The control variables were entered in on step 1 of the analysis followed by the trauma variables on step 2.

**Table 15**

*Summary of Hierarchical Regression Analysis for Variables Predicting Chronic Health Problems among All Women (N = 909)*

| | Step 1 | | Step 2 | |
|---|---|---|---|---|
| | *B* | β | *B* | β |
| Physical health | 1.19 | .43 ** | 1.16 | .42 ** |
| Age | .01 | .44 ** | .01 | .45 ** |
| Level of education | -.00 | -.02 | -.00 | -.02 |
| Marital status | .01 | .02 | .01 | .02 |
| Employment status | .03 | .06 * | .03 | .05 * |
| | | | | |
| CSA only | | | .00 | .00 |
| Multiple traumas incl. CSA | | | .04 | .05 |
| Other traumas (excl. CSA) | | | .03 | .06 |
| | | | | |
| ***R*** | | .64 ** | | .64 ** |
| ***R²*** | | .41 | | .42 |
| ***Adjusted R²*** | | .41 | | .41 |
| ***R² change*** | | .41 ** | | .00 |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero, $F(5, 903) = 126.23$, $p < .01$. Physical health symptoms, age, and employment status each contributed

significantly to the prediction of chronic health problems. On the other hand, marital status and level of education were no longer associated with chronic health problems once the intercorrelations among the predictor variables had been taken into account. Altogether 41% (41% adjusted) of the variability in chronic health was predicted by knowing the scores on these variables.

After step 2, with the inclusion of the trauma variables to the equation, $R^2 = .42$, $F(8, 900) = 79.73$, $p < .01$. However, the addition of the trauma variables to the model resulted in a non-significant change in $R^2$ ($R^2$ change = .00, $p = .16$). Therefore, the type of trauma experienced was not shown to have an impact on chronic health.

***Health Care Use***

The bivariate relationship between health care use and the predictor variables is reported above in Table 10. Table 10 indicates that there is a significant positive relationship between health care use and physical health symptoms, chronic health problems, life events, and level of education. That is, women who report higher levels of physical health symptoms, chronic health problems, life events, and fewer educational qualifications, on average tend to use more health care services measured at an aggregate level. Table 10 also reveals a significant negative relationship between ethnicity and health care use. That is, Māori women tend to use less health care services on average in comparison to non-Māori women.

Among the trauma variables, Table 10 indicates that there is a significant positive relationship between health care use and experiences of traumatic events other than CSA. That is, women who have experienced a traumatic event other than CSA tend to use more health care services on average.

The magnitude of each of the above relationships with health care use indicates that physical health symptoms are explaining the largest amount of variance (8%), followed by chronic health problems (6%), and life events (3%).

Table 10 also reveals a significant positive relationship between PTSD symptomatology and health care use. Consequently, the impact of PTSD symptomatology was examined in the HMR analysis. The results of the HMR analysis are presented below in Table 16. The

control variables were entered in on step 1 of the analysis, followed by the trauma variables on step 2, and PTSD on step 3.

**Table 16**

*Summary of Hierarchical Regression Analysis for Variables Predicting Health Care Use among All Women (N = 904)*

| | Step 1 | | Step 2 | | Step 3 | |
|---|---|---|---|---|---|---|
| | *B* | β | *B* | β | *B* | β |
| Physical health | 2.12 | .16 ** | 2.06 | .15 ** | 2.02 | .15 ** |
| Chronic health | .98 | .20 ** | .98 | .20 ** | .98 | .20 ** |
| Life events | .11 | .17 ** | .10 | .16 ** | .10 | .16 ** |
| Ethnicity | -.28 | -.10 ** | -.28 | -.10 ** | -.28 | -.10 ** |
| Level of education | .07 | .09 ** | .07 | .09 ** | .07 | .09 ** |
| CSA only | | | -.03 | -.00 | -.04 | -.00 |
| Multiple traumas incl. CSA | | | .10 | .02 | .09 | .02 |
| Other traumas (excl. CSA) | | | .09 | .04 | .09 | .04 |
| PTSD | | | | | .09 | .01 |
| ***R*** | | .37 ** | | .37 ** | | .37 ** |
| ***R²*** | | .14 | | .14 | | .14 |
| ***Adjusted R²*** | | .13 | | .13 | | .13 |
| ***R² change*** | | .14 ** | | .00 | | .00 |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero, $F(5, 898) = 29.01$, $p < .01$. Each of the predictor variables examined contributed significantly to the prediction of health care use. Altogether 14% (13% adjusted) of the variability in health care use was predicted by knowing the scores on each of these variables.

After step 2, with the inclusion of the trauma variables to the equation, $R^2 = .14$, $F(8, 895) = 18.24$, $p < .01$. However, the inclusion of the trauma variables to the model resulted in non-significant change in $R^2$ ($R^2$ change = .00, $p = .76$). Therefore the type of trauma experienced was not shown to have an impact on health care use and the conditions required to test for PTSD mediation were not met. After step 3, with the inclusion of PTSD symptomatology to the equation, $R^2 = .14$, $F(9, 894) = 16.20$, $p < .01$). However, the inclusion of PTSD symptomatology to the model also resulted in a non-significant change in $R^2$ ($R^2$ change = .00, $p = .84$).

## 10. Impact of CSA Characteristics & Contextual Factors

The analyses in the previous section focused on the impact of different types of traumatic experiences on the current mental and physical health functioning among all women surveyed. In contrast, the focus of this section is on the women who reported histories of childhood sexual abuse (CSA), and the impact of CSA characteristics and contextual factors on current mental and physical health functioning. The potentially mediating effects of Posttraumatic Stress Disorder (PTSD) symptomatology between trauma and subsequent outcomes are also examined.

### *Socio-Demographic Information*

Socio-demographic information pertaining to the women who reported histories of CSA along with relevant coding algorithms are presented below in Table 17. Table 17 indicates that 45% ($n$ = 58) of the 130 women who reported experiences of CSA identified themselves as Māori. Māori women are therefore over represented in the group of women with histories of CSA relative to their expected frequency based on the sampling strategy used. The majority of the remaining respondents were New Zealand (NZ) Europeans. Table 17 also indicates that a greater number of women with histories of CSA currently live in urban (61%), as opposed to rural areas (39%). The age of the women surveyed ranged from 20 to 68 years ($M$ = 35.79, $SD$ = 11.40). Altogether 39% of women were either in paid full or part time employment. The majority of respondents who were not currently in any type paid employment were either beneficiaries or unemployed. In comparison to all women surveyed, these findings indicate that women with histories of CSA tend to be younger, unmarried, have fewer educational qualifications, and are also more likely to be in receipt of a benefit.

### *Descriptive Statistics*

Relevant descriptive statistics (means and SD) pertaining to the variables examined are presented below in Table 18. Prior to analysis several variables (control, physical injury, and unexpected) were transformed into dichotomous variables due to the distribution of responses on the original measures. Preliminary data screening also revealed evidence of missing data. Of the 130 women who reported histories of CSA, 9 respondents did not answer any further questions pertaining to the abuse. A further 2 cases on chronic health

and 1 case on PTSD were identified as univariate outliers with high z scores and were subsequently deleted from relevant analyses.

**Table 17**

*Summary Socio-Demographic Information for Women with Histories of CSA*

| | No. | % | Coding Algorithm |
|---|---|---|---|
| Ethnicity | | | |
| NZ Māori | 58 | 45 | 1=Non-Māori, |
| NZ European | 67 | 52 | 2=Māori |
| Pacific Island | 4 | 3 | |
| Area of residence | | | |
| Urban | 79 | 61 | 1=Urban, |
| Rural | 50 | 39 | 2=Rural |
| Age (Years) | | | |
| 18 – 29 | 42 | 33 | Age in Years |
| 30 – 39 | 52 | 40 | |
| 40 – 49 | 17 | 13 | |
| 50 – 59 | 11 | 9 | |
| 60 – 69 | 7 | 5 | |
| Marital status | | | |
| Married | 64 | 50 | 1=Married, |
| Never married | 34 | 27 | 2=Unmarried |
| Separated/Divorced | 27 | 21 | |
| Widowed | 3 | 2 | |
| Primary work role | | | |
| Full time paid employment | 19 | 15 | 1=Paid Employment, |
| Part time paid employment | 31 | 24 | 2=Not in paid employment |
| Unemployed | 18 | 14 | |
| Retired | 6 | 5 | |
| Student | 5 | 4 | |
| Beneficiary | 42 | 32 | |
| House-wife, parent | 8 | 6 | |
| Highest educational qualification | | | |
| No school qualification | 66 | 52 | 1=No School Qualifications, |
| Secondary school qualification | 41 | 32 | 2=School Cert, 3=6$^{th}$ Form/ |
| Trade or professional qualification | 15 | 12 | Uni Entrance, 4=Bursary/ |
| University qualification | 5 | 4 | Scholarship, 5=Trade/Prof |
| | | | 6=Uni Degree, 7=Postgrad. |

**Table 18**

*Descriptive Statistics and Coding Algorithms for Women with Histories of CSA*

| | Mean | SD | Coding Algorithm | Min. Score | Max. Score |
|---|---|---|---|---|---|
| PTSD | 27.87 | 6.92 | Score on the modified version of the CMS | 11 | 55 |
| Psychological distress | 75.40 | 26.55 | Score on MHI psychological distress subscale | 24 | 112 |
| Physical health | 44.18 | 12.22 | Composite symptom score on the modified version of the PILL | 28 | 104 |
| Chronic health | 1.49 | 1.78 | No. of chronic health problems | 0 | 17 |
| Health care use | 2.98 | 1.39 | No. of health care services used | 0 | 6 |
| Life events | 4.00 | 2.21 | No. of life events | 0 | 20 |
| No. of traumatic events | 3.80 | 1.97 | Score on the modified version of the TSS | 0 | 13 |
| CSA duration | 4.32 | 4.15 | No. of years | | |
| CSA multiple events | 1.26 | .44 | 1=Yes, 2=No | | |
| Years since CSA | 24.04 | 12.39 | Total no. of years | | |
| Physical injury | 1.18 | .39 | 1=No injury, 2=Physical injury | | |
| Life threat | 2.28 | 1.60 | Score on 5-point Scale; 1=I did not think that I would die – 5=I really believed that I would die | | |
| Main cause | 2.13 | .57 | Score on 4-item Scale; 1=My own actions, 2=Actions of others, 3=Mechanical, technical or industrial problem, 4=Natural forces | | |
| Control | 1.27 | .45 | 1=No Control, 2=Control | | |
| Unexpected | 1.19 | .39 | 1=Unexpected, 2=Expected | | |
| How distressing | 4.33 | .95 | Score on 5-point Scale; 1=Not at all distressing, 2=Slightly distressing, 3=Moderately distressing, 4=Very distressing, 5=Extremely distressing | | |
| How affected | 2.45 | .97 | Score on 5-point Scale; 1=Only negative effects, 2=Mostly negative effects, 3=Both positive & negative effects, 4=Mostly positive effects, 5=Only positive effects | | |
| Overall life effect | 3.74 | 1.23 | Score on 5-point Scale; 1=No effect, 2=Slight effect, 3=Moderate effect, 4=Strong effect, 5=Extreme effect | | |
| Talked about CSA | 2.50 | 1.10 | Score on 5-point Scale; 1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Very often | | |
| Confided feelings about CSA | 2.74 | 1.23 | Score on 5-point Scale; 1=None of my feelings, 2=Very few of my feelings, 3=Some of my feelings, 4=Most of my feelings, 5=All of my feelings | | |

The results reported above in Table 18 indicate that women with histories of CSA are currently experiencing on average higher levels of PTSD symptomatology, psychological distress, physical health symptoms, and life events in comparison to that of all women surveyed. These results also indicate that the majority (74%) of women with histories of CSA experienced multiple CSA episodes. Table 18 indicates that the average duration of CSA was approximately 4 years and that the mean number of years since the abuse last occurred is 24. In addition, the abuse was mostly unexpected (81%) and the majority of victims believed that they had no control (73%). Most cases of CSA however did not involve physical injury (82%). Furthermore, on average the women surveyed did not believe that they would die during the abuse but found the experience to be very distressing, and believe that the experience has had a negative and moderate-to-strong effect on their lives as a whole. Moreover, on average the women surveyed had spoken infrequently about the abuse and had not confided all of their related feelings in others.

The results presented in Table 18 also indicate that the majority of women attributed the cause of CSA to external factors. However, due to the extreme split in appraisals (internal $n = 3$, external $n = 112$), this variable was deleted from subsequent analyses. Furthermore, a large number of respondents volunteered information about the type of CSA experienced, as well as the identity of the perpetrator. Of the 66 women who volunteered information about the type of CSA experienced, approximately 40% ($n = 26$) were molested, 30% ($n = 20$) had experienced an attempted rape, and a further 30% ($n = 20$) had experienced CSA which involved rape. However, no attempt was made to explore these details any further with the respondents. The identity of the perpetrator was known by all women who volunteered this information. Over half (55%) of the reported assailants were family members. However, these variables were also omitted from further inferential analyses due to the impact their inclusion would have on the power and ratio of cases-to-independent variables in each analysis.

The minimum ratio of cases-to-independent variables required for hierarchical multiple regression analysis (HMR) analysis is 5:1 (Hair et al., 1998). When the ratio falls below this level there is a risk of overfitting the solution to the data, making the results too specific to the sample and lacking generalisability (Hair et al., 1998). In addition, the sample size has a direct impact on the power of the analysis. With fewer cases there is a

greater risk of failing to detect relationships that actually exist or making Type II errors (Cohen & Cohen, 1983).

Finally, prior to any further analyses being performed logarithmic transformations were used to substantially improve the distributions of both physical health symptoms and chronic health problems. Subsequent references to each of these variables pertain to their transformations.

In summary, the analyses in this section have several objectives. The first objective is to examine the impact of CSA characteristics and contextual factors on the current mental and physical health functioning of women with histories of CSA, over and above that accounted for by relevant demographic and background variables. The second objective is to examine the potentially mediating effects of PTSD symptomatology between trauma and subsequent outcomes. The specific hypotheses examined include (4) that CSA characteristics and contextual factors will make a unique and significant contribution to the variance explained in current mental and physical health functioning, over and above that explained by significant demographic and background variables, and (5) that PTSD symptomatology will partially mediate the impact of trauma on subsequent outcomes. Analyses focusing on PTSD symptomatology are presented first and are followed by those examining psychological distress, physical health symptoms, chronic health problems, and health care use.

***Bivariate Relationships & Intercorrelations among the Predictor Variables***

The bivariate relationship between each of the independent and dependent variables is presented below in Table 19. The intercorrelations among the predictor variables are presented in Table 20. The correlation coefficients reported in Table 20 again point to the need to statistically control for these relationships when evaluating the impact of an independent variable on a dependent variable. Table 20 also reveals a near perfect correlation or collinearity between age and the number of years since the last experience of CSA. "Because the independent variables involved lay claim to largely the same portion of the Y variance, by definition they cannot make much by way of unique contributions" (Cohen & Cohen, 1983, p. 115). Therefore, the variable representing the number of years since CSA was omitted from subsequent analyses.

**Table 19**

*Bivariate Relationship between the Predictor and Dependent Variables among Women with Histories of CSA*

| | PTSD | Psychological Distress | Physical Health | Chronic Health | Health Care Use |
|---|---|---|---|---|---|
| Life events | .26 ** | .23 ** | .05 | .02 | .09 |
| Ethnicity | .16 | .06 | -.06 | -.06 | -.09 |
| Age | -.14 | -.01 | .11 | .29 ** | .07 |
| Area of residence | -.10 | -.07 | -.02 | -.01 | .24 ** |
| Level of education | -.20 * | -.18 * | -.01 | -.02 | .04 |
| Marital status | .07 | .15 | .07 | -.04 | -.10 |
| Employment status | .15 | .03 | .08 | .08 | .10 |
| Total no. of traumatic events | .14 | .16 | .24 ** | .11 | .09 |
| Duration | .02 | -.01 | .09 | .11 | -.02 |
| Multiple CSA experiences | .01 | .09 | .04 | .00 | -.03 |
| Years since CSA | -.15 | .00 | .01 | .25 * | .05 |
| Physical injury | .22 * | .04 | .22 * | .31 ** | .15 |
| Life threat | .27 ** | .16 | .17 | .07 | -.01 |
| Control | -.09 | -.06 | -.04 | .00 | -.25 ** |
| Unexpected | -.14 | -.12 | -.05 | -.00 | -.06 |
| How distressing | .14 | .04 | .19 * | .08 | .11 |
| How affected | -.17 | -.09 | -.01 | -.05 | -.08 |
| Overall life effect | .31 ** | .19 * | .17 | -.02 | .20 * |
| Talked about CSA | -.08 | -.02 | .06 | .01 | .02 |
| Confided feelings | -.10 | -.13 | .02 | .04 | -.00 |
| PTSD | - | .64 ** | .33 ** | .08 | .11 |
| Psychological distress | | - | .46 ** | .15 | .16 |
| Physical health | | | - | .46 ** | .18 * |
| Chronic health | | | | - | .20 * |
| Health care use | | | | | - |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

**Table 20**

*Bivariate Relationship among the Predictor Variables for Women with Histories of CSA*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Life events | - | | | | | | | | | | | | | | | | | | | |
| 2. Ethnicity | .37** | - | | | | | | | | | | | | | | | | | | |
| 3. Age | -.39** | -.39** | - | | | | | | | | | | | | | | | | | |
| 4. Area of residence | -.04 | .08 | .00 | - | | | | | | | | | | | | | | | | |
| 5. Level of education | -.08 | -.26** | -.07 | .02 | - | | | | | | | | | | | | | | | |
| 6. Marital status | .13 | .09 | -.15 | -.10 | -.10 | - | | | | | | | | | | | | | | |
| 7. Employment status | .07 | .25** | -.03 | -.11 | -.38** | .09 | - | | | | | | | | | | | | | |
| 8. Total no. traumas | .21* | .16 | -.05 | -.01 | -.07 | -.03 | .06 | - | | | | | | | | | | | | |
| 9. Duration | -.10 | -.08 | .20 | .12 | .06 | -.21 | -.17 | .21 | - | | | | | | | | | | | |
| 10. Multiple CSA | -.17 | -.03 | .05 | .04 | .06 | -.01 | .00 | -.05 | -.47* | - | | | | | | | | | | |
| 11. Years since CSA | -.36** | -.38** | .94** | -.09 | -.13 | -.15 | .00 | -.09 | -.04 | .13 | - | | | | | | | | | |
| 12. Physical injury | .06 | .25** | -.05 | .06 | -.09 | .18 | .34** | .13 | .12 | -.03 | -.08 | - | | | | | | | | |
| 13. Life threat | .25** | .35** | -.12 | .01 | -.27** | .07 | .28** | .09 | -.11 | .00 | -.11 | .47** | - | | | | | | | |
| 14. Control | -.06 | -.10 | -.12 | .05 | .08 | .12 | -.17 | .00 | -.06 | .23* | -.15 | -.14 | -.23* | - | | | | | | |
| 15. Unexpected | -.07 | -.15 | .06 | .05 | .13 | .01 | -.17 | -.03 | .32** | -.14 | .00 | -.11 | -.30** | .14 | - | | | | | |
| 16. How distressing | .14 | .28** | -.13 | .06 | -.27** | .02 | .17 | .14 | .15 | -.13 | -.22* | .25** | .30** | -.28** | -.03 | - | | | | |
| 17. How affected | .00 | .04 | -.07 | .16 | -.06 | -.03 | .01 | .05 | .09 | .09 | -.05 | .07 | .05 | .01 | -.03 | -.02 | - | | | |
| 18. Overall life effect | .12 | .03 | -.01 | .08 | -.04 | .01 | .04 | .03 | .06 | -.32** | -.06 | .24** | .18 | -.17 | .09 | .26** | .06 | - | | |
| 19. Talked about CSA | -.05 | -.05 | -.03 | .10 | -.01 | -.16 | -.01 | -.04 | -.05 | -.28** | -.05 | -.11 | .03 | .06 | .15 | -.04 | .06 | .35** | - | |
| 20. Confided feelings | -.03 | -.07 | -.07 | .06 | .03 | -.19* | .02 | -.01 | .00 | -.23* | -.09 | -.06 | -.04 | .09 | .09 | .06 | -.03 | .18 | .62** | - |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

***PTSD Symptomatology***

Table 19 indicates that among the control variables there is a significant positive relationship between PTSD symptomatology and life events. That is, women who have experienced a greater number of life events tend to also report higher levels of PTSD symptomatology on average. Table 19 also reveals a significant negative relationship between PTSD symptomatology and level of education. In other words, women with fewer qualifications tend to report higher levels of PTSD symptomatology on average.

Among the CSA trauma variables, Table 19 indicates that there is a significant positive relationship between PTSD symptomatology and physical injury, as well as appraisals of life threat, and overall life effect. In other words, women who were physically injured and who thought their life was in danger during CSA tend to report higher levels of PTSD symptomatology on average. In addition, women who believe that CSA has had a profound effect on their life as a whole, on average tend to report higher levels of PTSD symptomatology.

The magnitude of each of these relationships with PTSD symptomatology indicates that appraisals of CSA overall life effect is explaining the largest amount of variance (9%), followed by appraisals of life threat (8%), life events (7%), and physical injury (5%).

***Hierarchal Multiple Regression Analyses***

Following the rationale and strategy used in the previous section, the control variables that had a significant relationship with the dependent variable at the bivariate level were entered in on step 1 of each HMR analysis. The CSA characteristics and contextual factors that had a significant relationship with the dependent variable were subsequently entered in on step 2. Presented below in Table 21 are the results of the HMR analysis examining the impact of the predictor variables on current PTSD symptomatology.

**Table 21**

*Summary of Hierarchical Regression Analysis for Variables Predicting Current PTSD Symptomatology among Women with Histories of CSA (N = 107)*

| | Step 1 | | Step 2 | |
|---|---|---|---|---|
| | *B* | β | *B* | β |
| Level of education | -.80 | -.19 * | -.54 | -.13 |
| Life events | .86 | .28 ** | .59 | .19 * |
| Physical injury | | | 1.08 | .06 |
| Life threat | | | .71 | .17 |
| Overall life effect | | | 1.59 | .28 ** |
| ***R*** | | .35 ** | | .50 ** |
| ***R²*** | | .12 | | .25 |
| ***Adjusted R²*** | | .11 | | .22 |
| ***R² change*** | | .12 ** | | .13 ** |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero $F(2, 104) = 7.27$, $p < .01$. Level of education and life events each contributed significantly to the prediction of PTSD symptomatology. Altogether 12% (11% adjusted) of the variability in PTSD symptomatology was predicted by knowing the scores on these variables.

After step 2, with the addition of the trauma variables to the equation $R^2 = .25$ $F(5, 101) = 6.81$, $p < .01$. The inclusion of these variables to the model resulted in a significant increment in $R^2$ ($R^2$ change = .13, $p < .01$). However, once the intercorrelations among the trauma variables had been taken into account, appraisals of overall life effect was the only CSA trauma variable that significantly contributed to the prediction of PTSD symptomatology. Altogether 25% (22% adjusted) of the variability in PTSD symptomatology was predicted by knowing the scores on these variables.

***Psychological Distress***

The bivariate relationship between psychological distress and the predictor variables is presented above in Table 19. Table 19 indicates that there is a significant positive relationship between psychological distress and physical health symptoms, as well as life events. In other words, women who report a greater number of physical health symptoms and life events tend to also report higher levels of psychological distress on average. In addition, Table 19 indicates that there is a significant negative relationship between psychological distress and level of education attained. In other words, women with fewer qualifications tend to report higher levels of psychological distress on average.

Among the CSA trauma variables, Table 19 indicates that appraisals of overall life effect is the only variable that has a significant relationship with psychological distress. This positive relationship indicates that appraisals of CSA as having a profound effect on the survivor's life as a whole tends to be associated with higher levels of psychological distress on average.

The magnitude of each of the above relationships with psychological distress indicates that physical health symptoms are explaining the largest amount of variance (22%), followed by life events (5%), appraisals of overall life effect (3%), and level of education (3%)

The results of the HMR analysis are presented below in Table 22. The potentially mediating effects of PTSD symptomatology were also examined using the strategy outlined on page 44. Therefore, the control variables were entered in on step 1 of the analysis, followed by the trauma variables on step 2, and PTSD on step 3.

After step 1, the $R$ for the regression was significantly different from zero, $F(3, 112) = 15.06$, $p < .01$. Each of the control variables contributed significantly to the prediction of psychological distress. Altogether 29% (27% adjusted) of the variability in psychological distress was predicted by knowing the scores on these variables.

**Table 22**

*Summary of Hierarchical Regression Analysis for Variables Predicting Psychological Distress among Women with Histories of CSA (N = 116)*

| | Step 1 | | Step 2 | | Step 3 | |
|---|---|---|---|---|---|---|
| | *B* | β | *B* | β | *B* | β |
| Level of education | -2.79 | -.18 * | -2.72 | -.17 * | -1.31 | -.08 |
| Physical health | 104.25 | .46 ** | 97.83 | .43 ** | 67.66 | .30 ** |
| Life events | 2.05 | .18 * | 1.86 | .16 * | .58 | .05 |
| Overall life effect | | | 2.89 | .13 | -.63 | -.03 |
| PTSD | | | | | 2.07 | .54 ** |
| ***R*** | | .54 ** | | .55 ** | | .72 ** |
| $R^2$ | | .29 | | .30 | | .51 |
| ***Adjusted*** $R^2$ | | .27 | | .28 | | .49 |
| $R^2$ ***change*** | | .29 ** | | .02 | | .21 ** |

** $p<.01$, * $p<.05$

After step 2, with the addition of appraisals of overall life effect to the equation, $R^2 = .30$, $F(4, 111) = 12.11$, $p < .01$. However, the inclusion of this variable to the model did not result in a significant increment in $R^2$ ($R^2$ change = .02, $p = .11$). Consequently, there was no trauma main effect for PTSD to mediate. After step 3, with the addition of PTSD symptomatology to the model, $R^2 = .51$, $F(5, 110) = 23.18$, $p < .01$). PTSD symptomatology contributed significantly to the prediction of psychological distress and altogether 51% (49% adjusted) of the variability in psychological distress was predicted by knowing the scores on these variables.

### *Physical Health Symptoms*

The bivariate relationship between physical health symptoms and the predictor variables is presented above in Table 19. Table 19 indicates that there is a significant positive relationship between physical health symptoms and chronic health problems. That is, women who report higher levels of chronic health problems tend to also experience higher levels of physical health symptoms on average.

Among the CSA trauma variables, the total number of traumatic events experienced, physical injury, and appraisals of how distressing the abuse was each have a significant positive relationship with physical health symptoms. That is, women who have experienced a greater number of traumatic events, CSA that involved physical injury, and CSA that was appraised as very distressing tend to report higher levels of physical health symptoms on average.

The magnitude of each of the above relationships with physical health symptoms indicates that chronic health problems are explaining the largest amount of variance (21%), followed by the total number of types of traumatic events experienced (6%), and physical injury (5%).

Table 19 also indicates that there is a significant positive relationship between physical health symptoms and PTSD symptomatology. Therefore, the potentially mediating effects of PTSD were examined in the HMR analysis. The results of the HMR are presented below in Table 23. The control variables were entered in on step 1, followed by the trauma variables on step 2, and PTSD on step 3.

**Table 23**

*Summary of Hierarchical Regression Analysis for Variables Predicting Current Physical Health Symptoms among Women with Histories of CSA (N = 107)*

| | Step 1 | | Step 2 | | Step 3 | |
|---|---|---|---|---|---|---|
| | *B* | β | *B* | β | *B* | β |
| Chronic health | .19 | .48 ** | .18 | .46 ** | .19 | .47 ** |
| Total no. of traumatic events | | | .01 | .12 | .01 | .09 |
| Physical injury | | | .00 | .00 | -.02 | -.06 |
| How distressing | | | .02 | .14 | .01 | .11 |
| PTSD | | | | | .01 | .33 ** |
| ***R*** | | .48 ** | | .52 ** | | .61 ** |
| ***R²*** | | .23 | | .27 | | .37 |
| ***Adjusted R²*** | | .22 | | .24 | | .34 |
| ***R² change*** | | .23 ** | | .04 | | .10 ** |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero, $F(1, 105 = 31.44, p < .01)$. Chronic health problems contributed significantly to the prediction of physical health symptoms. Altogether 23% (22% adjusted) of the variability in physical health symptoms was predicted by knowing the scores on this variable.

After step 2, with the inclusion of the trauma variables to the equation, $R^2 = .27$, $F(4, 102) = 9.46, p < .01$). However, the inclusion of these variables to the model resulted in a non-significant increment in $R^2$ ($R^2$ change = .04, $p < .14$). After step 3, with the addition of PTSD symptomatology to the equation, $R^2 = .37$, $F(5, 101) = 11.88, p < .01$. The inclusion of PTSD symptomatology to the model resulted in a significant increment in $R^2$ ($R^2$ change = .10, $p < .01$). Altogether 37% (34% adjusted) of the variability in physical health symptoms was predicted by knowing the scores on these variables. However, a PTSD mediation effect was not found as all of the required conditions were not met.

***Chronic Health Problems***

The bivariate relationship between chronic health problems and the predictor variables is presented above in Table 19. Table 19 indicates that there is a significant positive relationship between chronic health problems and physical health symptoms, as well as age. That is, women who are older and who report higher levels of physical health symptoms, tend to also experience a greater number of chronic health problems on average.

Among the CSA trauma variables, Table 19 indicates that there is a significant positive relationship between physical injury and chronic health problems. That is, on average women who were physically injured during CSA tend to report more chronic health problems.

The magnitude of each of these relationships with chronic health problems indicates that physical health symptoms are explaining the largest amount of variance (21%), followed by physical injury (10%), and age (8%).

The results of the HMR analysis are presented below in Table 24. The control variables were entered in on step 1, followed by the trauma variables on step 2. The potentially

mediating effects of PTSD were not examined in the HMR analysis as Table 19 indicates that PTSD is not significantly related to chronic health problems at the bivariate level.

**Table 24**

*Summary of Hierarchical Regression Analysis for Variables Predicting Current Chronic Health Problems among Women with Histories of CSA (N = 112)*

| | Step 1 | | Step 2 | |
|---|---|---|---|---|
| | *B* | β | *B* | β |
| Age | .01 | .25 ** | .01 | .27 ** |
| Physical health | 1.21 | .48 ** | 1.08 | .43 ** |
| Physical injury | | | .18 | .24 ** |
| ***R*** | | .56 ** | | .60 ** |
| ***R²*** | | .31 | | .36 |
| ***Adjusted R²*** | | .30 | | .35 |
| ***R² change*** | | .31 ** | | .06 ** |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero, $F(2, 109) = 24.21$, $p < .01$. Physical health symptoms and age both contributed significantly to the prediction of chronic health problems. Altogether 31% (30% adjusted) of the variability in chronic health problems was predicted by knowing the scores on each of these variables.

After step 2, with the addition of physical injury to the equation, $R^2 = .36$, $F(3, 108) = 20.54$, $p < .01$). The inclusion of this variable to the model resulted in a significant increment in $R^2$ ($R^2$ change = .06, $p < .01$). Altogether 36% (35% adjusted) of the variability in chronic health problems was predicted by knowing the scores on each of these variables.

***Health Care Use***

The relationship between health care use and the predictor variables is reported above in Table 19. At a bivariate level, Table 19 indicates that there is a significant positive relationship between health care use measured at an aggregate level and area of residence, physical health symptoms, and chronic health problems. That is, women who use more

health care services on average tend to be living in rural areas, and report higher levels of physical health symptoms, and chronic health problems.

Among the CSA trauma variables, Table 19 indicates that there is a significant positive relationship between health care use and appraisals of overall life effect. That is, women who believe CSA has had a profound effect on their life as a whole tend to use more health care services on average. Table 19 also reveals a significant negative relationship between appraisals of control during CSA and health care use. That is, women who thought that they had no control during the abuse tend to use more health care services on average.

The magnitude of each of these relationships with health care use indicates that appraisals of control during CSA is explaining the largest amount of variance (6%), followed by area of residence (6%), and chronic health problems (4%).

The results of the HMR analysis are presented below in Table 25. The control variables were entered in on step 1 of the analysis, followed by the CSA trauma variables on step 2. The potentially mediating effects of PTSD were not examined in the HMR analysis, as Table 19 indicates that PTSD was not significantly related to health care use at the bivariate level.

**Table 25**

*Summary of Hierarchical Regression Analysis for Variables Predicting Health Care Use among Women with Histories of CSA (N = 117)*

| | Step 1 | | Step 2 | |
|---|---|---|---|---|
| | *B* | β | *B* | β |
| Area of residence | .77 | .27 ** | .78 | .27 ** |
| Physical health | 1.19 | .09 | .78 | .06 |
| Chronic health | .70 | .14 | .79 | .16 |
| Control | | | -.77 | -.24 ** |
| Overall life effect | | | .12 | .10 |
| ***R*** | | .34 ** | | .44 ** |
| ***R²*** | | .11 | | .19 |
| ***Adjusted R²*** | | .09 | | .15 |
| ***R² change*** | | .11 ** | | .08 ** |

** $p<.01$, * $p<.05$

After step 1, the $R$ for the regression was significantly different from zero, $F(3, 113) = 4.78$, $p < .01$. However, area of residence was the only control variable that contributed significantly to the prediction of health care use. Once the intercorrelations among the predictor variables had been taken into account, physical health symptoms and chronic health problems were no longer associated with health care use. Altogether 11% (9% adjusted) of the variability in health care use was predicted by knowing the scores on these variables.

After step 2, with the inclusion of the CSA trauma variables to the model, $R^2 = .19$, $F(5, 111) = 5.19$, $p < .01$. The inclusion of appraisals of control and overall life effect to the equation resulted in a significant increment in $R^2$ ($R^2$ change = .08, $p < .01$). However, once the intercorrelations among the trauma variables had been taken into account, appraisals of control during CSA was the only trauma variable that significantly contributed to the prediction of health care use. Altogether 19% (15% adjusted) of the variability in health care use was predicted by knowing the scores on these variables.

In summary, the impact of CSA characteristics and contextual factors on current mental and physical health functioning among CSA survivors has been examined in this section. The results indicate that CSA characteristics and contextual factors contribute to the variance explained in PTSD symptomatology, chronic health problems, and health care use over and above that accounted for by relevant demographic and background variables. However, no evidence was found to support a PTSD mediation effect. These results are discussed further in the following section.

# 11. Discussion

The current study was based on a survey of a heterogeneous group of women from diverse backgrounds, regions, and areas in New Zealand (NZ) about lifetime exposure to traumatic events. The results clearly indicate that many women in NZ have experienced events of a traumatic nature. Sixty three percent of women surveyed reported experiencing at least one traumatic event in their lifetime. This finding corroborates with prevalence rates reported in earlier surveys (e.g., Kilpatrick et al., 1987; Resnick et al., 1993; Boudreaux et al., 1998; Breslau et al., 1991, 1998; Norris, 1992; Stein et al., 1997). Among all women surveyed, the traumas most frequently experienced involved injury or death to a loved one, as well as events involving interpersonal violence. More specifically, nearly half (49%) of the women surveyed reported traumatic experiences which *did not* involve childhood sexual abuse (CSA). On the other hand, nearly 14% of the women surveyed reported experiencing unwanted sexual experiences prior to the age of 18 years. This CSA prevalence rate corresponds closely to that found in another NZ study (e.g., Fergusson, Lynskey et al., 1996), as well as the mean prevalence rate reported by Bolen (2001) based on studies using a single screening question to identify survivors. However, given that there has been subsequent methodological advances in the assessment of CSA, as well as the disposition of many survivors to deny the occurrence of such experiences (Kaplan, 1996), this figure is possibly a conservative estimate of the actual prevalence rate in NZ.

Among the respondents who reported histories of CSA, a notable finding was that the vast majority of women (88%) had experienced additional types of traumatic events. Green and colleagues (2000) reported a similar finding in their study of sexual assault survivors. The findings of the current study also support a number of other studies which indicate that exposure to CSA is associated with a higher risk of exposure to further events of an interpersonal nature, including domestic violence and sexual assault in adulthood (e.g., Breitenbecher, 2001; Arata, 2000; Green et al., 2000; Boney-McCoy & Finkelhor, 1995). Given that exposure to multiple traumatic events appears to be the rule rather than the exception (Green et al., 2000) unravelling the impact of CSA specifically is a challenging task.

The strategy used in the current study to evaluate the long-term impact of CSA involved identifying women who had experienced CSA only, women who had been exposed to multiple traumatic events including CSA, as well as women who had been exposed to traumatic events other than CSA. The current mental and physical health functioning of women in these groups was then compared to that of women who had not been exposed to any type of traumatic event in their lifetime. The outcome variables examined included current Posttraumatic Stress Disorder (PTSD) symptomatology, psychological distress, physical health symptoms, chronic health problems, and health care use. Based on previous research, trauma exposure was predicted to be a unique and significant contributor to the variance explained in current mental and physical health functioning, and that there would also be significant mean differences in the current level of functioning of women with histories of CSA in comparison to nontraumatised women. PTSD was also predicted to mediate the main effects of trauma exposure on subsequent outcomes. Findings pertinent to each outcome variable examined are discussed below.

### *Mental Health Outcomes*

*PTSD Symptomatology*

As predicted, trauma exposure made a unique and significant contribution to the variance explained in current levels of PTSD symptomatology, over and above that explained by relevant demographic and background factors. Although the additional variance explained by trauma exposure was small (9%), this finding corresponds with that reported by Vrana and Lauterbach (1994). However, given that the control and trauma variables collectively explained less than a quarter of the total variance in PTSD symptomatology, a number of unexamined factors may also be involved.

The second hypothesis examined was also supported. As predicted, significantly higher levels of PTSD symptomatology were detected among women with histories of CSA in comparison to women who had not been exposed to a traumatic event in their lifetime. This finding supports a number of earlier studies (e.g., Kendall-Tackett et al., 1993; Vrana & Lauterbach, 1994; Green et al., 2000). Furthermore, previous research has found higher levels of PTSD symptomatology associated with exposure to sexual assault and multiple traumatic events in comparison to other types of trauma exposure (e.g., Ullman & Brecklin, 2002; Green et al., 2000; Breslau et al., 1991;

Norris & Kaniasty, 1994; Norris, 1992; Resnick et al., 1993; Kilpatrick et al., 1989). The results of the current study also provide tentative support for this relationship given that the highest level of PTSD symptomatology was associated with experiences involving multiple types of traumatic events including CSA.

*Psychological Distress*

As predicted, trauma exposure made a unique and significant contribution to the variance explained in current levels of psychological distress. However, trauma exposure only accounted for a small percentage (2%) of the variance in psychological distress, over and above that explained by demographic and background factors. Therefore, while this finding is statistically significant, it may have less practical value. Nevertheless, significantly higher levels of psychological distress were detected in women with histories of CSA in comparison to nontraumatised women. This finding supports previous research and conclusions drawn from relevant reviews of the literature (e.g., Chandy, Blum, & Resnick, 1996; Weaver & Clum, 1995; Kendall-Tackett et al., 1993; Burnam et al., 1988; McCann et al., 1988; Fergusson, Horwood, & Lynskey, 1996; Green, 1993a; Browne & Finkelhor, 1986; Mullen et al., 1993).

Finally, the relationship between PTSD symptomatology and psychological distress was examined. Once the impact of trauma exposure, background and demographic factors had been accounted for, PTSD symptomatology explained an additional 16% of the variance in psychological distress. Although the evidence was weak, the results also indicated that PTSD symptomatology was partially mediating the impact of trauma exposure involving CSA on psychological distress. In other words, PTSD is the mechanism through which trauma exposure involving CSA has an impact on psychological distress. A similar finding was reported by Flett and colleagues (1996) among survivors who had been exposed to any type of traumatic event, and by Boudreaux and colleagues (1998) in their study of the relationship between criminal victimisation, PTSD, and other forms of psychopathology.

***Physical Health Outcomes***

*Physical Health Symptoms*

As expected, trauma exposure made a unique and significant contribution to the variance explained in current levels of physical health symptoms, over and above that explained by demographic and background factors. However, again the additional variance accounted for by trauma exposure (2%) was minimal. Nevertheless, significantly higher levels of physical health symptoms were detected among women who had experienced multiple types of trauma including CSA in comparison to nontraumatised women. Contrary to expectations however, no significant differences in current functioning were detected among women who had experienced CSA only in comparison to nontraumatised women. Although this finding is in line with that of Koss and colleagues (1990) who found poorer physical health was associated with severe and multiple victimisations.

The inclusion of PTSD symptomatology to the model after the impact of the control and trauma variables had been accounted for resulted in an additional 10% of the variance in physical health being explained. There was also weak evidence of a PTSD mediation effect between each type of trauma exposure, except experiences of CSA only, on physical health symptoms. This finding provides some evidence to support previous research which has examined the relationship between trauma, PTSD, and physical health (e.g., Wolfe et al., 1994; Friedman & Schnurr, 1995; Flett et al., 1996).

*Chronic Health Problems & Health Care Use*

Contrary to expectations, trauma exposure did not make a unique and significant contribution to the variance explained in chronic health problems or health care use, over and above that accounted for by relevant demographic and background factors. Furthermore, no significant differences in these health outcomes were detected in women with histories of CSA in comparison to nontraumatised women. As a result, the potentially mediating effects of PTSD symptomatology were not further explored. This finding is in contrast to the available evidence which suggests that trauma victims use more health care services and experience more chronic health problems in comparison to their nontraumatised counterparts (Resnick et al., 1997; Morris et al.,

1998; Koss et al., 1990; Kimerling & Calhoun, 1994; Friedman & Schnurr, 1995; Schnurr et al., 2000; Green, 1994; Resnick et al., 2000).

In summary, as expected trauma exposure made a small but unique and significant contribution to the variance explained in current levels of PTSD symptomatology, psychological distress, and physical health symptoms, over and above that explained by significant demographic and background factors. Contrary to expectations however, trauma exposure was not shown to have an impact on either chronic health problems or health care use over the previous year. Nevertheless, significantly higher levels of PTSD symptomatology and psychological distress were detected in women with histories of CSA in comparison to women who had not been exposed to a traumatic event in their lifetime. This finding therefore indicates that trauma exposure which involves CSA only, or in conjunction with other types of traumatic events can have a long-term negative impact on psychological functioning. In addition, significantly higher levels of current physical health symptoms were detected in women who reported experiencing multiple types of traumatic events including CSA in comparison to nontraumatised women. Furthermore, when trauma exposure was shown to have an impact of subsequent mental and physical health functioning, although the evidence was weak, PTSD symptomatology was consistently found to partially mediate the main effect of trauma exposure on subsequent outcomes.

Although the results of the study support a number of the hypotheses examined, several hypotheses were not upheld. There are several possible explanations for the later results. The finding that trauma exposure did not explain any variance in chronic health problems or health care use may be due to the data analysis strategy used in the current study. The impact of trauma exposure was examined after the impact of demographic and background variables had been accounted for. As a consequence, any variance shared by the control and trauma variables in the dependent variable was attributed to the control variables in the hierarchical multiple regression analysis. As Briere (1992) indicated in a review of methodological issues pertaining to the study of CSA, the results therefore most likely reflect a conservative estimate of the impact of trauma exposure. Furthermore, as pointed out by Cohen and Cohen (1983), the variance associated with any variable depends critically upon what else is in the

equation. Therefore, the findings of the current study may vary from that of other research due to the factors examined and the data analysis strategy used.

There are several possible explanations for failing to detect differences in outcomes between women with histories of CSA and nontraumatised women. Firstly, the results may have been obscured by the inclusion of women who had been exposed to a traumatic life event in the nontraumatised group. Traumatised women could have been inappropriately included in this group due to the trauma screening procedures used. The literature indicates that screening procedures, which employ multiple behaviourally specific screening items, tend to identify a greater number of respondents who have been exposed to trauma (e.g., Bolen, 2001; Bolen & Scannapieco, 2001; Ullman & Brecklin, 2002; Acierno et al., 1997; Koss, 1993). Furthermore, Briere (1992) identified a number of factors that may influence nondisclosure by a respondent, including memory for an event, an expectation of unsupportive responses, and age-specific socialisation practices. In addition, the results for women who reported histories of CSA only, may be less reliable due to the small number of women included in this group.

Despite the above findings, the results of the study have several implications. Firstly, the current research draws attention to the fact that many survivors of CSA have experienced multiple types of trauma, and that these multiple adverse experiences contribute to higher levels of current mental and physical health symptomatology. This finding suggests that further research investigating factors that contribute to revictimisation and further trauma exposure would be invaluable. Secondly, the results indicate that the assessment of CSA survivors in both research and clinical settings should include a comprehensive trauma history[1] as well as an examination of both mental and physical health domains of functioning. Without such an assessment, the full extent of the sequelae following exposure to CSA may not be recognised and inappropriate conclusions may be drawn about factors contributing to current functioning. Finally, the results also suggest that trauma and interpersonal violence in particular, are issues of concern for many New Zealand women. This finding highlights the importance of addressing such issues in clinical training programs and

[1] See Stamm (1996) and the National Center for PTSD website www.ncptsd.org for a review of available assessment measures.

also ensuring the appropriate development and adequate provision of services aimed at preventing and ameliorating the impact of such exposure.

Finally, examining the average response of women with different types of trauma histories obscures the variability in outcomes among survivors. The available evidence suggests that not all women exposed to the same stressor will respond in the same way. Therefore, factors influencing individual variability in outcomes among women exposed to sexual abuse in childhood were also examined. These findings are discussed in the following section.

# 12. CSA Characteristics & Contextual Factors

In total, 130 women in the current study reported experiencing unwanted sexual activity prior to the age of 18 years. In line with previous research (e.g., Ullman & Brecklin, 2002; Anderson et al., 1993; Fergusson, Lynskey et al., 1996; Barker-Collo, 2000; Wolfe, Gentile, & Wolfe, 1989) the majority of women surveyed were subjected to multiple abusive episodes over a period of time, by someone they knew. This finding challenges the stereotypical view that childhood sexual abuse (CSA) is perpetrated by strangers and also indicates that early intervention may prevent further abusive episodes from occurring. Furthermore, the majority of respondents reported that the abuse was unexpected, that they had no control during victimisation, and that the experience has had a detrimental effect on their life. In addition, a large number of cases did not involve physical injury, which suggests that a number of other exploitive and coercive techniques may have been employed by perpetrators. Wolfe and colleagues (1989) found that in over half of CSA cases the compliance of children was gained by exploiting the difference in status between the perpetrator and child or by offering rewards and privileges. These findings collectively suggest that prevention programs, which aim to empower children with coping skills in the event of exposure, are vital and indispensable. Finally, the finding that many women surveyed had not readily disclosed or confided all of their feelings about CSA in others, further suggests that many cases of CSA are not detected in research and society.

Based on previous child abuse and trauma research, a number of hypotheses relating to the long-term impact of CSA were examined. Characteristics and contextual factors associated with CSA were predicted to be a unique and significant contributor to the variance explained in current mental and physical health functioning, over and above that explained by significant demographic and background variables. Posttraumatic Stress Disorder (PTSD) symptomatology was also predicted to mediate the impact of CSA characteristics and contextual factors on current mental and physical health functioning. Relevant research findings associated with each outcome variable examined are discussed below.

***Mental Health Outcomes***

*PTSD Symptomatology*

As predicted, CSA characteristics and contextual features made a unique and significant contribution to the variance explained in current levels of PTSD symptomatology among women with histories of CSA, over and above that explained by relevant demographic and background factors. However, only one of the CSA trauma variables, appraisals of overall life effect, was found to have a small-moderate impact on PTSD symptomatology. That is, on average women who believe CSA has had a profound effect on their lives as a whole tend to currently experience higher levels of PTSD symptomatology. Flett and colleagues (1996) reported a similar finding among respondents following exposure to domestic violence, as well as the traumatic injury or death to a loved one. In addition, Greening and colleagues (2002) found that more pathological outcomes were associated with global attributions among earthquake survivors. As Turner and Lloyd (1995) cautioned however, the weight attached to the event may confuse stress and coping, that is, how well the event has been resolved both emotionally and practically.

Contrary to expectations, no relationship was found between the severity of the abuse and current levels of PTSD symptomatology. A number of authors (Brewin et al., 2000; Schnurr & Friedman, 1997; Kendall-Tackett et al., 1993) have noted however, that while trauma severity has consistently been associated with PTSD symptomatology, it only has a small-moderate impact. Therefore, the failure to detect this relationship may be due in part to the statistical power of the current study. Nevertheless, the bivariate relationship among the predictor variables examined as well as the findings of several other studies suggest that appraisals of overall life effect may reflect a subjective rating of the severity of the abuse (e.g., Mullen, Martin, Anderson, Romans, & Herbison, 1994; Weaver & Clum, 1995). Further research is however required to clarify this relationship.

*Psychological Distress*

Contrary to expectations, CSA characteristics and contextual factors did not make a unique and significant contribution to the variance explained in current levels of psychological distress, over and above that explained by demographic and background factors. Kilpatrick and colleagues (1985) also failed to find a relationship

between event characteristics and psychological distress among rape victims. However, the results of the meta-analysis conducted by Weaver and Clum (1995) on the relationship between interpersonal violence and psychological distress suggest that the effect size of objective and subjective characteristics of the trauma may only be small. On the other hand, PTSD symptomatology explained an additional 21% of the variance in psychological distress. However, no evidence was found to support a PTSD mediation effect.

***Physical Health Outcomes***

*Physical Health Symptoms*

Contrary to expectations, CSA characteristics and contextual factors did not make a unique and significant contribution to the variance explained in current levels of physical health symptoms, over and above that explained by relevant demographic and background variables. This finding is in contrast to that reported by Koss and colleagues (1990) in their study of the relationship between criminal victimisation and health.

The impact of PTSD symptomatology in relation to physical health symptoms was also examined. PTSD symptomatology accounted for an additional 10% of the variance in physical health symptoms, over and above that explained by the control and trauma variables. However, given that no trauma main effects were detected, a PTSD mediation effect was also not found. This finding is in contrast to previous research findings, which have linked PTSD to physical health outcomes in this manner (e.g., Friedman & Schnurr, 1995; Taft et al., 1999; Schnurr & Spiro, 1999; Schnurr et al., 2000).

*Chronic Health Problems*

As predicted, CSA characteristics and contextual factors made a small but unique and significant contribution to the variance explained in chronic health problems. However, among the CSA trauma variables, physical injury was the only factor that was shown to have an impact on chronic health problems. A post hoc examination of the health problems reported by the women who had experienced CSA involving physical injury indicated that besides cancer, women in this group reported experiencing every health problem examined more frequently than all women

surveyed, as well as women with histories of CSA who were not physically injured. Although earlier studies have reported mixed findings on the relationship between CSA and health problems, which may reflect in part differing methodological rigour (Friedman & Schnurr, 1995), the present study makes these results a little more comprehensible. That is, women with histories of CSA who were physically injured during the abuse are more likely to report higher levels of chronic health problems. However, contrary to expectations no relationship between chronic health problems and PTSD symptomatology was found. As a consequence the potentially mediating effects of PTSD was not further explored.

*Health Care Use*

As predicted, CSA characteristics and contextual factors made a small but unique and significant contribution to the variance explained in health care use measured at the aggregate level over the previous year. Among the CSA trauma variables however, appraisals of control during CSA was the only variable that had an impact on health care use. A possible explanation for this finding is that appraisals of control during CSA have contributed to a generalised belief about personal control. However, this relationship may not be specific to survivors of CSA. Perceptions of personal control has been related to health care use in a number of different populations (e.g., Taylor & Aspinwall, 1996; Sarafino, 1994). Contrary to expectations however, no relationship was found between PTSD symptomatology and health care use.

In summary, although the overall impact of CSA characteristics and contextual factors was small-moderate, they made a unique and significant contribution to the variance explained in current levels of PTSD symptomatology, chronic health problems, and health care use as expected. Furthermore, the results suggest that different factors are more salient in explaining individual variability in outcomes among CSA survivors. However contrary to expectations, CSA characteristics and contextual factors were not shown to have an impact on current levels of psychological distress or physical health symptoms. Although PTSD symptomatology accounted for additional variance in both psychological distress and physical health symptoms when it was examined, no evidence was found to support a PTSD mediation effect.

There may be a number of possible reasons for failing to detect several of the expected relationships in this section. As noted above, the analyses focusing on women with histories of CSA may have had insufficient power to detect the impact of several variables given that there were a limited number of cases available for each analysis and the associated effect sizes were probably small. However, reduced statistical power is often a problem for research in this area (Briere, 1992; Bolen, 2001). According to Friedman (1982), a sample size of 343 is required to obtain a .80 level of power when an alpha level of .05 is used and the expected effect size is small. Therefore, a study of this kind would need to survey at least 2500 respondents to obtain an adequate level of statistical power. Secondly, as noted in the previous section the findings of the current study probably reflect conservative estimates of the impact of CSA factors due to the data analysis strategy used. Finally, the trauma characteristics and contextual factors that are implicated in the long-term sequelae of CSA may differ from those related to other types of traumatic events and those associated with more proximal outcomes following trauma exposure.

Despite these findings, the results of the current study are informative in a number of ways. Firstly, the findings suggest that conceptual models developed to explain the sequelae following exposure to traumatic life events are also useful in understanding the impact of CSA. As indicated by a number of models (e.g., Green, Wilson et al., 1985; Joseph et al., 1995; Frederikson et al., 1995), the results reinforce the premise that the long-term impact of trauma exposure is multiply determined by individual, stressor, and post-stressor factors. Furthermore, objective and subjective stressor-related factors were both shown to be important contributory factors to current psychological and physical health functioning. These findings indicate that cognitive and attributional theories are also useful in understanding adaptation following CSA exposure, and that cognitive-behavioural interventions could benefit survivors in both clinical and health care settings. More specifically, the available evidence suggests that interventions which help clients to develop a sense of control may not only improve their mental and physical health functioning, but may also translate into more cost effective and efficient health care use (e.g., Taylor & Aspinwall, 1996; Sarafino, 1994).

However, these findings also highlight the toxicity of physical injury during CSA on physical health functioning. The findings suggest that women who were physically injured during CSA have a particularly high risk of developing chronic health problems. Therefore, it is indicated that the screening of trauma characteristics in health care settings would also be a worthwhile endeavour. However, no definitive causal path has been identified by which trauma translates into ill health. Although the available literature indicates that biological, psychological, and social factors are all implicated (e.g., Schnurr et al., 2000; Friedman & Schnurr, 1995; Wolfe et al., 1999; Koss et al., 1990; Cassidy, 1999; Sarafino, 1994; Lee & Turner, 1997; Resnick et al., 1997). Therefore, further research examining the role of these factors is recommended.

Given that the current study primarily focused on the main effects of CSA exposure on subsequent mental and physical health functioning, there may be a number of unexplored mediating and interaction effects among the variables examined. Further research may also benefit from examining several additional factors that may interact with CSA exposure such as premorbid functioning, attributional and coping styles, social support, and familial variables, as well as factors associated with CSA disclosure. The identification of protective factors, which buffer the impact of CSA exposure would be an especially valuable area for future investigation. The current study indicates that age and education are associated with more adaptive outcomes. Furthermore, given the diversity of outcomes associated with CSA and trauma exposure, a multidisciplinary and collaborative approach to future research between mental health and physical health professionals would probably be most productive.

*Strengths & Weaknesses*

Inherent in the design of the current study are a number of limitations. Firstly, the definitive temporal sequencing of the variables examined cannot be determined. Although it is indicated that CSA and trauma exposure have an impact on current functioning, it is possible that current functioning has influenced the recall of factors related to trauma exposure, or that poor mental and physical health functioning predated exposure. Definitive causal statements can only be made by prospective and longitudinal designs, which assess participants over time. However, given the nature of the topic under investigation as well as the associated financial costs, this type of

research is rarely undertaken. A further limitation of the current study is that there may be a number of unexamined factors that covary with the independent and dependent variables, which are responsible for the observed results. For example, given that the perpetrator, type of abuse, family dysfunction, and other forms of childhood maltreatment were not directly examined, the interrelationships between each of these factors and the variables examined cannot be determined. Another limitation is that the generalisability of the findings is limited by the characteristics of the participants included in the study. Further research is required to determine if the results are also valid for women in clinical settings as well as males exposed to CSA. However, the available evidence suggests that there are gender differences in the prevalence and nature of abuse experienced, as well as differences in vulnerability to psychological disorders and physical health problems (e.g., Brewin et al., 2000; Breslau et al., 1998; Chandy et al., 1996). Furthermore, given that Māori and rural respondents were deliberately oversampled in the current study, the results cannot be readily generalised to the general population. Finally, due to a lack of standardised measures and agreed upon methods for assessing trauma exposure and its sequelae, it is difficult to directly compare the results of many studies in this area (Brewin et al., 2000; Hamby & Finkelhor, 2000).

Despite the above limitations, the current study has a number of notable strengths. The study examined a large heterogenous group of New Zealand women, which included respondents from diverse ethnic and geographical areas within New Zealand, as well as both treatment and non-treatment seeking CSA survivors. The study provides important information about the adverse mental and physical health long-term outcomes associated with CSA. A notable finding is that CSA is rarely the only type of trauma experienced by survivors, and that experiencing additional traumatic events is associated with a higher risk of adverse outcomes. However, it was also recognised that not all women exposed to CSA respond in the same way. A number of factors that influence individual variability in response to CSA were identified. These findings have implications for clinical practice, health service provision, and social policy. Furthermore, a number of directions for future research have been suggested which could add further insight into the sequelae associated with CSA and trauma exposure. Finally, the study contributes to our understanding of the potential challenges that lay ahead of children who have been exposed to sexual abuse.

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# Appendix : Questionnaire & Show Cards

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PTSD SURVEY

Affix meshblock label

SECTION A: INTRODUCTION

INTRODUCTION 1

"Good morning/afternoon/evening, my name is Xxx from National Research Bureau, the market research company. We are conducting a survey on stress, health and well-being in the New Zealand population, on behalf of a team of researchers from the Department of Psychology at Massey University. The research is funded by the Accident Rehabilitation and Compensation Insurance Corporation, or ACC.

INTRODUCTION 2

(HAND INFORMATION SHEET TO RESPONDENT).

The study will include an investigation into the occurrence of stressful life experiences amongst New Zealanders and it will examine the effect of these experiences on individual's health and mental health.

If you agree to participate in the study you will be asked to take part in an interview which could take an hour of your time.

As a participant you have the following rights.

- You have the right to refuse to answer any question, and to withdraw from the study at any time.
- You provide information on the understanding that it is completely in confidence to the researchers, to be used only for the purposes of the research.
- You have the right to contact the researchers at any time to discuss aspects of the study.

Can you spare me the time at present?"

(IF YES PROCEED TO SECTION B, IF NO MAKE APPOINTMENT TO CALL BACK AT A TIME THAT IS CONVENIENT FOR THE RESPONDENT.)

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## SECTION B: HEALTH

"These questions are questions about your general physical health."

QB1. "Overall, would you say your health is ...?" (READ OUT LIST BEFORE CIRCLING ONE)

"Excellent" - - - 1
"Good" - - - - - - - 2
"Not so good" - - 3
"Poor" - - - - - - 4

DO NOT READ OUT:
Don't know - 5
Refused - 6

QB2. SHOW CARD B1 "Please indicate, by choosing a number along this scale, how much each of the following problems have bothered or disturbed you during the last month.
If you haven't been bothered by the problem, indicate 1. If the problem has been an extreme bother, then indicate 5, and so on.." (READ OUT LIST CIRCLING ONE NUMBER FOR EACH PROBLEM AS YOU GO)

| | Not at all | A little | Moderately | Quite a bit | Extremely | Don't know | Refused |
|---|---|---|---|---|---|---|---|
| a. "Eye problems?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. "Ear problems?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. "Nose problems?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. "Asthma or wheezing?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. "Breathing difficulties?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. "Chest pains?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g. "Racing heart?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| h. "Cold hands or feet, even in hot weather?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| i. "Leg cramps?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| j. "Insomnia or sleep problems?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| k. "Toothaches?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| l. "Stomach upset or pain?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| m. "Problems passing urine or motions?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| n. "Muscles or joint pain?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| o. "Sensitive, itching or tender skin?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| p. "Acne or pimples?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| q. "Boils?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| r. "Sweat, even in cold weather?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| s. "Headaches?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| t. "Hot flushes, face flushes?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| u. "Dizziness, feel faint?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| v. "Chills?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| w. "Numbness or tingling in any part of body?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| x. "Twitching of eyelid?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| y. "Twitching other than eyelid?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| z. "Hands tremble or shake?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| aa. "Sore throat?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| bb. "Nausea or vomiting?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

QB3. "How many days over the last three months has ill health interfered with your ability to perform normal daily activities (for example, going to work, playing sport, doing housework, and so on)?"

(RECORD) _____ days

QB4 "We would like you to think about long-term health problems you may have. Long-term health problems are more severe health problems that you have had for six months or more, or something that is likely to last for at least six months. Please answer 'yes' or 'no' to indicate if a doctor, nurse or other health care worker has told you that you have any of the following long-term health problems." (READ OUT LIST, CIRCLING ONE ANSWER FOR EACH PROBLEM AS YOU GO)

| | Yes | No | Don't know | Refused |
|---|---|---|---|---|
| a. "Cancer?" | 1 | 2 | 3 | 4 |
| b. "Diabetes?" | 1 | 2 | 3 | 4 |
| c. "Epilepsy?" | 1 | 2 | 3 | 4 |
| d. "High blood pressure or hypertension?" | 1 | 2 | 3 | 4 |
| e. "Heart trouble, for example, angina or myocardial infarction?" | 1 | 2 | 3 | 4 |
| f. "Asthma?" | 1 | 2 | 3 | 4 |
| g. "Other respiratory conditions, for example, bronchitis?" | 1 | 2 | 3 | 4 |
| h. "Stomach ulcer or duodenal ulcer?" | 1 | 2 | 3 | 4 |
| i. "Chronic liver trouble, for example, cirrhosis?" | 1 | 2 | 3 | 4 |
| j. "Bowel disorders, for example, colitis or polyps?" | 1 | 2 | 3 | 4 |
| k. "Hernia or rupture?" | 1 | 2 | 3 | 4 |
| l. "Chronic kidney or urinary tract conditions?" | 1 | 2 | 3 | 4 |
| m. "Chronic skin conditions, for example, dermatitis or psoriasis?" | 1 | 2 | 3 | 4 |
| n. "Arthritis or rheumatism?" | 1 | 2 | 3 | 4 |
| o. "Hepatitis?" | 1 | 2 | 3 | 4 |
| p. "Hearing impairment or loss?" | 1 | 2 | 3 | 4 |
| q. "Sight impairment or loss?" | 1 | 2 | 3 | 4 |

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## SECTION C: MENTAL HEALTH

INTRO:
"These next questions are about how you feel, and how things have been with you over the last month."

SHOW CARD C1
"For each question, please indicate which number along the scale on this card best describes the way you have been feeling. During the past month, how much of the time..."
(READ OUT EACH QUESTION, CIRCLING AS YOU GO)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QC1. "Have you felt lonely?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC2. "Have you felt that the future looks hopeful and promising?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC3. "Has your daily life been full of things that were interesting to you?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC4. "Did you feel relaxed and free of tension?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC5. "Have you generally enjoyed the things you do?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC6. "Have you felt loved and wanted?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC7. "Have you been a very nervous person?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC8. "Have you felt tense or "high-strung"?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC9. "Have you felt calm and peaceful?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC10. "Have you felt emotionally stable?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC11. "During the past month how much of the time have you felt down hearted and blue?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC12. "Were you able to relax without difficulty?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC13. "Did you feel that your love relationships, loving and being loved, were full and complete?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC14. "Has living been a wonderful adventure for you?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC15. "Have you thought about taking your own life?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC16. "Have you felt restless, fidgety, or impatient?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC17. "Have you been moody or brooded about things?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC18. "Have you felt cheerful, light hearted?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC19. "Were you a happy person?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC20. "Have you been in low or very low spirits?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |

SHOWCARD C2

"Again, for each question, please indicate which number along the scale on this card best describes the way you have been feeling. How often during the past month did... (READ OUT EACH QUESTION, CIRCLING AS YOU GO)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QC21. "You become nervous or jumpy when faced with excitement or unexpected situations?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC22. " You expect to have an interesting day when you get up in the morning?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC23. "Your hands shake when you tried to do something?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC24. "You feel that you had nothing to look forward to?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC25. "You feel like crying?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC26. "You feel that others would be better off if you were dead?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC27. "You feel that nothing turned out for you the way you wanted it to?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC28. "You feel so down in the dumps that nothing could cheer you up?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC29. "You get rattled, upset, or flustered?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC30. "You find yourself having difficulty trying to calm down?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC31. "You wake up feeling fresh and rested?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |

SHOWCARD C3

"Again, for each question, please indicate which number along the scale on this card best describes the way you have been feeling during the past month...". (READ OUT EACH QUESTION, CIRCLING AS YOU GO)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QC32. "Have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel or of your memory?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC33. "Did you feel depressed?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC34. "Have you been in firm control of your behaviour, thoughts emotions, feelings?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |

SHOWCARD C4

"And again with this card please indicate which number along the scale best describes the way you have been feeling. During the past month..."

(READ OUT EACH QUESTION, CIRCLING AS YOU GO)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QC35. "How much have you been bothered by nervousness, or your "nerves"?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |
| QC36. "Have you been anxious or worried?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |

SHOWCARD C5

"And on this card..."

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QC37. "How happy, satisfied, or pleased have you been with your personal life during the past month?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |

SHOWCARD C6

"And, finally, on this card...".

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QC38. "During the past month, have you been under, or felt you were under, any strain, stress or pressure?" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dk - 8 |

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## SECTION D: LIFE EVENTS

QD1. "Have you experienced any of the following events during the past 12 months?" (READ OUT LIST CIRCLING ONE NUMBER FOR EACH EVENT AS YOU GO)

| | Yes | No | Don't Know |
|---|---|---|---|
| a. "You had an operation, injury or major illness (newly diagnosed or ongoing)?" | 1 | 2 | 3 |
| b. "A close family member had an operation, injury or major illness (newly diagnosed or ongoing)." | 1 | 2 | 3 |
| c. "You married?" | 1 | 2 | 3 |
| d. "You separated or divorced?" | 1 | 2 | 3 |
| e. "You reconciled after a period of separation?" | 1 | 2 | 3 |
| f. "Your partner or spouse died?" | 1 | 2 | 3 |
| g. "A close family member, other than your partner or spouse, died?" | 1 | 2 | 3 |
| h. "You, or your partner, became pregnant?" | 1 | 2 | 3 |
| i. "You, or your partner, had a baby or adopted a child?" | 1 | 2 | 3 |
| j. "A new person, other than a new baby, came to live in your household?" | 1 | 2 | 3 |
| k. "A child or other close relative left home, (other than separation)?" | 1 | 2 | 3 |
| l. "You retired?" | 1 | 2 | 3 |
| m. "You started a new job or changed jobs?" | 1 | 2 | 3 |
| n. "You lost your job or business?" | 1 | 2 | 3 |
| o. "You were unemployed and seeking work for one month or more?" | 1 | 2 | 3 |
| p. "You moved house?" | 1 | 2 | 3 |
| q. "You had major financial difficulties?" | 1 | 2 | 3 |
| r. "Your finances improved considerably?" | 1 | 2 | 3 |
| s. "You had serious legal problems with the police or authorities?" | 1 | 2 | 3 |
| t. "A close family member had serious legal problems with the police or authorities?" | 1 | 2 | 3 |

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## SECTION E: SERVICE UTILISATION

QE1a. "Do you have a regular doctor? By that I mean do you usually see the same GP or family doctor?" (CIRCLE)

Yes - 1 → QE1b

No - 2 Don't know - 3 → GO TO QE3a

QE1b. "How long have you been seeing this doctor?" (DO NOT READ OUT. CIRCLE.)

0-3 months - - - - - 1
4-12 months - - - - 2
1-2 years - - - - - - 3
3-5 years - - - - - - 4
Over 5 years - - - - 5
Don't know - - - - - - 6

QE1c. "Is your doctor male or female?" (CIRCLE) Male - 1 Female - 2

QE2. SHOW CARD E1
"The following items are concerned with how you view the overall medical care you receive from your family doctor or general practitioner. According to this card, please tell me how much you agree or disagree with each statement." (READ OUT EACH STATEMENT AND CIRCLE ONE AS YOU GO)

| | Strongly agree | Agree | Unsure | Disagree | Strongly disagree | Don't know |
|---|---|---|---|---|---|---|
| a. "My doctor could give better care." | 1 | 2 | 3 | 4 | 5 | 6 |
| b. "My doctor is not as thorough as he or she should be." | 1 | 2 | 3 | 4 | 5 | 6 |
| c. "There are things about the medical care I receive from my doctor that could be better." | 1 | 2 | 3 | 4 | 5 | 6 |
| d. "My doctor doesn't explain ways to avoid illness or injury." | 1 | 2 | 3 | 4 | 5 | 6 |
| e. "I'm very satisfied with the medical care I receive from my doctor." | 1 | 2 | 3 | 4 | 5 | 6 |
| f. "My doctor encourages me to get a regular examination." | 1 | 2 | 3 | 4 | 5 | 6 |
| g. "The care I receive from my doctor is just about perfect." | 1 | 2 | 3 | 4 | 5 | 6 |
| h. "My doctor is very careful to check everything when examining me." | 1 | 2 | 3 | 4 | 5 | 6 |

QE3a. "In the last 12 months, have you seen a doctor, or been visited by a doctor? By doctor, I mean a GP or family doctor, but not a specialist. This may have been a doctor from a "Shortland Street" type clinic." (CIRCLE)

Yes - 1 → QE3b.

No - 2 Don't know - 3 → GO TO QE4.

QE3b. "How many times have you seen a doctor or been visited by a doctor in the last 12 months?" (CIRCLE OR RECORD)

_____ times Don't know - X

QE4. "Do you usually get an appointment to see the doctor the same day, the next day or at some other time?" (CIRCLE OR RECORD)

The same day - 1 The next day - 2 Other time (SPECIFY) _____

QE5. SHOW CARD E2
"According to this card, which statement best describes how you normally get to the doctor's office?" (CIRCLE OR RECORD)

Private vehicle - - - 0 1
Walk - - - - - - - - - - 0 2
Bus - - - - - - - - - - - 0 3
Taxi - - - - - - - - - - 0 4
Bicycle - - - - - - - - 0 5
Train - - - - - - - - - 0 6
Other (SPECIFY) _____
Don't know - - - - - - X

QE6. SHOW CARD E3
"According to this card, do you feel the doctor's fee ever stops you from going to the doctor when you think you should really see the doctor?" (CIRCLE)

Not at all - - - - - - - 1
Occasionally - - - - - 2
Some of the time - - 3
Often - - - - - - - - - - 4
Don't know - - - - - - 5

QE7 "How long do you usually have to wait in the doctor's waiting room before being seen by the doctor?" (CIRCLE OR RECORD)

_____ minutes Don't know - X

QE12. SHOW CARD E5
"According to this card, which statement best describes how much control you think you have over your future health?" (CIRCLE ONE)

A great deal of control - 1
Some control - - - - - - - 2
Very little control - - - 3
No control - - - - - - - - - 4
Don't know - - - - - - - - 5

QE13. "In the past 12 months, how many times have you personally used the casualty, that is, accident and emergency department of a public hospital?" (CIRCLE OR RECORD)

_____ times Don't know - X

QE14. "How many times in the past 12 months, have you personally used an outpatients department or a ward or a clinic where you went as an outpatient? (ie. not an emergency clinic)." (CIRCLE OR RECORD)

_____ times Don't know - X

QE15. "How many prescription items have you had for yourself from the chemist in the last 12 months?" (CIRCLE)

No prescription items - - - - - 1
1-4 items - - - - - - - - - - - - - 2
5-9 items - - - - - - - - - - - - - 3
10-14 items - - - - - - - - - - - 4
15 or more items - - - - - - - - 5
Don't know/can't remember - 6

QE16. "Have you sought advice or help in the previous 12 months from the following professional groups?" (READ OUT LIST AND CIRCLE ONE AS YOU GO)

| | Yes | No |
|---|---|---|
| a. "Medical specialist other than GP or family doctor?" | 1 | 2 |
| b. "Dentist or dental nurse?" | 1 | 2 |
| c. "Optometrist or optician?" | 1 | 2 |
| d. "Physiotherapist?" | 1 | 2 |
| e. "Chiropractor?" | 1 | 2 |
| f. "Psychologist?" | 1 | 2 |
| g. "Psychiatrist?" | 1 | 2 |
| h. "Occupational therapist?" | 1 | 2 |
| i. "Counsellor?" | 1 | 2 |
| j. "Social worker?" | 1 | 2 |
| k. "Naturopath or homeopath?" | 1 | 2 |

QE8a. "In the past 12 months, have you been admitted as an inpatient to hospital, that is, stayed as a patient overnight?" (CIRCLE)

Yes - 1 → QE8b

No - 2 Don't know - 3 → GO TO QE9a.

QE8b. "How many nights have you stayed in hospital altogether in the last 12 months?" (CIRCLE OR RECORD)

_____ nights Don't know - X

QE9a. "During the past 12 months, did you spend any days at home, in bed, due to your health?" (CIRCLE)

Yes - 1 → QE9b

No - 2 Don't know - 3 → GO TO QE10.

QE9b. "How many days did you spend at home, in bed, due to your health?" (CIRCLE OR RECORD)

_____ days Don't know - X

QE10. "Did you make use of any of the following home health services in the past 12 months?" (READ OUT LIST AND CIRCLE AS YOU GO)

| | Yes | No |
|---|---|---|
| a. "Meal delivery services?" | 1 | 2 |
| b. "Visiting nurse services?" | 1 | 2 |
| c. "Other types of home health aide?" (SPECIFY) | | |
| 1. _____ | 1 | 2 |
| 2. _____ | 1 | |

QE11. SHOW CARD E4

"Over the past 12 months, according to this card, which statement best describes the degree of worry your overall health status has caused you?" (CIRCLE ONE)

A great deal of worry - 1

Some worry - - - - - - - 2

Hardly any worry - - - 3

No worry at all - - - - - 4

Don't know - - - - - - - - 5

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## SECTION F: TRAUMATIC EXPERIENCES

"The next questions are about stressful events which may or may not have happened in your life."
READ OUT EACH QUESTION CIRCLING AS YOU GO

| | | Yes | No |
|---|---|---|---|
| QF1 | "Have you ever been engaged in military combat?" | 1 | 2 |
| QF2 | "During your childhood, did anyone ever make you have sex by using force or threatening to harm you? (This involves all unwanted sexual activity)" | 1 | 2 |
| QF3 | "Has anyone ever made you, as an adult, have sex by using force or threatening to harm you? (This involves all unwanted sexual activity, but not as a child)" | 1 | 2 |
| QF4 | "Have you ever been seriously beaten or attacked by a member of your family? (such as your spouse, partner, parent, child)" | 1 | 2 |
| QF5 | "Have you ever been seriously beaten or attacked by someone who was not a member of your family?" | 1 | 2 |
| QF6 | "Has anyone ever taken or tried to take something from you by force or threat of force, such as in a robbery, mugging, or hold-up?" | 1 | 2 |
| QF7 | "Have you ever been in a serious motor vehicle accident in which one or more people were seriously injured or killed?" | 1 | 2 |
| QF8 | "Have you ever been seriously injured in an accident other than a vehicle accident, such as at work?" | 1 | 2 |
| QF9 | "Have you ever suffered serious injury and/or property damage because of a natural or manmade disaster such as a fire, flood, or earthquake?" | 1 | 2 |
| QF10 | "Have you ever been forced to leave your home or take other precautions because of an approaching disaster such as flood, earthquake, or cyclone?" | 1 | 2 |
| QF11 | "Have you ever experienced the violent or very unexpected death of a loved one, such as through an accident, homicide, or suicide?" | 1 | 2 |
| QF12 | "Has anyone very close to you (a loved one) ever experienced violent assault, serious accident or serious injury?" | 1 | 2 |
| QF13 | "Have you ever had any other experience which you feel was shocking, terrifying or otherwise traumatic, including any event which you find too difficult to name or to talk about?" | 1 | 2 |

## SECTION G, PART 2: CHARACTERISTICS OF THE EVENTS

CHECK BACK TO QF2. IF 'YES' CONTINUE, ELSE GO TO SECTION G, PART 3.

QG1. "You said that as a child you were sexually assaulted in some way. Did this happen to you more than once?" (CIRCLE)

Yes - 1 | No - 2 Don't know - 3 → GO TO QG4b

QG2. "How many times has this happened to you?" (RECORD) _____ Don't know - X

QG3a. "When did this first happen to you?"

APPROXIMATE DATE (RECORD MONTH/YEAR) _____

OR APPROXIMATE LENGTH OF TIME SINCE EVENT (RECORD LENGTH IN WEEKS, MONTHS OR YEARS)

_____ | Don't know - X → GO TO QG4a

QG3b. "So that was about ... <INSERT DATE OR LENGTH OF TIME SINCE EVENT WHICH WAS NOT STATED BY RESPONDENT> ...?" (YOU WILL NEED TO WORK OUT THE DATE OR LENGTH OF TIME HERE, SO THAT YOU CAN CONFIRM THAT WHAT THE RESPONDENT HAS SAID IS WHEN THE EVENT HAPPENED) (RECORD IN THE REMAINING SPACE IN QG3a ABOVE).

QG4a Now I want you to think about the last time this happened to you and answer the rest of the questions in this section for that event only.

QG4b "Can you tell me, very briefly, what happened?"
(RECORD A BRIEF DESCRIPTION OF THE INCIDENT - JUST THE BARE FACTS)

_____

_____

QG5a. "When did this event happen?" (THE MOST RECENT EVENT IF MORE THAN ONE)

APPROXIMATE DATE (RECORD MONTH/YEAR) _____

OR APPROXIMATE LENGTH OF TIME SINCE EVENT (RECORD LENGTH IN WEEKS, MONTHS OR YEARS)

_____ | Don't know - X → GO TO QG6

QG5b. "So that was about ... <INSERT DATE OR LENGTH OF TIME SINCE EVENT WHICH WAS NOT STATED BY RESPONDENT> ...?" (YOU WILL NEED TO WORK OUT THE DATE OR LENGTH OF TIME HERE, SO THAT YOU CAN CONFIRM THAT WHAT THE RESPONDENT HAS SAID IS WHEN THE EVENT HAPPENED) (RECORD IN THE REMAINING SPACE IN QG5a ABOVE).

QG6. SHOW CARD G1
"According to this card which number along the scale best indicates how much you think this event has affected your life? Just read out the number." (CIRCLE)

1 2 3 4 5 Don't know - 6

QG7. SHOW CARD G2
"According to this card which number along the scale best indicates how you think this event has affected your life?" (CIRCLE)

1 2 3 4 5 No effect - 6 Don't know - 7

QG8. SHOW CARD G3
"According to this card which number along the scale best indicates how distressing this event was for you at the time that it occurred?" (CIRCLE)

1 2 3 4 5 Don't know - 6

QG9. SHOW CARD G4
"According to this card which number along the scale best indicates how you feel that you were in control of the situation, during this event?" (CIRCLE)

1 2 3 4 5 Don't know - 6

QG10. SHOW CARD G5
"According to this card which number along the scale best indicates the degree to which this experience was unexpected or expected?" (CIRCLE)

1 2 3 4 5 Don't know - 6

QG11. SHOW CARD G6
"Thinking about why this event happened, which of the groups on this card best describes the main cause or major reason why it happened?" (CIRCLE)

1 2 3 4 Don't know - 5

QG12. SHOW CARD G7
"According to this card which number along the scale best indicates how often you have talked about the event?" (CIRCLE)

1 2 3 4 5 Don't know - 6

QG13. SHOW CARD G8
"According to the scale on this card which number best indicates how much of your feelings about your experience you have confided in others?" (CIRCLE)

1 2 3 4 5 Don't know - 6

IF RESPONDENT ANSWERED '1' IN QG13 GO TO QG15, ELSE CONTINUE

QG14. "Have you confided in any of the following people?" (READ OUT LIST CIRCLING AS YOU GO)

| | | | | |
|---|---|---|---|---|
| a. | "A mental health professional?" | Yes - 1 | No - 2 | |
| b. | "A medical professional?" | Yes - 1 | No - 2 | |
| c. | "Your partner or spouse?" | Yes - 1 | No - 2 | N/A - 3 |
| d. | "Other family members?" | Yes - 1 | No - 2 | |
| e. | "Friends?" | Yes - 1 | No - 2 | |
| f. | "Any other people?" | Yes - 1 | No - 2 | |

QG15. SHOW CARD G9

"According to this card which number best indicates the degree of physical injury you suffered as a result of this experience?" (CIRCLE)

1 2 3 4 Don't know - 5

QG16. SHOW CARD G10

"According to this card which number along the scale best indicates how much you believed that your life was in danger during the event?" (CIRCLE)

1 2 3 4 5 Don't know - 6

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## SECTION H: PTSD

QH1. SHOW CARD H1
"We are interested in how you have been thinking and feeling about things over the last month or so. For each of the statements I read, please indicate which number best describes your experiences at present." (READ OUT LIST CIRCLING ONE NUMBER FOR EACH STATEMENT AS YOU GO)

| | Never | Rarely | Sometimes | Frequently | Very Frequently | Don't know | Refused |
|---|---|---|---|---|---|---|---|
| a. "Being in certain situations makes me feel as though I am back in my past." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. "I am able to get emotionally close to others." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. "Unexpected noises make me jump." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. "I am an even-tempered person." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. "I have nightmares of experiences in my past that really happened." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. "I have trouble going to sleep and staying asleep." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g. "I lose my cool and explode over minor everyday things." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| h. "I try to stay away from anything that will remind me of the things that happened in my past." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

QH2. SHOW CARD H2 "Again, for each of the statements I read, please indicate which number best describes how you feel about each statement."
(READ OUT LIST CIRCLING ONE NUMBER FOR EACH STATEMENT AS YOU GO)

| | Not at all true | Only slightly true | Somewhat true | Very true | Extremely true | Don't know | Refused |
|---|---|---|---|---|---|---|---|
| a. "In the past I had more close friends than I have now." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b "It seems that I am emotionally numb, that I have no feelings." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. "I feel guilt over things that I did in the past." | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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## SECTION J: DEMOGRAPHICS

QJ1. SEX (DO NOT ASK): Male - 1 Female - 2

QJ2. "In what year were you born?" (RECORD) 19 ____

QJ3a. "Are you currently married or living in a defacto relationship?" (CIRCLE)

Yes - 1 → GO TO QJ4 No - 2 ↓

QJ3b. SHOW CARD J1
"Which of the groups on this card best describes your marital or relationship status?" (CIRCLE ONE)

1 2 3 Don't know - 4

QJ4. SHOW CARD J2
"Which of the groups on this card best describes who you usually live with? Do not include people who are visiting or temporarily residing with you such as family or friends on holiday."
(CIRCLE OR RECORD ONE)

01 02 03 04 05 06 07

08 (SPECIFY) _____

QJ5. SHOW CARD J3
"Which of the groups on this card best describes what ethnic group you belong to?"
(CIRCLE OR RECORD ONE)

01 02 03 04 05 06 07 08

09 (SPECIFY) _____

QJ6. "Were you born in New Zealand?" (CIRCLE)

Yes - 1 → GO TO QJ9 No - 2 ↓

QJ7. "In which country were you born?" (CIRCLE OR RECORD)

Australia - 01 Tonga - 02 Samoa - 03 Cook Islands - 04 Niue - 05

Other (SPECIFY) _____

QJ8a. "In years and months, how long have you lived in New Zealand?" (RECORD)

_____ years _____ months Don't know - X

QJ8b. "In years and months, how long have you lived in the town, city or rural area in which you currently live?" (RECORD)

_____ years _____ months Don't know - X

QJ9. SHOW CARD J4
"Which of the groups on this card shows your highest educational or job qualification?" (CIRCLE OR RECORD)

01 02 03 04 05 06 07

08 (SPECIFY) _____ Refused - X

QJ10. "Are you engaged in any paid employment?" (CIRCLE)

Yes - 1 → QJ11

No - 2 → GO TO QJ13

QJ11. "How many hours do you work each week on average?" (RECORD)

_____ hours Don't know - X

QJ12. "What is your main paid job?" (PROBE AND RECORD FULLY)

_____

QJ13. SHOW CARD J5
"Which of the groups on this card is <u>most</u> appropriate for you?" (CIRCLE ONE ONLY)

01 02 03 04 05 06

07 (SPECIFY) _____

QJ14. "What is your personal yearly income before tax? Include income from all sources." (RECORD. REMEMBER, THE RESPONDENT MAY NOT KNOW HIS OR HER ANNUAL INCOME SO YOU CAN RECORD THE WEEKLY, FORTNIGHTLY OR MONTHLY AMOUNT IF THEY KNOW THAT INSTEAD. ALSO, WE DON'T NEED TO KNOW THE EXACT FIGURE - YOU CAN ROUND TO THE NEAREST $1,000 OR NEAREST $5,000 IF YOU LIKE)

$____,000 YEARLY or $_____ WEEKLY / FORTNIGHTLY / MONTHLY (CIRCLE ONE)

Refused - X

QJ15. SHOW CARD J6
"Which of the groups on this card best describes your current living arrangements?" (CIRCLE ONE)

01 02 03 04 (SPECIFY) _____

QJ16. "Do you have a working telephone in your home?" (CIRCLE)

Yes - 1 No - 2

QJ26. "Have you attended church in the past two weeks?" (CIRCLE)

Yes - 1 No - 2 Don't know/can't remember - 3

QJ27. RECORD NUMBER OF PEOPLE IN HOUSEHOLD AGED 18 YEARS OR OVER FROM SELECTION GRID: _____

CLOSE:
"Well that brings us to the end of our questionnaire. May I just have your first name and phone number in case my Supervisor wishes to check my work?"

NAME: _____ PHONE: _____

AREA OF INTERVIEW: _____

"Thank you for your time, it is much appreciated. As I said my name is Xxx and I'm from National Research Bureau."

(HAND FOLLOW UP SHEET AND ENVELOPE TO RESPONDENT)

---

CERTIFICATION: I hereby certify that this is a true and accurate record of an interview conducted by me at the time and place specified. TICK WHEN CHECKED: ☐

Interviewer Sign: _____ Date: _____

Area: _____

Supervisor Sign: _____ Field Check: _____

QJ17. "Do you have access to a motor vehicle for your regular private use?" (CIRCLE)

Yes - 1 No - 2

QJ18. "Do you belong to any health insurance scheme which refunds any of your money when you pay fees or charges for health care?" (CIRCLE)

Yes - 1 No - 2 Don't know - 3

QJ19. "Do you have a high use health card or a 'chronically ill' certificate?" (CIRCLE)

Yes - 1 Have applied for one - 2 No - 3 Don't know - 4 Can't remember - 5

QJ20. "Do you have a community services card?" (CIRCLE)

Yes - 1 Have applied for one - 2 No - 3 Don't know - 4 Can't remember - 5

QJ21. SHOW CARD J7
"According to this card, which statement best describes how satisfied you are with your overall standard of living?" (CIRCLE)

Very dissatisfied - - 1
Dissatisfied - - - - - 2
Satisfied - - - - - - - 3
Very satisfied - - - - 4
Don't know - - - - - - 5

QJ22. SHOW CARD J8
"According to this card, which statement best describes how you feel about your ability to get along on your income?" (CIRCLE)

Can't make ends meet - - - - - - - - - - 1
Have just enough money - - - - - - - - 2
Have enough with a little left over - 3
Always have money left over - - - - - 4

QJ23. "Do you have any living brothers/sisters or children?" (CIRCLE)

Yes - 1 No - 2

QJ24 "Have you spoken on the phone with relatives and friends over the past two weeks?" (CIRCLE)

Yes - 1 No - 2 Don't know/can't remember - 3

QJ25. "Have you got together with relatives and friends over the past two weeks?" (CIRCLE)

Yes - 1 No - 2 Don't know/can't remember - 3

# SHOW CARDS

NRB
National Research Bureau

# CARD B1

| Not at all | A little | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD C1

| All of the time | | | | | | None of the time |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# CARD C2

| Always | | | | | | Never |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# CARD C3

| Very Much | | | | | | Not at all |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# CARD C4

| Extremely | | | | | | Not at all |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# CARD C5

| Extremely Happy | | | | | | Extremely Unhappy |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# CARD C6

| Yes, more than I could bear | | | | | | No, not at all |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# CARD G1

| No effect | Slight effect | Moderate effect | Strong effect | Extreme effect |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G2

| Only negative effects | Mostly negative effects | Both positive & negative effects | Mostly positive effects | Only positive effects |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G3

| Not at all distressing | Slightly distressing | Moderately distressing | Very distressing | Extremely distressing |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G4

| I had complete control | I had a lot of control | I had some control | I had very little control | I had no control |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G5

| Completely expected | | | | Completely unexpected |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G6

# PRIMARY CAUSE

My own actions ..... 1

The actions of others ..... 2

A mechanical, technical, or
industrial problem ..... 3

Natural forces
(including "acts of God", the weather
or just "bad luck") ..... 4

# CARD G7

| Never | Rarely | Sometimes | Often | Very often |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G8

| None of my feelings | Very few of my feelings | Some of my feelings | Most of my feelings | All of my feelings |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD G9

## DEGREE OF PHYSICAL INJURY

Severe injury (hospitalised for one week or more, and/or some loss of body function - perhaps permanent) ..... 1

Moderate injury (hospitalised for less than a week, and/or some loss of body function - not permanent) ..... 2

Mild injury (Emergency or A & E treatment not requiring overnight hospital treatment, no loss of function) ..... 3

No injury ..... 4

# CARD G10

| I did not think that I would die | | | | I really believed that I would die |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD H1

| Never | Rarely | Sometimes | Frequently | Very frequently |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD H2

| Not at all true | Only slightly true | Somewhat true | Very true | Extremely true |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# CARD J1

# MARITAL / RELATIONSHIP STATUS

Never married ..... 1

Separated / divorced ..... 2

Widowed ..... 3

# CARD J3

# ETHNIC GROUP

New Zealand European ..... 01

New Zealand Maori ..... 02

Samoan ..... 03

Cook Island Maori ..... 04

Tongan ..... 05

Niuean ..... 06

Chinese ..... 07

Indian ..... 08

Other (please specify) ..... 09

# CARD J4

## HIGHEST EDUCATIONAL/JOB QUALIFICATION

No school qualification ..... 01

School Certificate passes in one or more subjects ..... 02

Sixth Form Certificate or University Entrance passes in one or more subjects ..... 03

University Bursary or Scholarship ..... 04

Trade or Professional Certificate or Diploma ..... 05

University Undergraduate Degree or Diploma ..... 06

University Postgraduate qualification ..... 07

Other (eg, overseas) (please specify) ..... 08

# CARD J5

Employed in full-time paid employment ..... 01

Employed in part-time paid employment ..... 02

Unemployed ..... 03

Retired ..... 04

Student ..... 05

Beneficiary (ACC/Sickness Benefit, etc) ..... 06

Other (please specify) ..... 07