Impact of sexual assault characteristics and childhood maltreatment on adult psychopathology

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Statement of Originality

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, expect where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the university library, being made available for loan and photocopying subject to the provisions of the Copyright Act 1968.

Signed……..……
Tamar Macks

Declarations

I hereby certify that the work embodied in this thesis has been carried out whilst I have been employed at the Newcastle Sexual Assault Service, Hunter New England Health Service. Clients of this service participated in my thesis research.

I hereby certify that the work embodied in this thesis contains an unpublished paper of which I am a joint author. I have included as part of the paper, a written statement, endorsed by my supervisor, attesting to my contribution to the joint publication/scholarly work. As the student, I took the lead research role and collaborated closely with my principal supervisor, Ms Kylie Bailey. Research advice was sought from Reverend Dr Martin Johnson, Dr Pete Kelly and Professor Mike Startup, who consecutively acted as my secondary supervisors.

Signed……..……
Tamar Macks

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Table of Contents

List of Tables

Thesis Abstract

This study used a retrospective design to investigate the impact of sexual assault (SA) severity characteristics as well as different types of childhood maltreatment experiences on current adult psychopathology. Participants (N = 24) were recruited from a Sexual Assault Service with 20 reporting exposure to childhood sexual assault (CSA). Childhood maltreatment and sexual assault characteristics were measured using the Traumatic Event Checklist. Current adult psychopathology (PTSS, dissociation, depression and Alcohol misuse) were measured using the Posttraumatic Diagnostic Scale, the Dissociative Events Scale, the Beck Depression Inventory-II, and the Alcohol Use Disorders Identification Test.

The mean scores for the sample indicated that PTSS was in the *moderate to severe* range; dissociative symptoms were below clinical levels; depressive symptoms were in the *severe* range and alcohol misuse was in the *low-risk* range. This study found that: SA with force-related strategies had higher levels of adult dissociation; SA by more than one perpetrator had more severe adult depression; and older age of SA onset was associated with higher levels of alcohol misuse. There were no differences in adult PTSS, dissociation, depression and alcohol misuse for the perpetrator being a close family member, longer duration and higher number of SA occasions. CSA and childhood emotional abuse developmental scores were associated with dissociation. CSA scores were also associated with lower levels of alcohol misuse. Childhood physical abuse and childhood neglect did not associate with any of the adult psychopathologies. The pattern of associations between SA characteristics was

investigated. Consistent with previous research, childhood maltreatment types were all associated with each other.

The findings support previous studies that have found SA perpetrated with force or threat of force increased the range of psychopathology of the trauma response. The development of negative self-schema may mediate the association between more than one perpetrator of SA and adult depression. An older onset age of SA may influence the higher use of alcohol as an adult by being more available as a coping strategy at the time of the SA. The different types of childhood maltreatment contributed differently to PTSS, dissociation, depression and alcohol misuse. Further investigation into trauma-related predictors of adult psychopathology as well as the development of a standardised (retrospective) childhood maltreatment questionnaire is recommended.

Extended Critical Literature Review

Impact of sexual assault characteristics and childhood maltreatment on adult psychopathology

Traumatic Events

When adverse life events are outside of normal experience and produce a strong emotional reaction (such as fear) they are considered to be traumatic (Shalev, 1996). Traumatic events include natural disasters, combat, life-threatening accidents, serious injury, physical assault, sexual assault (SA) and torture (American Psychiatric Association [APA], 2013). The most common response following exposure to a traumatic event is a return to normal functioning over a period of time, ranging from several days to several weeks (Bonanno and Mancini, 2012). However, some people fail to recover as a normal process, and develop ongoing trauma symptoms (Shalev, 1996).

Traumatic Events and Symptom Responses

Long term traumatic reactions and memories are formed when trauma-related responses are not integrated into a coherent memory structure. This was introduced as a scientific concept by Peirre Janet in 1899 (van der Kolk, Roth, Pelcovitz, Sunday & Spinazzola, 2005). Research has shown that trauma-related symptoms include: posttraumatic stress disorder (PTSD); dissociation (Briere, 2006); depression (Heim, Shugart, Craighead & Nemeroff, 2010); alcohol and other substance use problems (Miller & Resick, 2007) and chronic medical conditions, such as cardiovascular, metabolic, immunological diseases and sexual dysfunction (De Clercq &De Fruyt, 2007). The range of symptom responses indicates that traumatic stress can lead to complex symptom responses (Ford & Courtois, 2009a).

It has been a robust finding in the course of trauma research that the immediate response to a traumatic event is the arousal of the sympathetic nervous system (*hyperarousal*) (Cannon, 1932; van der Kolk, et al., 2005). Since then, literature has recognised the behavioural responses of hyperarousal as the *fight, flight* (Selye, 1973) and the *freeze* response of immobility (Nijenhuis, Spinhoven, Vanderlinden, van Dyke & van der Hart, 1998). PTSD recognises hyperarousal as a symptom, as well as symptoms of *intrusions* (unwanted thoughts/images about the event), *avoidance* (of cues and triggers), and negative cognitions and mood related to the traumatic event (APA, 2013). Trauma symptoms are considered to be a failure to recover from initial survival responses (Shalev, 1996).

Traumatic Events Prevalence Rates

The general lifetime exposure rate to traumatic events has been estimated at between 69% and 75% (Lilly and Valdez, 2012; Mills, Teesson, Ross & Peters, 2006). Estimates of lifetime prevalence of PTSD are between 6.5% and 15% for the general population (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995) and up to 28% for populations that are exposed to traumatic events, such as combat and natural disasters (McFarlane & Girolamo, 1996). The difference between rates of traumatic exposure and PTSD prevalence highlights how some people fail to process traumatic experiences as a normal recovery process (Ozer & Weiss, 2004; Weiss, 2012).

Prevalence studies have found that females are more likely to experience sexual and physical assault by known perpetrators and men are more to be likely to be exposed to natural disasters, combat, accidents and assault by strangers (Breslau, 2001; Kessler et al., 1995). Females also have a higher prevalence of PTSD compared to males which

may be due to their higher exposure to interpersonal violence (Gavranidou & Rosner, 2003). However, recent studies have suggested that there are gender differences in physiological responses to traumatic events (Olff, Langeland, Draijer & Gersons, 2007, Tolin & Foa, 2008), which may also account for some of the differences in PTSD prevalence in males and females.

Sexual Assault Events

Adult sexual assault experiences. Adult SA experiences can range from non-physical contact of a sexual nature, such as exposure, through to extreme experiences of SA, such as sexual torture (Herman, 1998). As such, differences in prevalence rates may be a function of varying SA definitions. Adult SA is reported to occur to between 10% and 35% of women in the general population (Australian Bureau of Statistics, 2006; Breslau, Davis, Andreski, Peterson & Schultz, 1997; Elliot, Mok & Briere, 2004; Finkelhor 1994; Kessler et al., 1995; Ullman & Breklin, 2002) compared to about 13% of men (Masho & Anderson, 2009). Females are more likely to sexually assaulted by someone they know (62% of reported SA by women) while males are more likely to be sexually assaulted by strangers (63% of reported SA by men) (Acierno, Resnick, Kilpatrick, Saunders & Best, 1999).

Child sexual assault experiences. A commonly agreed definition of a child in Australia is a person under the age of 18 years (United Nations General Assembly, 1989). The consistent definition of CSA is sexual activity with a child perpetrated by an older person (Trickett, Noll, Reiffman & Putnam, 2001). However there remains room for interpretation with this definition of CSA (Schwartz, 2000). For example, sexual contact versus sexual non-contact, such as exposing a child to pornography (Irish,

Kobayashi & Delahanty, 2010). Other definitions include a specified age difference between a child and the perpetrator, typically of five years (Wyatt & Peters, 1986).

Data on Australian prevalence rates of CSA vary between 4-12% for penetrative assault, and 12- 36% for non-penetrative assault (Coates, 2009; Price-Robertson, Bromfield & Vassallo, 2010). Andrews, Gould & Corry (2002) reported that the average age of onset of CSA in Australia was 10 years old, with 75% reporting that the perpetrator was a person known to them (half of which were reported to be family members). As with adults, female children are more likely to experience SA by someone they know compared to their male counterparts (Breslau, 2001; Kessler et al., 1995).

Sexual Assault Characteristics

Experiences of SA are unique, with many differing characteristics. It may be that one aspect of a SA experience can indicate its severity (i.e. a violent SA) or that several characteristics can cumulate to increase the severity of the SA (Courtois, 2008). Researchers have investigated characteristics of SA experiences which may contribute to sexual assault severity. These include: age of SA onset; level of physical intrusiveness, use of force-related strategies; relationship between victim and perpetrator; duration of SA and number of perpetrators of SA. It is generally recognised that more severe experiences of assault are associated with more severe traumatic symptoms (Hedtke et al., 2008). It can be difficult to compare the study results for SA characteristics, as standardised measurement instruments are still in development and different instruments measure different aspects of each SA characteristic. However,

several studies have shown that some of these characteristics have more robust associations with trauma symptoms, compared to other SA characteristics. For example, the association between trauma symptoms and the level of physical intrusiveness of the SA or the use of violence is well supported (Casey & Nurius, 2005). However, research has mixed findings with associations between psychopathology and other SA characteristics, such as relationship to the perpetrator, age of SA onset and duration of SA. Also, there are fewer studies investigating the effects of the number of perpetrators, which have consistently found an association with adult psychopathology (Liu, Jager-Hyman, Wagner, Alloy & Gibb, 2012).

Physical Intrusiveness of Sexual Assaults

Many studies which measure the severity of the SA have used the level of physical intrusiveness of the acts (such as oral and genital penetration) as the main indicator of severity (e.g.Abbey, BeShears, Clinton-Sherrod & McAuslan, 2004). Physical intrusiveness has consistently demonstrated to be predictive of more severe trauma symptoms (Briggs & Joyce, 1997; Katerndahl, Burge & Kellogg; 2005). In fact, Epstein Saunders and Kilpatrick (1997) found that the level of physical intrusiveness of the SA was a better predictor of PTSD than physical force and the number of SA experiences. An extensive literature search at the time of writing did not reveal any study that did not find penetrative SA to be a main predictor of adult psychopathology.

Force-Related Strategies

Threat to life and fear of harm is recognised as a main contributor to the development of posttraumatic stress symptoms (PTSS) (Yehuda, McFarlane & Shalev, 1998). In the context of SA, force-related strategies (use or threat) cause a victim to feel

fear (Abbey et al., 2004). For example, SA victims have been found to view their own SA as more severe if it was perpetrated with physical force (Abbey et al., 2004). A consistent finding in the research on use of force during SA is that it is highly associated with psychopathology, such as PTSD (Epstein, et al., 1997) dissociation (Trickett, et al, 2001) depression and increased alcohol use (Casey & Nurius, 2005). Studies on threat of force typically group *threat of forc*e with *use of force* to analyse one force-related strategy, making the differential contributions of use and threat of force unclear. An example is a study by Trickett et al. (2001) who found an association between the combined force-related strategies and PTSD and dissociation.

Relationship to the Perpetrator

Research has found that traumatic events that are intentionally perpetrated by another person (such as SA) result in more severe traumatic symptoms compared to non-intentional traumatic events (such as accidents and natural disasters) (Breslau, 2001; Green et al., 2000; Resnick et al., 1993). In regards to SA, studies have also found that SA perpetrated by family members (intra-familial) can result in more severe trauma symptoms than perpetrators who are not family members (extra-familial) (Epstein et al.1997; Katerndahl et al., 2005; Martin, Cromer, DePrince & Freyd, 2013). Furthermore, when intra-familial SA occurs in childhood, it is referred to as *betrayal abuse* (Schultz, Passmore & Yoder, 2003) which reflects the dependent relationship that these children have with their perpetrator (Martin, et al., 2013). Recent research on betrayal abuse has found that it is predictive of the PTSS of emotional numbing and avoidance (Kelley, Weathers, Mason & Pruneau, 2012). There is also emerging evidence that sibling SA has similar trauma symptoms to abuse by caregivers (Caffaro, 2011).

Whilst some studies describe the effects of being closely related to the perpetrator as having major negative effects on psychopathology, other studies have not supported this association (Schultz et al., 2003). For example, a major US National co-morbidity study found that the perpetrator being a close family member did not predict more severe PTSD (Ullman & Breklin, 2002). To add to the inconsistent findings, Mennen and Meadow (1995) found an interaction effect between the use of physical force and familial relationship of perpetrator. They found that the use of physical force contributed to depression and lowered feelings of self-worth only when the perpetrator was outside of the immediate family.

Age of Onset

It is recognised that early onset of SA experiences can result in greater psychopathology due to developmental disruption (van der Kolk et al., 2005). Early age of onset of SA has been found to be associated with PTSD (Herman, 1998) and enduring depression and anxiety (Hedtke et al, 2008; Kaplow & Widom, 2007). However, Casey and Nurius (2005), and Paolucci, et al. (2001) did not find age of onset to be related to PTSD or depression. Furthermore, Kaukinen and DeMaris (2005) did not find any relationship between age of SA onset and alcohol misuse.

Duration of Sexual Assault

The research on SA duration is also mixed. Research by Casey & Nurius (2005) found that SA duration was associated with both PTSD and depression. However, other studies have not supported an association between the duration of the SA and adult psychopathology (e.g. Lucenko et al., 2000; Mennen & Meadow, 1995; Ullman and Breklin, 2002).

Number of Perpetrators

Despite the number of perpetrators being one of the least studied SA characteristics, the research findings are consistent. Multiple perpetrators are associated with greater complexity of psychopathology. The range of symptoms associated with the number of perpetrators include more severe PTSS (Casey & Nurius, 2005), dissociation (Schultz, et al., 2003; Trickett, et al., 2001), depression (Liu, et al., 2012) and substance use (Casey & Nurius, 2005; Katerndahl, et al., 2005). However, studies have defined the number of perpetrators differently. For example, some researchers assessed multiple incidents only (Katerndahl, et al., 2005; Shultz et al., 2003) while others assessed the total number of perpetrators (Liu, et al., 2012). Sometimes, multiple perpetrators of a single SA incident have been grouped together with other single incidents of SA (Casey & Nurius, 2005).

Relationship between Sexual Assault Characteristics

There is a tendency for SA characteristics to be associated with each other (Trickett et al., 2001) which has not been fully acknowledged by all research in this area. For example, some studies have not reflected on the possible impact of this shared variability on psychopathology as they investigated only one SA characteristic, such as the use of violence during SA (Ullman Townsend, Filipas & Starzynski, 2007) or the relationship of the victim to the perpetrator (Martin et al., 2013). Measuring only one SA characteristic is problematic in that it may inflate its unique influence on psychopathology by not taking into account the influence of other SA characteristics. Other studies that measure several SA characteristics have not reported statistical analyses of the relationships between SA characteristics (e.g. Briggs & Joyce, 1997; Katerndahl et al., 2005).

Multiple regressions on SA characteristics suggest a shared variability in predicting adult psychopathology (e.g. Casey & Nurius, 2005; Epstein, et al., 1997). For example, Ruggiero, McLeer and Dixon (2000) found that trauma symptomatology which is associated with the perpetrator being closely related may be accounted for by other SA characteristics likely to occur in that abuse situation (i.e. younger age of SA onset, longer duration and higher frequency of abuse). Furthermore, Paolucci et al., (2001) found no association with psychopathology for the SA characteristics of relationship, age and number of abuse incidents in their meta-analysis of CSA studies.

Trickett et al. (2001) assessed for associations between SA characteristics in females who reported intra-familial CSA in order to form CSA profiles. One profile groups the CSA characteristics of multiple male intra-familial perpetrators (who were not biological fathers) CSA occurring over short periods of time, with force-related strategies of physical violence and penetrative sex acts. Another CSA profile includes a single intra-familial perpetrator (who was not a biological father) with low levels of violence. The third CSA profile described SA by biological fathers over a longer period of time. This suggests that SA characteristics may present together in particular patterns. Unfortunately there has not been any further published paper on CSA profiles.

Childhood Maltreatment (Abuse and Neglect)

Child maltreatment has been defined as any behaviour towards a child that causes emotional, physical or developmental harm (Australian Institute of Health and Welfare, 2012; Holzer & Bromfield, 2010). Childhood maltreatment is considered to have enduring effects on psychopathology due to the dependent status of children

(Finkelhor & Dziuba-Leatherman, 1994). For example, the Adverse Childhood Experiences (ACE) study found a direct relationship between child maltreatment and multiple adult psychological, social, behavioural, neurobiological, and physical health problems (Felitti, et al., 1998; Kezelman & Stravropoulos, 2012). The ACE study further found that most maltreated children are unfortunate enough to experience more than one form of abuse (Dong, Ander, Felitti et al, 2004). This pattern of being exposed to multiple forms of child maltreatment has been found in other studies on child maltreatment (Briere, Kaltman & Green, 2008; Cloitre et al., 2009; Finkelhor, Ormrod & Turner, 2007; Higgins, 2004; Paz, Jones & Byrne, 2005).

The current conceptualisation of child maltreatment uses five broad categories: physical abuse (causing physical harm); emotional/psychological abuse (sustained pattern of verbal abuse, harassment and rejection); neglect (consistent pattern of failure to provide basic emotional and physical needs); witnessing family violence (also considered a form of emotional abuse); and sexual assault (Coates, 2009). The Australian child protection services reported that for the years 2009-2010, the most common type of substantiated maltreatment was: emotional abuse (37%); followed by neglect (28.7%); then physical abuse (22%); and lastly, sexual assault (12.7%) (Lamont, 2011).

CSA has also been the most extensively studied form of childhood maltreatment both in isolation, and with other maltreatment variables (Kessler, et al., 2010). Studies that have investigated only one maltreatment type, or have compared (rather than added) other maltreatment types, have generally found that CSA was the most consistently predictive type of maltreatment of adult psychopathology (Paolucci et al.,

2001; Banyard, Williams & Seigel, 2001). However, the unique contribution of CSA to adult psychopathology reduces when other maltreatment variables are considered (Finkelhor, et al., 2007; Teicher, Samson, Polcari & McGreenery, 2006).

In childhood maltreatment research, childhood physical assault (CPA) appears to be the second-most contributor to adult psychopathology after CSA (Briggs-Gowan, et al., 2010; Springer, Sheridan, Kuo & Carnes, 2007; Sugaya, et al., 2012). As with CSA, the unique contribution of CPA is reduced when other maltreatment variables are considered (Teicher et al., 2006) with the exception of the role of CPA in predicting the development of adult aggressive behavioural problems (Greif-Green, et al., 2010; Keyes, et al., 2012).

Emotional abuse and neglect has been less studied than CSA and CPA, but is gaining research interest (Keyes, et al., 2012). So far the research on emotional maltreatment is mixed. For example, a review on three large-scale Australian studies found emotional maltreatment prevalence rates (i.e. emotional abuse and neglect) to be between 6% and 17% (Price-Robertson, et al., 2010). Similar rates of 3-9% for emotional maltreatment were found in a large-scale international study (Keyes et al., 2012).

Research into the role of emotional abuse and neglect in predicting future psychopathology has mixed findings (Banyard, et al., 2001; Cloitre, et al., 2009; Manly, Kim, Rogosch & Cicchetti, 2001; Sugaya et al., 2012). Some studies have not found any associations between childhood emotional abuse and adult psychopathology

(Herrenkohl, Klika, Herrenkohl, Russo & Dee, 2012), whereas other studies have found strong associations (Spertus, Yehuda, Wong, Halligan & Seremetis, 2003; Teicher, et al., 2006) particularly with adult substance use (Keyes et al., 2012) and depression (Gibb, Chelminski & Zimmerman, 2007. Like childhood emotional abuse, research into childhood neglect has mixed findings. For example, Bailey, Webster, Baker and Kavanagh (2012) found an association between childhood neglect and adult psychopathology, however Keyes et al. (2012) failed to do so.

Overwhelmingly, studies exploring the impact of maltreatment type on adult psychopathology have consistently found that the number of adverse childhood events cumulatively contribute to severity of adult symptoms (Edwards, Holden, Anda & Felitti, 2003). Furthermore, some studies support a model of a single unifying concept of *child maltreatment* (e.g. Higgins, 2004) whilst other studies have suggested that the higher the number of varied traumatic experiences over childhood, the more complex the adult psychopathology in adulthood (Briere, et al., 2008; Cloitre et al., 2009; Finkelhor et al., 2007; Jonkman, Verlinden, Bolle, Boer & Lindauer, 2013).

Mental Health Disorders Associated with Sexual Assault

Posttraumatic Stress Disorder

PTSD was introduced into the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 1980), and the fourth edition of the *DSM* (APA, 1994) has provided diagnostic criterion which has been in use for 18 years. In the *DSM-IV*, three main clusters of symptoms assessed PTSD diagnosis; intrusions (unwanted thoughts/images about the event), avoidance (of cues and triggers, emotional numbing,

and/or amnesia) and hyperarousal (anxiety symptoms) (APA, 1994). Whilst the *DSM-5* has retained the current single diagnosis of PTSD, the symptomology of this disorder now includes dissociative symptoms (of depersonalisation and derealisation) as well as a new criterion of negative cognitions and mood (APA, 2013). The majority of SA studies in this review have included PTSS as an outcome variable.

Adult traumatic experiences and PTSD. PTSD is the most common diagnosis following adult traumatic experiences (Bonanno & Mancini, 2012). One meta-analytic study found that trauma severity, and lack of social support and additional life stress were more predictive of PTSD than pre-trauma vulnerabilities (Brewin, Andrews & Valentine, 2000). Ozer, Best, Lipsey and Weiss (2003) in their larger meta-analytic study, found that reactions during the traumatic event, especially dissociative reactions (*peri-traumatic dissociation*) best predicted PTSD. Both studies found that prior life trauma and adversity had weaker effects on PTSS. Both studies also found that the influence of influence of demographic variables were not significant when other traumatic event characteristics were considered in the analysis (Brewin, et al., 2000; Ozer, et al., 2003). This suggests that the severity characteristics of a traumatic event, and the reaction to it, seem to be predictive of PTSD in adults.

Childhood maltreatment and PTSD. Critics of the *DSM-IV* conceptualisation of PTSD argue that this disorder is based on a single traumatic event which fails to capture the range of trauma responses associated with childhood maltreatment (Briere & Spinazzola, 2009; Bryant, 2010, 2012; van der Kolk, et al., 2005). The psychopathology that can result from childhood maltreatment experiences is referred to as *Complex PTSD* (CPTSD) (Cloitre et al., 2009). CPTSD was coined by Herman

(1992) to account for the range of psychopathology that is not captured by *simple* PTSD criteria. CPTSD is considered to arise from childhood trauma that involves repeated violence, starting early in life and in a relationship of dependence (Herman, 2009; Lindauer, 2012). Van der Kolk, et al., (2009) specifies that children who are under ten years of age at abuse and neglect onset are most likely to experience CPTSD.

CPTSD is argued to be on a PTSS continuum of trauma maladaptation (Goodman, 2012) with emotion dysregulation as the core feature (Bryant, 2012). Lanius et al. (2010) describe emotion dysregulation as a form of hyperarousal reactivity. This is consistent with Perry's (2009) sequential model of neurodevelopment, which places hyperarousal as a primary disruption in response to childhood trauma and maltreatment. However, some researchers argue that further research is required to establish CPTSD in a continuum model of posttraumatic stress (Resick, et al., 2012).

Dissociative Disorders

Dissociation is a term which covers many experiences of disconnection in psychological, perceptual and somatic experiences (Dalenberg et al., 2012). Some of these experiences are considered normal, such as being so absorbed in an activity or an imaginative experience (i.e. reading a story) that there is a feeling of disconnection from one's surroundings (Waller, Putnam & Carlson, 1996). Other dissociative experiences can interfere with daily functioning and are considered more clinical and atypical (Dalenburg et al., 2012). Examples of clinical dissociation include dissociative amnesia, dissociative fugue states and compartmentalised identity states (Gleaves & Williams, 2005; van der Hart, Nijenhuis, Steele & Brown, 2004). Also, normal dissociative

experiences can indicate pathology if over-used as an avoidance strategy (Dalenburg et al., 2012).

Adult traumatic experiences and dissociation. During a traumatic event, a dissociative response (*peri-traumatic dissociation)* is the removal of consciousness from the traumatic experiences (Putnam, et al., 1996) which can also lead to complete or partial amnesia of the event (Herman, 2007). An example of this is when the victim describes watching themselves from elsewhere in the room, or going somewhere else in their mind (Herman, 1992). Experiencing peri-traumatic dissociation has been found to be highly predictive of PTSD (Ozer et al., 2003) and of more severe and complex posttraumatic responses (Briere, Scott & Weathers, 2005; Olff, et. al., 2007). Victims who remain present and conscious throughout the traumatic event tend to cope better afterwards as they may be better able to integrate traumatic thoughts, feelings and bodily sensations into autobiographic memory (Schauer & Elbert, 2010). It is thought that dissociation initially acts as a protective factor during a traumatic event, but becomes maladaptive when continually relied upon as a form of avoidance to manage distress (Lanius, et al., 2010; Van der Hart, Nijenhuis & Steele, 2005).

Childhood maltreatment and dissociation. The nature and degree of childhood maltreatment required to promote the development of dissociation has been the subject of a recent and growing body of research (Aydin, Altindag, & Ozkan, 2009; Briere & Rickards, 2007; Cloitre, et al., 2010; Dutra et al., 2009; Zinc, Klesges, Stevens & Decker, 2009).The *freeze* trauma response has been found to be predictive of a dissociative coping style (Schauer & Elbert, 2010) and is more likely to be adopted by children who are less able to fight or flee, and rely on their caregivers for protection

(Perry & Pollard, 1998). There is evidence that CSA and CPA is facilitative of dissociative processes as a coping strategy (Cloitre et al., 2010) and some indication that childhood emotional abuse and neglect may also be implicated in this process (Maaranen, et al., 2004; Narang & Contreas, 2005; Simeon, Guralnik, Schmeidler, Sirof & Knutelska, 2001; Twaite & Rodriguez-Srednicki, 2004).

Dissociation and posttraumatic stress disorder. The *DSM-5* PTSD diagnostic symptoms which may be indicative of dissociative processes are *dissociative reactions (flashbacks), dissociative amnesia* and *detachment* (APA, 2013). There is high comorbidity between PTSD and dissociation (Schauer & Elbert, 2010). For example, Lanius et al. (2010) found that 30% of her participants with PTSD also used dissociative coping strategies. These participants were also more likely to have experienced prolonged childhood maltreatment such as CSA. Given the well-established link between childhood maltreatment and ongoing dissociative symptoms, the presence of dissociation is considered to be an indicator of CPTSD (Briere & Spinazzola, 2009).

Neurological studies are providing initial evidence that people utilise dissociative reactions to avoid the distress of hyperarousal symptoms. Felmingham et al. (2008) found that dissociation only occurred after conscious processing of threat and the experience of extreme arousal. Furthermore, dissociation and hyperarousal have been found to utilise opposite neurochemical processes. Dissociation is the activation of the parasympathetic nervous system, which calms the arousal response of the sympathetic nervous system (Lanius, et al., 2010). This duality of responses has also been observed in children. For example, Perry and Pollard (1998) found that children either become hyperaroused, or learn to dissociate in response to ongoing traumatic stressors. Overall,

this may suggest that children and adults who dissociate are avoiding the experience of hyperarousal and other forms of psychological distress. The longer a person suffers from PTSD, the more they tend to rely on avoidance strategies like dissociation, further complicating long-term trauma responses (Herman, 1998).

Depression

Many studies on the effects of adult traumatic events find depression to be one of the most commonly reported psychopathologies (Sartor et al., 2012). Research has also established a clear link between childhood maltreatment and adult depression (Heim et al., 2010) which is thought to be mediated though negative cognitions and beliefs formed about the traumatic events and childhood maltreatment (Kleim & Ahlers, 2009). Using data from the longitudinal ACE study, Chapman et al. (2004) found that the number of childhood adverse experiences was strongly related to lifetime experience of depressive disorders, and that childhood emotional abuse had the strongest associations with adult experiences of depression. This finding was replicated by Liu et al. (2012).

Depression and posttraumatic stress disorder. There is a consistent finding of high comorbidity between depression and PTSD for people who have experienced traumatic events, including childhood maltreatment (Bonanno & Mancini, 2012). It has been found that childhood emotional abuse, CPA and CSA are more strongly associated with depression for those with comorbid PTSD (Gibb, et al., 2007; Rubino et al., 2009). In a study using a non-clinical population (Perez, Abrams, Lopez-Martinez & Asmundson, 2012) lifetime traumatic event exposure (including CSA, CPA and childhood emotional abuse) were related to both depression and hyperarousal symptoms

(of PTSD). However, studies are yet to establish the causal direction of this association. For example, depression may either mediate or be a reaction to PTSD, or depression and PTSD may both be outcomes of the traumatic event experience.

Alcohol Misuse and Posttraumatic Stress

Adult traumatic experiences and alcohol misuse. There is a high incidence of exposure to traumatic events in alcohol and substance using populations (Mills, 2009). It has been suggested that the development of PTSS may lead to substance use (Chilcoat & Breslau, 1998; Schafer & Najavitis, 2007). The *self-medication* hypothesis of substance use posits that alcohol and other substances are used following trauma exposure to avoid the distress of PTSS (Khantzian, 1997). Another possible explanation for the high prevalence of trauma exposure for people who misuse alcohol and other substances is that they are also more likely to become victims of assaults and accidents due to alcohol intoxication (Ullman & Najdowski, 2010).

Childhood maltreatment and alcohol misuse. Many studies that have investigated substance-using populations have reported a relationship between childhood adversity and adult alcohol misuse (Browne & Finkelhor, 1986; Gutierres & Todd, 1997), specifically CSA (Kaukinen & DeMaris, 2005). However several studies have not found an association between childhood maltreatment and adult alcohol use (Katerndahl et al., 2005; Najavitis, Weiss & Shaw, 1999; Ullman & Breklin, 2002).

Alcohol misuse, posttraumatic stress and depression. Research in this area suggests that there is an association between alcohol problems, PTSS, depression and childhood maltreatment. Bailey, et al., (2012) found that childhood neglect was highly

associated with alcohol use problems, PTSS and depression comorbidity. Whilst there is evidence that PTSS can mediate the relationship between a traumatic event and alcohol use (Reed, Anthony & Beslau, 2007) there is also evidence suggesting that depression can mediate this relationship (Gil-Rivas, Prause & Grella, 2009; Patock-Peckham & Morgan-Lopez, 2007).

Alcohol misuse and dissociation. There is preliminary evidence that people who have experienced childhood maltreatment and have comorbid substance use and dissociation, are more likely to use substances other than alcohol (Schafer, et al., 2010). Research has also found a tenuous link between traumatic exposure and dissociation in substance using populations, leading some researchers to propose a *chemical dissociation* theory (Somer, Altus & Ginzburg, 2010). Chemical dissociation is a state of dissociation which is achieved though substance use rather than as a result of a traumatic cue or trigger (Langeland, Draijer & van den Brink, 2002). There is also evidence that severe childhood maltreatment, particularly emotional abuse, corresponds with a younger age of alcohol misuse for people with higher levels of dissociation (Schafer, et al., 2007).

Limitations in Sexual Assault Research

Associations of Sexual Assault Characteristics, Childhood Maltreatment and Adult Psychopathologies

Whilst there is clear evidence that adult and childhood traumatic events can have adverse effects on adult psychopathology, studies continue to produce mixed results. There is at least one study which links every SA characteristics and childhood

maltreatment type discussed in this paper, with at least one outcome of PTSS, dissociation, alcohol misuse and depression. Furthermore, studies investigating the impact of adult versus childhood maltreatment (Klest, Allard & Freyd, 2005), specifically SA (Elliot, et al., 2004) have found that whilst both childhood and adult traumatic events are associated with adult psychopathology, a larger proportion of the variance was for traumatic events experienced in childhood. Despite the mixed research, it appears that reactions to traumatic events experienced in adulthood are more likely to result in a single diagnoses of PTSD (Briere & Rickards, 2007) whereas the presence of childhood maltreatment leads to a more complex array of adult symptomology (Cloitre et a l., 2009).

Avoidance symptoms typically follow traumatic events, and there appears to be range of avoidance strategies to escape the distress of PTSS, including dissociation (Lanius et al., 2010), and alcohol and other substance use (Tull & Roemer, 2003). However, studies have not yet identified which characteristics of traumatic events and types of maltreatment experiences lead to which avoidance strategies. Rather, major studies tend to focus on the cumulative count of adverse childhood events as being predictive of complex traumatic reactions, such as dissociative experiences (Briere, et al., 2008; Edwards et al., 2003).

Given the associations between SA characteristics, there may be patterns of SA characteristic combinations that form SA profiles. That is, different types of SA experiences have different combinations of sexual assaults characteristics. Unfortunately, research has failed to expand on the profiles offered by Trickett et al. (2001). Childhood maltreatment types are also inter-correlated and studies investigating

several of these maltreatment types are more likely to use a cumulative number of types, rather than investigate their individual effects (Briere, et al., 2008; Cloitre, et al., 2009; Edwards et al., 2003).

Participant Factors

Many SA studies have either used tertiary students (e.g. Maker et al., 2001) or community samples (e.g. Abbey et al., 2004) which allow for comparisons between participants who experienced and did not experience SA. Fewer studies have accessed specific clinical populations such as substance use (e.g. Katerndahl et al., 2005; Mennen & Meadow, 1995, Gutierres & Todd, 1997) or psychiatric populations (e.g. Cloitre, et al., 2010; Lucenko, et al., 2000; Trickett et al., 2001).

SA research is recognised as being difficult (Briere, 1992) as there are participant ethical requirements to be accommodated during the study, such as offering crisis support services (Edwards et al., 2007). Clinical populations can be difficult to access for research as they are seen as vulnerable, and many clinicians fear that research questions may cause distress (Schwartz, 2000). However, Becker-Blease and Frey (2006) highlight that there is no research that suggests that clients are harmed by sensitive research questions.

Past SA research has predominantly targeted female participants although studies are emerging that investigate the male victim experience (Davis, 2002). The reasons for under-representation of males in SA research may be a combination of a possible epidemiological differences in the incidence of SA (Tolin & Foa, 2008), a greater likelihood of under-reporting of SA by males (O'leary & Barber, 2008), or males being less likely to seek treatment than females (Crome, 2006).

Study Design Limitations

Research questions that aim to capture the existence and extent of SA characteristics and childhood maltreatment vary between studies (Hamby & Koss, 2003). Research questions and scales are based on varying construct definitions and measure different SA criteria (Cook, Gidycz, Koss & Murphy, 2011). It has also been found that there is higher endorsement and consistency of scores between measures that provide specific behavioural descriptions (e.g. "Did your parents yell at you") compared to measures with value-laden questions ("I was emotionally abused") (Baker & Festinger, 2011). However, instrument development is progressing (Baker & Festinger, 2011) and there are a few instruments that are used across studies, while some researchers create their own scales.

The majority of studies into childhood maltreatment used retrospective study designs which involve asking study participants to recall past traumatic events, and measure current mental health (Hardt & Rutter, 2004). Concerns have been raised about the reliability of memory recall in these retrospective studies (Briere, 1992) possibly leading to biased research results. Many researchers have suggested that longitudinal designs (Widom & Morris, 1997), where children who are known to have been exposed to traumatic events and/or maltreatment can be assessed for psychopathology as adults (Acierno et al., 2001; Banyard et al., 2001; Trickett et al., 2001). There have been some high profile large scale longitudinal studies investigating childhood maltreatment, for example, the ACE study (Felitti, et al., 1998). Criticisms of the longitudinal study design include sample selection bias, high attrition rates, and the problems of finding matched control groups (Briere, 1992). It seems that achieving experimental control is an issue for both retrospective and longitudinal study designs.

Retrospective studies which used recalled childhood maltreatment that could be verified were reviewed by Hardt and Rutter (2004). The general conclusion of that study was that participants were more likely to under-report and deny traumatic childhood experiences, such as CSA, and rarely gave fictitious or inflated reports reference. This suggests that self-report information provided in in retrospective studies may result in an underestimation of trauma-related effects. Scott, McLaughlin, Smith and Ellis (2012) compared longitudinal and retrospective study methodologies using a large New Zealand sample (n = 1,413). They found comparable strengths of associations between childhood maltreatment and adult *DSM* disorders for the two study methodologies. This suggests that retrospective designs can adequately capture associations between childhood events and adult symptoms.

Summary and Conclusion

The consistent findings in the SA research include the contribution of CSA and CPA to adult psychopathology, and the cumulative effect of different childhood maltreatment experiences on a wider range of adult psychopathologies. There are consistent associations with adult psychopathology for the SA characteristics of physical intrusiveness (Katerndahl, et al., 2005), force-related strategies (Casey & Nurius, 2005), and multiple perpetrators (Schultz, et al., 2003) but not others. There are also inconsistencies in research on the impact of childhood emotional abuse and neglect on adult psychopathology. The high levels of co-existing childhood maltreatment types suggest that all maltreatment types need to be considered when investigating the impact of any of these types. Similarly, the development of SA characteristic profiles may assist research efforts into the effects of SA. Furthermore, trauma symptomatology can

be complex and the impact of childhood maltreatment does not appear to fit neatly into past or current *DSM* categories (Ford & Courtois, 2009b).

Research into the effects of SA has many limitations. The mixed findings in the SA research may be due to different populations being studied, different SA inclusion criteria, and different ways of measuring severity characteristics. High standards of experimental control are difficult to achieve, and there is a fear of causing distress when gathering sensitive research information. However the cost of not doing research into this area is continued ambiguity about the mechanisms of SA experiences and childhood maltreatment in the development of psychopathologies, such as PTSD, dissociation, depression and alcohol misuse.

The developmental pathways of traumatic childhood experiences and adult SA to adult psychopathology remain the subject of research investigations. Informative results can be obtained from many research populations and using a variety of study designs. The development and validation of reliable and consistent measures of SA and childhood maltreatment will allow for more comparable findings. Ongoing research contributes to a growing body of knowledge in a complex area of study. Whilst there remains uncertainty regarding the impacts of traumatic experiences, provision of effective treatment and preventative social, political and health responses could be compromised.

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Manuscript

Association between childhood maltreatment and the severity of sexual assault on adult psychopathology: A pilot study with clients of a sexual assault treatment service.

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Abstract

This study used a retrospective design to investigate the impact of sexual assault (SA) severity characteristics as well as different types of childhood maltreatment experiences on current adult psychopathology (posttraumatic stress symptoms (PTSS), dissociation, depression and alcohol misuse. Participants (N = 24) were recruited from a Sexual Assault Service with 20 reporting exposure to childhood sexual assault (CSA). Childhood maltreatment and sexual assault characteristics were measured using the Traumatic Event Checklist (Nijenhuis, Van der Hart & Kruger, 2002). PTSS were measured using the Posttraumatic Diagnostic Scale (Foa, Cashman, Jaycox & Perry, 1997); dissociation was measured by the Dissociative Events Scale (DES-II) (Bernstein & Putnam, 1993); depression was measured by the Beck Depression Inventory-II (BDI-II) (Beck, Steer & Brown, 1996); and Alcohol misuse was measured by the Alcohol Use Disorders identification Test (AUDIT) (Saunders, Aasland, Barbor, de le Fuente & Grant, 1993). This study found that: SA with force-related strategies had higher levels of adult dissociation; SA by more than one perpetrator had more severe adult depression; and older age of SA onset was associated with higher levels of alcohol misuse. There were no differences in adult PTSS, dissociation, depression and alcohol misuse for the perpetrator being a close family member, longer duration and higher number of SA occasions. CSA and childhood emotional abuse developmental scores were associated with dissociation. CSA scores were also associated with lower levels of alcohol misuse. Further investigation into trauma-related predictors of adult psychopathology as well as the development of a standardised (retrospective) childhood maltreatment questionnaire is recommended.

Keywords: sexual assault, sexual assault severity, sexual assault characteristics, childhood maltreatment, posttraumatic stress, dissociation, depression, alcohol misuse

Sexual assault (SA) can be a particularly traumatic experience (Briere, Kaltman & Green, 2008), and can result in psychopathology (Resick, et al., 2012). Posttraumatic stress symptoms (PTSS) are often experienced post SA and include prolonged hyperarousal, re-experiencing symptoms, maladaptive avoidance and emotional numbing (DSM-IV-TR; American Psychiatric Association, 2000). SA experiences can also lead to the cognitive and physical symptoms of depression (Heim, Shugart, Craighead & Nemeroff, 2010). Increased alcohol use has also been associated with PTSS following trauma exposure (Mills, 2009).

The dimensions of child maltreatment (that are considered to cause harm) are sexual assault, physical abuse, emotional abuse, neglect and exposure to family violence (Coates, 2009). Childhood sexual assault (CSA) has been well established as an antecedent to complex psychological symptomatology as an adult (Finkelhor & Dziuba-Leatherman, 1994; Paolucci, Genius & Violato, 2001). This includes poor affect and arousal regulation (Kaplow & Widom, 2007), dissociation (Dalenberg et al., 2012), increased risk of substance misuse (Gutierres & Todd, 1997), development of personality disorders (van Dijke et al., 2012) and physical health problems (Anda, Butchart Felitti & Brown, 2010).

Childhood physical assault (CPA) has also been found to be consistently associated with a wide range of adult psychopathologies (Banyard, Williams & Seigel, 2001; Briere, et al., 2008; Manly, Kim, Rogosch & Cicchetti, 2001; Sugaya, et al., 2012). However studies that compare CSA and CPA usually find CSA to have a stronger association with adult psychopathologies (Keyes et al., 2012) and cumulatively

lead to more severe adult psychopathologies (Cloitre et al., 2009). Also, there are fewer studies linking childhood emotional abuse and neglect with adult trauma symptoms (Cloitre et al, 2009; Dalenberg et al., 2012) however emerging evidence suggests that emotional abuse contributes more to adult psychiatric symptoms than does neglect (Keyes et al., 2012; Liu, Jager-Hyman, Wagner, Alloy & Gibb, 2012).

The difficulty when studying the effects of different childhood maltreatment experiences is that maltreatment experiences tend to co-occur (Kessler et, al., 2010; Lamont, 2011). For example, an Australian study identified that 89% of children who were sexually assaulted also experienced other forms of maltreatment (Palmer, Brown, Rae-Grant & Loughin, 2001). A major United States epidemiological study *The Adverse Childhood Experiences (ACE) study* (*n* = 17 337) similarly found their childhood maltreatment variables highly inter-related (Dong et al., 2004). Whilst it has been suggested that all forms of childhood maltreatment can constitute a single factor that is predictive of adult symptoms (Higgins, 2004), it has also been found that a greater number and variety of child maltreatment experiences leads to greater complexity of psychiatric symptoms in adulthood (Briere, et al., 2008; Greif-Green et al., 2010).

Dissociation may be an indicator of a complex trauma reaction, which has long been associated with CSA and CPA (Cloitre, 2009) and to a lesser extent, other types of childhood maltreatment (Simeon, Guralnik, Schmeidler, Sirof & Knutelska, 2001; Teicher, Samson, Polcari & McGreenery, 2006). Dissociation may also develop from any traumatic experiences that are distressing, enduring and had begun at a younger age (Herman, 2012; Lanius et al, 2010; van der Kolk, Roth, Pelcovitz, Sunday & Spinazzola, 2005).

Most studies consider the degree of physical contact of the SA to be the main indicator of severity (Ullman, Townsend, Filipas & Starzynski, 2007). For example, penetrative SA compared to other forms of SA has been associated with more severe adult psychiatric symptoms (Katerndahl, Burge and Kellogg, 2005). The use of physical force during a SA is also considered to be a severity factor impacting on traumatic symptoms (Abbey, BeShears, Clinton-Sherrod & McAuslan. 2004). In general, more severe experiences of SA will result in more severe traumatic responses (Herman, 2012).

Other assault characteristics that affect symptom severity include the relationship with the perpetrator. In particular, it has been found that the closer the relationship with the perpetrator, the more severe the psychological impact on the victim (Martin, DePrince, Cromer & Fred, 2013). Higher numbers of SA occasions, longer duration of SA and a younger onset age of SA have also been found to contribute adult psychopathology (Hedtke et al, 2008; Herman, 1992; Kaplow & Widom, 2007). Other findings of sexual assault severity include having more than one perpetrator (Trickett, Reiffman & Putnam, 2001) and the perpetrator using threats of harm (Casey and Nurius, 2005).

Different studies have found that all of these severity variables individually impact on psychological symptoms (Casey & Nurius, 2005; Kelley, Weathers, Mason & Pruneau, 2012; Mennen & Meadow, 1995). However number and duration of SA, onset age and relationship of perpetrator are also associated with each other (Trickett et al., 2001). An example of this is when a close family relative is the perpetrator; they have greater access to their victim, over a longer period of time and from a younger age,

making it difficult to differentiate the individual effects of each of these four factors (Ruggiero, McLeer & Dixon, 2000).

Given the findings of previous research, this study explored the effects of SA severity (younger age of onset, longer duration, perpetrator being a close family member, a greater number of perpetrators, the use and threat of force, and greater number of sexual assaults) on adult symptoms of posttraumatic stress, dissociation, depression and alcohol misuse, in a population of treatment seeking people who have experienced SA (as an adult and/or a child). Associations between four types of childhood maltreatment (CSA, CPA, emotional abuse and neglect) and adult symptoms of posttraumatic stress, dissociation, depression and alcohol misuse were also investigated. Thus it was hypothesised that the more severe the SA severity, the more severe the symptoms of adult PTSS, dissociation, depression and alcohol misuse. It was further hypothesised that the more severe the report of childhood maltreatment (CSA, CPA, emotional abuse and neglect) the more severe the adult PTSS, dissociation, depression and alcohol misuse.

Method

Participants

Twenty-four participants were recruited in 2012 and 2013 from the Newcastle Sexual Assault Service (New South Wales, Australia). The Newcastle Sexual Assault Service is a public health service that provides counselling for people who have experienced past and/or recent sexual assault. There were eighteen females (75.0%) and six males (25.0%), with an age range of 18 to 52 years (M = 35.5, SD = 12.1). Twenty

participants experienced CSA and four participants experienced adult SA. None of the participants experienced both CSA and adult SA.

Inclusion criteria were people who were 18 years and over and who presented for treatment of SA at the Newcastle Sexual Assault Service. Participants were excluded if their treating clinician considered that their psychological health would be adversely affected, or if they had presented for crisis intervention.

Measures

Information about the participant's trauma history was collected using the Traumatic Experiences Checklist (TEC) (Nijenhuis, Van der Hart, & Kruger; 2002). The TEC consists of 39 questions relating to lifetime trauma experiences, including age *(years);* duration *(years);* subjective level of impact measured on a 5-point likert scale (*none* to *an extreme amount*); subjective level of support measured on a 3-point scale (*none, some* or *good*); and information about the perpetrator(s) where relevant to the trauma type (e.g. relationship and age difference to the perpetrator, and number of perpetrators).

The TEC has six developmental scales (scores ranging from 0 to 12) of sexual assault (*SADS*); physical abuse (*PADS*); emotional abuse (*EADS*); emotional neglect (*ENDS*); bodily threat (from pain, bizarre punishment, or other life threat); and sexual harassment. The developmental scores reflect the duration, age (up to 18 years), relationship to perpetrator (close family or other) and subjective impact of each developmental dimension. The bodily threat developmental scale differs from the other scales by excluding the relationship to a perpetrator question and has a score range of 0

to 9. The total TEC score is the sum of the number of life traumas experienced (and is a separate construct to the developmental scales). The TEC is reported to have a Chronbach alpha coefficients of .94 for the total score, however the developmental scales have a coefficient range of .65 to .91 (Nijenhuis, et al., 2002).

For this study, the following TEC questions were adapted based on training feedback about administration difficulties from the Sexual Assault Service clinicians. Questions 1 – 29 list possible trauma experiences, with Questions 30 – 33 asking for further information about these trauma experiences. Question 30 (*How many people did this you*?) and Question 33 (*Level of support*) were relocated to the same page as the traumatic event questions. The 5-point *Impact* scale was reduced to a dichotomous scoring scale of *None/a Little* versus *Moderate/Extreme* (Questions 1 – 29). Questions about the relationship to perpetrator (Questions 14 - 29) were grouped to *immediate family* and *others*. This served to reduce the level of sensitive information asked of participants that was not required for this study. Question 31, which asks about the age difference of perpetrator and victim, and Question 32 (*Please describe any OTHER traumatic events)* were omitted as they were not required for the purposes of this study (nor contributed to scale scoring). TEC questions 34 – 39 cover demographic information, which was omitted as this was collected elsewhere in this study. This study made use of the *ENDS, EADS, PADS* and *SADS* developmental scales and the integrity of the questions relating to these scales was maintained. In this sample, Chronbach alpha was .86 for *SADS,* .98 for *PADS,* .90 for *EADS* and .96 for *ENDS.* Questions relating to the number of sexual assault events (scored as *1, 2, 3, 4, 5 or more*) and perpetrator tactics were administered at the end of the modified TEC.

PTSS were measured by the Posttraumatic Diagnostic Scale (PDS) (Foa, Cashman, Jaycox & Perry, 1997). The PDS has 49 items which measure the DSM-IV diagnostic criteria for PTSD (APA, 2000). The scale produces a PTSS severity score, which sums the responses to questions asking about the frequency of re-experiencing, avoidance and arousal symptoms (questions 22 to 38). Response choices are 0 (*not at all, or only once*), 1 (*once a week or less*), 2 (*2 to 4 times a week*), and 3 (*5 or more times a week*). The total severity score range is 0 to 51, and can be rated as none (0), mild (1 -10), moderate (11-20), moderate to severe (21 – 35) and severe (≥ 36). This measure reports high internal consistency (Chronbach alpha = .92), reliability (kappa = .74) and sensitivity (82.0%) (Foa et al., 1997). In this sample, the Chronbach alpha was .94.

Dissociative symptoms were measured using the Dissociative Events Scale (DES-II) (Bernstein & Putnam, 1993). This scale has 28 questions scored on an 11 point Likert scale indicating the percentage of time spent experiencing each symptom (0% to 100%). The final score is the sum of all questions divided by 28, creating an average score between 0 and 100. Carlson et al, (1993) found that scores over 30 are a reliable indicator of a clinical level of dissociation. The DES-II demonstrates good reliability (α = .92) (Zingrone & Alvarado, 2002). In this sample, the Chronbach alpha was .92.

Depressive symptoms were measured using the Beck Depression Inventory-II (BDI-II) (Beck, Steer & Brown, 1996). The BDI-II has 21 questions, each with four choices of how often they experience that symptom (0 being not at all, and 3 being the most frequent). An overall depression score is produced, which can be rated as *minimal (0-9), mild (10-18), moderate (19-29)* or *severe (30 – 63)* (Beck, Steer & Garbin, 1988).

The BDI-II has strong reliability (α = .92) (Beck et al., 1996). In this sample, the Chronbach alpha was .95.

Alcohol misuse was measured using the Alcohol Use Disorders identification Test (AUDIT) (Saunders, Aasland, Barbor, de le Fuente & Grant, 1993). It has 10 items, with questions 1-8 having a five point response scale and questions 9-10 having a three point response scale. A cut-off score of 8 has been found to identify a harmful level of alcohol use (sensitivity and specificity of more than .90) (Babor, Higgins-Biddle, Saunders & Monteiro, 2001). It has a demonstrated reliability of α = .80 (Bowring, Gouillou, Hellard & Dietze, 2013) and has been validated in a range of clinical settings, cultures and in the general population (Dawe, Loxton, Hides, Kavanagh, & Mattick, 2002). In this sample, the Chronbach alpha was .82.

Procedure

This study was approved by the Hunter New England Human Research Ethics Committee (HNEHREC), Hunter New England Health (Reference Number: H-2011-0223).

Potential participants were informed about the study by their treating clinician (either a female psychologist or social worker) employed by the Newcastle Sexual Assault Service. Participants were offered written information and given an opportunity to seek further information from the first author of this study (TM) before providing consent. They were further invited to consent to their treating clinician being provided with their questionnaire results to enhance treatment formulation.

Treating clinicians administered all questionnaires during therapeutic contact with their clients. The battery of self-administrable questionnaires (PDS, DES-II, BDI-II, AUDIT and the demographic questions) took approximately 30 minutes. The TEC was administered verbally by the clinician and took an additional 30 minutes.

Data Analysis

Resulting from the small sample size and non-parametric data distributions, the statistical analysis was restricted to Spearman's rho correlations and Mann-Whitney *t*-tests. The *p* value was set at .05 and one tailed correlations were used. T-tests used a 95% CI and the Levene Test to check for equality of variances. Effect sizes were further used to estimate the size difference between group means (Cohen, 1988), given that the small sample size has reduced the statistical power of the t-tests (Briere, 1992). Cohen's *d* was calculated using a pooled variance. All data was analysed using IBM SPSS Statistics 21 (IBM, 2012).

The sexual assault severity data for the first hypothesis was extracted from the TEC. SA severity variables included the assault characteristics of *age at first SA* (*years*); *duration of SA* (*years*); and *number of SA* (scored as *0, 1, 2, 3, 4, 5 or more*). Severity variables also included the perpetrator characteristics of *number of perpetrators (1, >1)*; a perpetrator being *a close family member (Yes or No*); *threat of physical force to victim or other* (*Yes or No*); and *use of physical force* during SA (*Yes or No*). The SA characteristic variables were continuous and analysed using Spearman's rho. The perpetrator characteristic variables were dichotomous and were tested using Mann-Whitney *t*-tests. Childhood data for the second hypothesis was measured by the TEC developmental scales of *SADS, PADS, EADS,* and *ENDS,* and analysed using

Spearman's rho. All hypotheses used the same symptom measures of PTSS, dissociation, depression, and alcohol misuse.

Adult SA and CSA were analysed together as one group As Mann-Whitney *t*-tests (one-tailed) revealed that there were no significant differences between CSA and Adult SA on PTSS ($t(3.92) = -0.05$, $p = .48$), dissociation ($t(3.8) = 0.31$, $p = .39$), depression ($t(3.7) = 0.17$, $p = .44$) and alcohol misuse ($t(3.8) = -1.35$, $p = .13$).

Results

Demographic Characteristics

One (*4.2%*) participant identified as Aboriginal and all participants reported being born in Australia. Ten (*41.7%*) participants were living in a relationship (married or de facto) and 10 (*41.7%*) had children living at home. Nine (*37.5%*) participants finished school at year 10 or lower, five (*20.9%*) participants continued school until year 11 or 12, and ten (*41.7%*) participants continued onto higher studies. Nine (*37.5%*) were working full-time and 15 (*62.5%*) were obtaining financial support (pension or another person).

The PTSS mean was in the *moderate to severe* range ($M = 27.2$, $SD = 13.5$) as well as below clinical levels of dissociative symptoms ($M = 19.3$, $SD = 13.0$). Depressive symptoms were in the *severe* range ($M = 24.4$, $SD = 14.7$) and alcohol misuse was in the *low-risk* range ($M = 5.3$, $SD = 5.8$).

Age of first SA ranged between two and 38 years. Twenty (83.4%) participants reported CSA ($M = 7.7$ years, $SD = 3.7$) with the duration of SA experiences ranging

from one event to 12 year (*M* = 3.7 years, *SD* = 3.8). Four participants (16.7%) reported one SA experience, whilst 16 (66.7%) reported five or more SA experiences (see Table 1). Seven of the eight participants who responded to less than five SA experiences reported the duration to be less than 12 months. Thirteen (54.2%) participants had more than one perpetrator of SA, with four perpetrators being the highest number reported. Half of the participants (*n* = 12, 50.0%) experienced SA by an immediate family member, 14 (58.3%) by another known person and five (20.8%) by a stranger (see Table 1). Fourteen (58.3%) participants experienced a threat of force to themselves or another person as part of their SA experience, and 19 (79.2%) experienced physical force during the SA (see Table 1). None of the participants who reported CSA also reported adult onset of SA.

Most of the participants either no experience of a particular type of maltreatment, or experienced more severe levels of maltreatment (see Table 1). As identified by the *SADS, PADS, EADS* and *ENDS*, 20 (83.3%) reported CSA, seven (29.2%) reported CPA, 13 (54.2%) reported childhood emotional abuse and 15 (62.5%) reported childhood emotional neglect. Two (8.3%) participants reported no childhood maltreatment, six (25.0%) had experienced one type, six (25.0%) experienced two types, three (12.5%) experienced three types and seven (29.2%) participants experienced all four types of abuse.

[Table 1 here]

Hypothesis 1: Association of sexual assault severity with posttraumatic stress symptoms, dissociation, depression and alcohol misuse.

Spearman's rho correlations were used to test for associations between the SA severity variables with the psychological symptoms of PTSS, dissociation, depression and alcohol misuse. The relationships between severity variables were also tested using Spearman's rho correlations.

Age at first SA. Older age of SA onset was associated with alcohol misuse (r_s = -.53, p = .004). Age of SA onset was not associated with PTSS, dissociation and depression (see Table 2). Younger onset age was associated with duration (r_s = -.56, p = .002) and number of SA (r_s = -.60, p = .001) (see Table 3).

Duration and number of SA. There were no significant associations with duration or number of SA, with PTSS, dissociation, depression and alcohol misuse (see Table 2). There was a strong association between the assault characteristics of duration and number of SA (r_s = .77, p < .001) (see Table 3).

[Table 2 here]

[Table 3 here]

Number of perpetrators. Due to the small sample size, we used the TEC *Number of Perpetrator* groupings of *1* and *more than 1*. Participants who reported more than one perpetrator had more severe depressive symptoms (M = 30.3, SD = 13.6) compared to those who reported one perpetrator (M = 17.4, SD = 13.2, t(21.55) = -0.24,

p = .03, d = 0.96) (see Table 4). Whilst not statistically significant, t(20.05) = -1.48, p = .16,a medium effect size (d = 0.61) was found for those who reported one perpetrator (M = 22.8, SD = 14.1) compared to those who reported more than one perpetrator (M = 30.9, SD = 12.3) for PTSS (see Table 4).

Relationship with perpetrator. There was no significant difference between the relationship status of the perpetrator (close family member or not) with PTSS, dissociation, depression or alcohol misuse (see Table 4). There was a significant association between the relationship of perpetrator and a younger onset age of SA (r_s = -.50, p = .007), the duration of SA (r_s = .59, p = .001) and the number of SA (r_s = .53, p = .004) (see Table 3).

Threat of physical force to victim or other. There was a trend for participants who experienced threat of force during the SA to report higher dissociative symptoms (M = 23.3, SD = 13.1) compared to those who did not experience threat of force (M = 13.8, SD = 11.3), t(21.13) = -1.92, p = .07, d = 0.77). Whilst not statistically significant, t(12.51) = -1.35, p = .20, a medium effect size (d = 0.62) was found for those who experienced threat of force having higher levels of alcohol misuse (M = 7.3, SD = 7.5) than those who did not experience threat of force (M = 3.8, SD = 3.9) (see Table 4). Younger onset of SA experience was associated with threats of force during the assaults (r_s = -.35, p = .05) (see Table 3).

Use of force. The use of force resulted in higher dissociative symptoms (M = 22.1, SD = 13.0) compared to those who did not experience force (M = 8.6, SD = 5.8) t(15.54) = -3.42, p = .004, with a large effect size (d = 1.12) (see Table 4). There was a

trend, $t(21.5) = 1.95$, p = .06, $d = 0.56$, for those who experienced force during the SA to have higher PTSS ($M = 28.7$, $SD = 14.7$) compared to those who did not experience use of force during the SA ($M = 21.2$, $SD = 4.2$) (see Table 4). The use of force and the threat of force (to the victim or another person) during SA were not significantly associated with each other ($r_s = .19$, $p = .19$) (see Table 3).

[Table 4 here]

Hypothesis 2: Associations of childhood maltreatment with posttraumatic stress symptoms, dissociation, depression and alcohol misuse.

Spearman's rho correlations were used to test for associations between *SADS, PADS, EADS* and *ENDS* with PTSS, dissociation, depression and alcohol misuse. Higher levels of CSA (as measured by the *SADS*) were associated with higher dissociation scores ($r_s = .41$, $p = .02$) and lower alcohol misuse scores ($r_s = -.45$, $p = .01$) (see Table 5). We also found more severe childhood emotional abuse (as measured by the *EADS*) was associated with higher dissociation scores ($r_s = .35$, $p = .05$) (see Table 5).

Further analysis was conducted on *SADS, PADS, EADS* and *ENDS* with each other using Spearman's rho correlations. *SADS* was highly associated with *PADS* ($r_s = .53$, $p = .004$), *EADS* ($r_s = .60$, $p = .001$), and *ENDS* ($r_s = .43$, $p = .02$). *PADS* was highly associated with *EADS* ($r_s = .72$, $p = .000$) and *ENDS* ($r_s = .61$, $p = .001$). *EADS* was associated with *ENDS* ($r_s = .46$, $p = .01$) (see Table 5).

[Table 5 here]

Discussion

This study found that in adult treatment seekers for SA, levels of posttraumatic stress and depression were clinically high, and levels of dissociation and alcohol misuse were clinically low (with symptom averages being below clinical thresholds). Most participants had experienced CSA (n = 20) rather than adult SA (n = 4), and most (n = 20) had experienced multiple sexual assaults, with half (54%) of the participants reporting more than one perpetrator. These SA characteristics are comparable to those found by Trickett et al (2001) who also studied a sexual assault population. The outcomes of this study may be applicable to people with similar CSA histories rather than a single SA experience as an adult.

One finding in this study was that use of force and threat of force during a SA were both associated with higher levels of dissociation. Dissociation is considered by many researchers to be a fear-based strategy (Felmingham et al., 2008; Lanius, et al., 2010) suggesting that fear may be a common experience of the two force-related perpetrator strategies. However, in this study, use of force was associated with higher PTSS, whereas threat of force was not. Furthermore, these two force-related strategies were not associated with each other, suggesting that there may be differences in the psychological experiences of each force-related strategy. It may be that the threat of force gave the victim a sense of control over the course of the assault (by being able to comply with the perpetrators demands) which may then reduce PTSS severity. Past research investigating the effects of force-related strategies on SA have either studied the use of force only (Epstein, Saunders & Kilpatrick, 1997; Ullman, et al., 2007) or have grouped use and threat of force together (Trickett et al., 2001) to find associations

with both PTSS and dissociation. It is difficult to compare the findings of this study with other studies that have not explored the unique effects of use and threat of force on dissociation and PTSS.

There were several associations between the SA and perpetrator characteristics. As predicted, younger age of SA onset, duration and number of SA experiences, and the perpetrator being a close family member were associated with each other, which is consistent with the study findings of Trickett et al. (2001). Furthermore, the association found between duration and number of SA may suggest that these two variables were measuring similar SA experiences. These findings are supported by other studies that suggest it is difficult to measure SA duration, number, onset age and relationship with perpetrator in isolation to each other (Ruggiero, et al., 2000). The finding that relationship to perpetrator, SA onset age, duration and number was not associated with any outcome is consistent with meta-analysis of studies which included these SA characteristics (Paolucci, et al., 2001).

Overall, depressive symptoms were high, which is consistent with other research which has found associations between SA and depression (Katerndahl, et al., 2005). However the only SA severity variable that was related to depression was the number of perpetrators. Having more than one SA perpetrator was associated with more severe levels of adult depression, as opposed to mild levels for reporting one perpetrator. This finding is similar to research by Liu et al. (2012), who found that a higher number of perpetrators of CSA predicted more adult depressive episodes. One explanation for this is that multiple perpetrators reinforce negative self-schema based on self-blame and a

low sense of self-worth, leading to an ongoing depressive cognitive style (Heim, et al., 2010; Liu et al, 2012).

An unexpected finding was that the older the age of first SA, the higher the level of alcohol misuse as an adult. This finding may be explained by younger children not having access to alcohol given that the average age of SA onset for the entire sample was 11 years. In particular, the average onset age for those first sexually assaulted in childhood was under eight years of age. It may be that being a child at the time of SA onset creates a reliance on other coping strategies. There were high overall levels of PTSS and depression in this study, and low levels of alcohol misuse, reflecting that for this sample, alcohol was generally not a strategy used to cope with PTSS and depression. However, the higher rates of alcohol consumption levels found for participants with older first experiences of SA is consistent with research findings by Kingston and Raghaven (2009) who conducted a cross-sectional community study with adolescents, where they found that CSA preceding first substance use did not associate with earlier first use of substances.

The TEC developmental scales used in this study were highly associated with each other, suggesting comorbidity between the types of childhood maltreatment (CSA, CPA, and childhood emotional abuse and neglect) as found in other studies (Greif-Green, et al., 2010; Kessler, et al., 2010). None of the developmental scales were associated with adult PTSS or depression; although dissociation was associated with SADS and EADS. This finding is consistent with Elliot, Mok & Briere's (2004) finding that chronic childhood maltreatment was more likely to produce symptoms of

dissociation than posttraumatic stress, whilst specific traumatic incidents were more likely to result in posttraumatic stress than dissociation.

PADS or ENDS were not significantly associated with the adult psychological symptoms measured in this study. It may be that active *emotional* elements of abuse (rather than passive neglect or physical abuse) create the developmental conditions for dissociation to develop as a coping mechanism. It may be that when physical assault occurs as part of SA, the overall traumatic experience could be exacerbated, although CPA did not worsen adult psychological symptoms in this sample. However, it is worth noting that less than a third of this sample (n = 5) experienced CPA, which would have reduced the statistical power to detect a relationship.

Study Limitations

Generality of the findings may be a limitation of this study. The participants in this study were mostly non-Indigenous and were all born in Australia, with almost half achieving tertiary qualifications. This is consistent with findings by Ullman and Brecklin (2002) in the United States which found that more educated Caucasian people sought treatment at a mental health services for SA when compared to other demographic groups.

One limitation of this study was the small sample size, which may explain the finding of there being no participant who had experienced both CSA and adult SA. This is inconsistent with other research findings where approximately 60% of people who experienced CSA will experience further SA as an adult (Elliott et al., 2004). Furthermore, it is difficult to compare the sexual assault characteristics of this sample to

those of the population of clients of a sexual assault service due to the lack of published research providing these details.

The low number of participants in this study reduced the statistical power of analysis, limiting us to univariate statistical methods (correlations and t-tests). However, since some large effect sizes were achieved, and a lack of power increases the probability of type II errors, the results may be underestimation of associations and differences between groups (Briere, 1992).

The TEC is a relatively new instrument which allows for a combination of SA characteristics to provide developmental information. Psychometric investigations have yet to fully validate this instrument. Shortcomings in the TEC developmental scales were found in this study. The TEC developmental scales are formed by use of a scoring grid which relies on duration, relationship to perpetrator and subjective impact of experiences. Firstly, the use of subjective ratings of psychological impact as part of the independent variable, could inflate its relationship with dependant variables, which also measure the psychological impact of trauma. Secondly, there was potential for information relating to duration of abuse to be distorted by the design of the scoring grid. For example, six years of abuse could yield a score equal to two years of abuse. Thirdly, the TEC questionnaire itself proved difficult to administer in a clinical setting, and required some modifications. Whilst efforts were made to protect the integrity of the information collected for the developmental scales, nonetheless, these changes could have compromised the validity and reliability of this measure.

Future Research

Further assessment of the age at SA of adult treatment seekers to SA services can assist to clarify ongoing service delivery needs. As this study showed that males also presented for SA treatment, future research is required to develop evidence-based treatments for this patient group (Davis, 2002).

Further evaluation and development of the TEC and other measures of past traumatic experiences could establish more reliable and valid instruments, with which to further explore the impact and relationships between SA characteristics, and childhood maltreatment. A larger scale study could allow the relationships between SA and perpetrator characteristics to further develop SA profiles and identify any unique associations with long term effects on dissociation, PTSS, depression and alcohol misuse. Greater understanding of the effects of SA characteristics and childhood maltreatment experiences would support the evidence-base for tailored treatment approaches for people who can experience diverse and complex trauma responses (Courtois, 2008).

Conclusion

We found limited evidence that the experience of different types of childhood maltreatment contributed differently to PTSS, dissociation, depression and alcohol misuse. The main finding of CSA being the maltreatment type most likely to associate with adult psychopathology (Cloitre, 2009) was supported. However we did not find evidence for CPA also being associated (Cloitre, et al., 2009). Replication of the SA severity and child maltreatment variables studied here, with a larger sample size (to achieve adequate power) and use of measures which best capture the characteristics of

SA and maltreatment experiences could further identify the associations between SA characteristics and subsequent psychopathology.

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Table 1

Sexual Assault Demographic Characteristics

Characteristic	*n (%)*	*M (SD)*	Range
Years since last Assault		21.8 (15.6)	0 – 45 years
Age at First Assault (years)		10.9 (*8.9*)	2 - 38 years
Child	20 (*83.3*)	7.7 (3.7)	2 – 15 years
Adult	4 (*16.7*)	27.3 (9.8)	18 – 38 years
Duration (years)		3.7 (*3.8*)	Single event – 12 years
No of Assaults		3.9 *(1.6)*	1 - 5 or more
One	4 (*16.7*)		
Two	2 (*8.3*)		
Three	2 (*8.3*)		
Four	0 (*0.0*)		
Five or more	16 (*66.7*)		
No of Perpetrators		1.9 (*1.1*)	1 - 4
One	11 (*45.8*)		
More than one	13 (54.2)		
Two	4 (*16.7*)		
Three	3 (*12.5*)		
Four	3 (*12.5*)		
Missing	3 (*12.5*)		
Perpetrator Relationship[A]			
Immediate Family	12 *(50.0)*		
Other Known Person	14 *(58.3)*		
Stranger	5 *(20.8)*		
Threat of Physical Force			
Yes	14 (*58.3*)		
No	10 (*41.7*)		
Use of Physical Force			
Yes	19 (*79.2*)		
No	5 (*20.8)*		
SADS[b]		5.2 (*3.7*)	0 - 12
0	4 (16.7)		
1-11	18 (75.0)		
12	2 (8.3)		
PADS[b]		3.0 (*4.8*)	0 - 12
0	17 (70.8)		
1-11	4 (16.7)		
12	3 (12.5)		
EADS[b]		5.3 (*5.5*)	0 - 12
0	11 (45.8)		
1-11	5 (20.8)		
12	8 (33.3)		
ENDS[b]		5.3 (5.0)	0 - 12
0	9 (37.5)		
1-11	9 (37.5)		
12	6 (25.0)		

Note.N = 24.

[A]more than 100% as some participants had more than 1 kind of sexual assault.

[b]SADS = Sexual Assault Developmental Scale, PADS = Physical Assault Developmental Scale, EADS = Emotional Assault Developmental Scale, and ENDS = Emotional Neglect Developmental Scale.

Table 2

Associations between Sexual Assault Characteristics, Perpetrator Characteristics and Posttraumatic Stress Symptoms, Dissociation, Depression and Alcohol Misuse

Assault and Perpetrator Characteristics	Posttraumatic Stress Symptoms	Dissociation	Depression	Alcohol misuse
1. Age	-.16 .23	-.22 .15	-.10 .32	.53** .004
2. Duration	.21 .16	.27 .10	.11 .31	-.24 .13
3. Number of SA	.02 .46	.04 .43	-.06 .38	-.24 .13
4. Number of perpetrators (1/>1)	.30 .08	-.10 .32	.46* .01	-.23 .14
5. Close family (Y/N)	.16 .23	.11 .31	-.08 .36	-.23 .14
6. Threat of force (Y/N)	.02 .46	.40* .03	-.24 .13	-.186 .19
7. Use of force (Y/N)	.25 .12	.47* .01	-.09 .34	-.01 .49

Note. $N = 24$.

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

Table 3

Associations between Sexual Assault Characteristics

Assault and Perpetrator Characteristics	Age	Duration	Number of Sexual Assaults	Number of Perpetrators	Close family Y/N	Threat of force Y/N	Use of force Y/N
Age	–						
Duration	-.56** .002	–					
Number of SA	-.60** .001	.77** .000	–				
Number of perpetrators (1/>1)	-.25 .12	-.02 .47	-.10 .32	–			
Close family (Y/N)	-.50** .007	.59** .001	.53** .004	.08 .35	–		
Threat of force (Y/N)	-.35* .05	.12 .29	.19 .19	.07 .37	.00 .50	–	
Use of force (Y/N)	.11 .30	-.13 .27	-.16 .23	-.27 .11	.10 .32	.19 .19	–

Note. $N = 24$.

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

Table 4

T-tests and Effect Sizes of Perpetrator Characteristics with Posttraumatic Stress Symptoms, Dissociation, Depression and Alcohol Misuse

Perpetrator Characteristics	M (SD)	M (SD)	*df*	*t*	*p*	95% CI LL	95% CI UL	Cohen's *d*
Number of Perpetrators	1 (n = 11)	>1 (n = 13)						
PTSS	22.8 (14.1)	30.9 (12.3)	20.05	-1.48	.16	-19.38	3.32	0.61
Dissociation	21.3 (14.4)	17.7 (12.1)	19.72	.66	.52	-7.80	15.07	0.28
Depression	17.4 (13.2)	30.3 (13.6)	21.55	-2.36	.03*	-24.36	-1.53	0.96
Alcohol misuse	6.2 (5.5)	4.5 (6.2)	21.96	.72	.48	-3.23	6.67	0.29
Relationship	Close family (n = 12)	Other (n = 12)						
PTSS	28.9 (13.5)	25.4 (13.8)	22.00	-.63	.54	-15.06	8.06	0.26
Dissociation	19.2 (10.4)	19.4 (15.7)	19.07	.04	.97	-11.16	11.58	0.02
Depression	23.8 (15.7)	25.0 (14.4)	21.84	.20	.84	-11.48	13.98	0.08
Alcohol misuse	4.4 (6.4)	6.1 (5.4)	21.44	.69	.50	-3.34	6.67	0.28
Threat of Force	Yes (n = 14)	No (n = 10)						
PTSS	27.6 (12.4)	26.5 (15.5)	16.75	-.19	.85	-13.64	11.35	0.08
Dissociation	23.3 (13.1)	13.8 (11.3)	21.13	-1.92	.07	-19.94	0.81	0.77
Depression	21.7 (12.9)	28.1 (17.0)	16.01	1.00	.33	-7.13	19.90	0.43
Alcohol misuse	3.8 (3.9)	7.3 (7.5)	12.51	1.35	.20	-2.13	9.16	0.62
Use of Force	Yes (n = 19)	No (n = 5)						
PTSS	28.7 (14.7)	21.2 (4.2)	21.54	-1.95	.06	-15.55	6.42	0.56
Dissociation	22.1 (13.0)	8.6 (5.8)	15.54	-3.42	.004*	-21.90	-5.10	1.12
Depression	24.6 (16.3)	23.6 (6.5)	17.46	-.21	.84	-10.99	9.03	0.07
Alcohol misuse	5.4 (6.1)	4.6 (5.0)	7.50	-.31	.77	-7.01	5.37	0.14

Note. PTSS = posttraumatic stress symptoms.

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

Table 5

Associations between Traumatic Experiences Checklist Developmental Scales (Sexual Assault, Physical Assault, Emotional Assault and Emotional Neglect) with Posttraumatic Stress Symptoms, Dissociation, Depression and Alcohol Misuse

TEC Scale	PTSS	Dissociation	Depression	Alcohol Misuse	SADS	PADS	EADS	ENDS
SADS	.24 .13	.41* .02	.03 .15	-.45* .01	–			
PADS	.25 .13	.17 .22	.07 .38	-.26 .11	.53** .004	–		
EADS	.11 .31	.35* .05	.00 .50	-.15 .24	.60** .001	.72** .000	–	
ENDS	.29 .09	.05 .40	.19 .19	-.25 .12	.43* .02	.61** .001	.46* .01	–

Note: N=24. PTSS = posttraumatic stress symptoms, SADS = sexual assault developmental scale, PADS= physical assault developmental scale, EADS = emotional assault developmental scale, and ENDS = emotional neglect developmental scale.

Appendices

Appendix A

Journal of Traumatic Stress

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Journal Article

Kraemer, H.C. (2009). Events per person-time (incidence rate): A misleading statistic? *Statistics in Medicine, 28*, 1028–1039. doi: 10.1002/sim.3525

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Book Chapter

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Appendix B

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Level 3 David Maddison Building

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Information Statement for the Research Project:
Predictors of Dissociation following past or recent Sexual Assault

Document Version 2; Dated 25.5.2011

You are invited to take part in the research identified above. It is being conducted as part of Tamar Macks' post-graduate studies at the University of Newcastle and is supervised by Kylie Bailey (Clinical Psychologist and University of Newcastle Lecturer) and Professor Mike Startup of the School of Psychology at the University of Newcastle. The purpose of the research is to explore the contributing factors to adult trauma reactions and symptoms following past or recent sexual assault.

Why are you being invited to participate?
You are being invited to participate in the research as you are accessing counselling services through the Sexual Assault Service. Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you. Any decision not to participate, or to withdraw from the research project, will not affect your current face-to-face counselling, or your relationship with the Sexual Assault Service or the University of Newcastle. If you do consent to participate, you may withdraw from the project at any time without giving a reason and you have the option of withdrawing any data which identifies you.

If you agree, Tamar Macks will contact you and will be able to answer any questions regarding this research. If you do not agree, Tamar Macks or any of the other researchers from the University of Newcastle will not be informed of your details.

Who can participate in the research?
Any adult who has experienced sexual assault or abuse at any time in their life, and is currently a client of the Sexual Assault Service may participate in the research.

How much time will it take?
The time asked of you by the researchers will include the completion of four pen and paper questionnaires, which should take around 30 minutes to complete.

What does it involve?
If you agree to participate in this research, you will be asked to attend one of your initial appointments 30 minutes before your appointment time to complete the four questionnaires. The

questionnaires will ask about your current emotional and psychological reactions to sexual assault. If you give permission for your counsellor to be provided with the results of these questionnaires, they can discuss your individual results with you, and use this information to help with your treatment. However, if you choose, this information can be kept from your counsellor.

Your face-to-face counsellor will be asked to provide the researchers with information about your past traumatic experiences in a questionnaire format. For most participants, this is the same information that you would be discussing during your initial counselling sessions. Be assured that you and/or your counsellor can choose to not discuss some aspects of your trauma background.

Is the research confidential?
The research is confidential. None of your collected information will be repeated to anyone outside of the research team without your permission.

All obtained information will be marked with a participant identification number only. No personal details will be associated with the labelling of these records. All records will be stored securely so that only the research team can access them. All personal information will be accessed, used and stored in accordance with Commonwealth Privacy Laws and the NSW Health Records and Information Privacy Act 2002.

***Are there any risks or benefits of participating*?**
The risks related to participating in this research include the potential for distress. You will have the opportunity to discuss your reactions to the questionnaires with your counsellor immediately upon completion of the questionnaires. **If you find that you need to talk about how you are feeling outside of your counselling appointment, you can contact the NSW RAPE CRISIS CENTRE (24 hour – 7 day service) on 1800 424 017.**
The research is not designed to be of direct benefit to participants. However, the risks are minimal. Similar procedures have been used before and no harm has been reported. If you choose to share your results with your counsellor, the results may assist by providing details of specific psychological trauma symptoms. Also, you might find that completing the questionnaires helps you to focus on some of these difficulties and, perhaps, gain a greater understanding of them.

Are there any legal concerns?
The information that you provide cannot be accessed for legal purposes. The information collected for the direct purpose of this study will **not** be stored on your official client records, and as such is not subject to subpoena or other legal requests. Any assessment information required for legal action will need to be organised as a separate process to this study.

How will the information collected be used?
All individual information will be grouped to form one large data set. We are investigating the link between different kinds of traumatic experiences, where sexual assault is included, and patterns of later psychological reactions. The final report will reflect the group data, and no individual results will be commented upon. The purpose of this research is to add to the body of professional knowledge which assists all counsellors who work with people who have experienced sexual assault. This will occur through the submission of the final report to professional scientific journals for publication and through presentations at professional conferences. The information collected will also form a thesis to be submitted for Ms Tamar Macks' Doctorate degree. The researchers are also requesting that non identifying information be saved so that it can be used in future research about sexual assault and trauma reactions. Again, please be assured that individual participants or their individual questionnaire results will not be identified in any reports or presentations arising from this project.

What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. You have agreed, Ms Tamar Macks will also give you a call so that you have the opportunity to ask questions. If there is anything you do not understand, or you have questions, please contact her on the number below.

If you would like to participate, please complete the attached Consent Form and provide to the research team via the Sexual Assault Service (at your next appointment). Once signed consent has been received, you will be asked to attend 40 minutes before one of your early appointments to complete the 4 pen and paper questionnaires.

Further information
If you would like further information please contact either:

Ms Tamar Macks
Telephone 61+ 2 + 4924 6333
e-mail: Tamar.Macks@hnehealth.nsw.gov.au

or

Ms Kylie Bailey
Telephone: 61 + 2 + 4913 8427
Fax 61 2 + 4913 8148
e-mail: Kylie.Bailey@newcastle.edu.au

Thank you for considering this invitation.

Ms Kylie Bailey Clinical Psychologist and Lecturer	Ms Tamar Macks Registered Psychologist	Prof Mike Startup Professor of Clinical Psychology

Complaints about this research
This project has been approved by the HNE Human Research Ethics Committee, Reference No" 11/05/18/4.03

Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to one of the following:

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Manager Research Ethics and Governance
Hunter New England Health

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Appendix C

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Consent Form for the Research Project:
Predictors of dissociation following sexual assault.

Kylie Bailey
Tamar Macks
Professor Mike Startup

Document Version 1; dated 6.5.2011

I agree to participate in the above research project and give my consent freely.

I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand that I do not have to consent to participate in the research and that this will not have any adverse consequence for me. If I do consent, I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

Please tick any or all of the three sections below.

I consent to:

- ☐ Completing questionnaires (either by myself or with a counsellor);
- ☐ My counsellor providing information to Ms Tamar Macks about my assault and trauma history. I understand that I will not be able to be identified by the research team. I understand that if I withdraw consent to participate in the research, my counsellor will be informed to no longer give information about me;
- ☐ Results of my clinical questionnaires being given to my counsellor at the Sexual Assault Service so that she can give me feedback about my results, and use my information to assist the counselling process.

I have had the opportunity to have questions answered to my satisfaction.

Print Name: _____

Signature:_____**Date:** _____

If you would like to be informed of the research findings, please supply your contact details.

Contact Address:_____

_____

Contact Telephone Number:_____

Appendix D

HUNTER NEW ENGLAND
NSW HEALTH

28 June 2011

Ms Kylie Bailey
Faculty of Health
Level 3, David Maddison Building
University of Newcastle

Dear Ms Bailey,

Re: Predictors of Dissociation following sexual assault (11/05/18/4.03)

HNEHREC reference number: 11/05/18/4.03
HREC reference number: HREC/11/HNE/175
SSA reference number: SSA/11/HNE/250

Thank you for submitting an application for authorisation of this project. I am pleased to inform you that authorisation has been granted for this study to take place at the following sites:

- **Newcastle Sexual Assault Service**

The following conditions apply to this research project. These are additional to those conditions imposed by the Human Research Ethics Committee that granted ethical approval:

1. Proposed amendments to the research protocol or conduct of the research which may affect the ethical acceptability of the project, and which are submitted to the lead HREC for review, are copied to the research governance officer;
2. Proposed amendments to the research protocol or conduct of the research which may affect the ongoing site acceptability of the project, are to be submitted to the research governance officer.

Yours faithfully

For: Dr Nicole Gerrand
Research Governance Officer
Hunter New England Local Health District

Hunter New England Research Ethics & Governance Unit
(Locked Bag No 1)
(New Lambton NSW 2305)
Telephone (02) 49214 950 Facsimile (02) 49214 818
Email: hnehrec@hnehealth.nsw.gov.au
http://www.hnehealth.nsw.gov.au/research_ethics_and_governance_unit

Appendix E

Questionnaires for the Research Project:

Predictors of dissociation following sexual assault.

Thank you for completing these questionnaires.

Please note: The Sexual Assault Service number which we will record below is the only identifier of your information.

SAS Number: _____

BDI-II

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group.

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self – Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self Criticalness

0 I don't criticise or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticise myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would like to kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

11. Agitation

0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in Sleep Pattern

0 I have not experienced any change in my sleeping pattern.

1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.
2b I sleep a lot less than usual.

3a I sleep most of the day.
3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual
1 I am more irritable than usual
2 I am much more irritable than usual
3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.
2b My appetite is much greater than usual.

3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interest in sex now.
3 I have lost interest in sex completely.

AUDIT

Please mark the answer that best describes your answer. Your answers will remain confidential.

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never (go to q.9)	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor or other health worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year

PDS

PART 1

Many people have lived through or witnessed a very stressful and traumatic event at some point in their lives. Indicate whether or not you have experienced or witnessed each traumatic event listed below by circling that item.

1. Serious accident, fire, or explosion (for example, an industrial, farm, car, plane, or boating accident)

2. Natural disaster (for example, tornado, hurricane, flood, or major earthquake)

3. Non-sexual assault by a family member or someone you know (for example, being mugged, physically attacked, shot, stabbed, or held at gunpoint)

4. Non-sexual assault by a stranger (for example, being mugged, physically attacked, shot, stabbed, or held at gunpoint)

5. Sexual assault by a family member or someone you know (for example, rape or attempted rape)

6. Sexual assault by a stranger (for example, rape or attempted rape)

7. Military combat or a war zone

8. Sexual contact when you were younger than 18 with someone who was 5 or more years older than you (for example, contact with genitals, breasts)

9. Imprisonment (for example, prison inmate, prisoner of war, hostage)

10. Torture

11. Life-threatening illness

12. Other traumatic event

13. If you answered Yes to Item 12, specify the traumatic event:

PART 2

14. If you marked Yes for more than one traumatic event in Part 1, *indicate which one bothers you the most*.

1. Accident
2. Disaster
3. Non-sexual assault/someone you know
4. Non-sexual assault/stranger
5. Sexual assault/someone you know
6. Sexual assault/stranger
7. Combat
8. Sexual contact under 18 with someone 5 or more years older than you
9. Imprisonment
10. Torture
11. Life-threatening illness
12. Other traumatic event

Please answer the following questions in relation to your worst experience of Sexual Assault.

15. How long ago did the sexual assault happen? (circle ONE of the items below)

1. Less than 1 month
2. 1 to 3 months
3. 3 to 6 months
4. 6 months to 3 years
5. 3 to 5 years
6. More than 5 years

For the following questions, circle Y for Yes or N for No.
During the traumatic event:

16. Were you physically injured?	**Y**	**N**
17. Was someone else physically injured?	**Y**	**N**
18. Did you think that your life was in danger?	**Y**	**N**
19. Did you think that someone else's life was in danger?	**Y**	**N**
20. Did you feel helpless?	**Y**	**N**
21. Did you feel terrified?	**Y**	**N**

PART 3

Below is a list of problems that people sometimes have after experiencing a traumatic event. Read each one carefully and choose the answer (0-3) that best describes how often that problem has bothered you IN THE PAST MONTH. Rate each problem with respect to the traumatic event you marked in Item 14.

0 = Not at all or only one time
1 = Once a week or less/once in a while
2 = 2 to 4 times a week/half the time
3 = 5 or more times a week/almost always

22. Having upsetting thoughts or images about the traumatic event that came into your head when you didn't want them to

0 1 2 3

23. Having bad dreams or nightmares about the traumatic event

0 1 2 3

24. Reliving the traumatic event, acting or feeling as if was happening again

0 1 2 3

25. Feeling emotionally upset when you were reminded of the traumatic event (for example, feeling scared, angry, sad, guilty, etc.)

0 1 2 3

0 = Not at all or only one time
1 = Once a week or less/once in a while
2 = 2 to 4 times a week/half the time
3 = 5 or more times a week/almost always

26. Experiencing physical reactions when you were reminded of the traumatic event (for example, breaking out in a sweat, heart beating fast)

0 1 2 3

27. Trying not to think about, talk about, or have feelings about the traumatic event

0 1 2 3

28. Trying to avoid activities, people, or places that remind you of the traumatic event

0 1 2 3

29. Not being able to remember an important part of the traumatic event

0 1 2 3

30. Having much less interest or participating much less often in important activities

0 1 2 3

31. Feeling distant or cut off from people around you

0 1 2 3

32. Feeling emotionally numb (for example, being unable to cry or unable to have love feelings)

0 1 2 3

33. Feeling as if your future plans or hopes will not come true (for example, you will not have a career, marriage, children, or a long life)

0 1 2 3

34. Having trouble falling or staying asleep

0 1 2 3

35. Feeling irritable or having fits of anger

0 1 2 3

0 = Not at all or only one time
1 = Once a week or less/once in a while
2 = 2 to 4 times a week/half the time
3 = 5 or more times a week/almost always

36. Having trouble concentrating (for example, drifting in and out of conversations, losing track of a story on television, forgetting what you read)

0 1 2 3

37. Being overly alert (for example, checking to see who is around you, being uncomfortable with your back to a door, etc.)

0 1 2 3

38. Being jumpy or easily startled (for example, when someone walks up behind you)

0 1 2 3

39. How long have you experienced the problems that you reported above? (Circle only ONE of the items below.)

1. Less than 1 month
2. 1 to 3 months
3. More than 3 months

40. How long after the traumatic event did these problems begin? (Circle only ONE of the items below.)

1. Less than 6 months
2. 6 or more months

PART 4

Indicate if the problems you rated in Part 3 have interfered with any of the following areas of your life DURING THE PAST MONTH. Circle Y for Yes or N for No.

41. Work Y / N
42. Household chores Y / N
43. Relationships with friends Y / N

44. Fun and leisure activities Y / N
45. Schoolwork Y / N
46. Relationships with your family Y / N

47. Sex life Y / N
48. General satisfaction with life Y / N
49. Overall level of functioning in all areas of your life Y / N

Dissociative Events Scale (DES)

Directions

This questionnaire consists of 28 questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important that your answers show how often these experiences happen to you when you are not under the influence of alcohol and drugs.

To answer these questions, please determine to what degree the experience described in the question applies to you and circle the number to show what percentage of the time you have the experience.

1) Some people have the experience of driving or riding in a car or bus or train and suddenly realising that they don't remember what has happened during all or part of the trip. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

2) Some people find that sometimes they are listening to someone talk and they suddenly realise that they did not hear part or all of what was said.

0% 10 20 30 40 50 60 70 80 90 100%

3) Some people have the experience of finding themselves in a place and having no idea of how they got there.

0% 10 20 30 40 50 60 70 80 90 100%

4) Some people have the experience of finding themselves dressed in clothes that they don't remember putting on.

0% 10 20 30 40 50 60 70 80 90 100%

5) Some people have the experience of finding new things among their belongings that they do not remember buying.

0% 10 20 30 40 50 60 70 80 90 100%

6) Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before.

0% 10 20 30 40 50 60 70 80 90 100%

7) Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person.

0% 10 20 30 40 50 60 70 80 90 100%

8) Some people are told that they sometimes do not recognise friends or family members.

0% 10 20 30 40 50 60 70 80 90 100%

9) Some people find that they have no memory for some important event in their lives (for example, a wedding or graduation).

0% 10 20 30 40 50 60 70 80 90 100%

10) Some people have the experience of being accused of lying when they do not think that they have lied.

0% 10 20 30 40 50 60 70 80 90 100%

11) Some people have the experience of looking in a mirror and not recognising themselves.

0% 10 20 30 40 50 60 70 80 90 100%

12) Some people have the experience of feeling that other people, objects, and the world around them are not real.

0% 10 20 30 40 50 60 70 80 90 100%

13) Some people have the experience of feeling that their body does not belong to them.

0% 10 20 30 40 50 60 70 80 90 100%

14) Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event.

0% 10 20 30 40 50 60 70 80 90 100%

15) Some people have the experience of not being sure whether thing that they remember happening really did happen or if they just dreamed them.

0% 10 20 30 40 50 60 70 80 90 100%

16) Some people have the experience of being in a familiar place but finding it strange and unfamiliar.

0% 10 20 30 40 50 60 70 80 90 100%

17) Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them.

0% 10 20 30 40 50 60 70 80 90 100%

18) Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them.

0% 10 20 30 40 50 60 70 80 90 100%

19) Some people find that they sometimes are able to ignore pain.

0% 10 20 30 40 50 60 70 80 90 100%

20) Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time.

0% 10 20 30 40 50 60 70 80 90 100%

21) Some people sometimes find that when they are alone they talk out loud to themselves.

0% 10 20 30 40 50 60 70 80 90 100%

22) Some people find that in one situation they may act so differently compared with another situation that they feel almost as it they were two different people.

0% 10 20 30 40 50 60 70 80 90 100%

23) Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.).

0% 10 20 30 40 50 60 70 80 90 100%

24) Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it).

0% 10 20 30 40 50 60 70 80 90 100%

25) Some people find evidence that that they have done things that they do not remember doing.

0% 10 20 30 40 50 60 70 80 90 100%

26) Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing.

0% 10 20 30 40 50 60 70 80 90 100%

27) Some people sometimes find that they sometimes hear voices inside their head that tell them to do things or comment on things that they are doing.

0% 10 20 30 40 50 60 70 80 90 100%

28) Some people sometimes feel as if they are looking at the world through a fog so that people or objects appear far away or unclear.

0% 10 20 30 40 50 60 70 80 90 100%

Demographic information

Please circle or tick the most appropriate response

Date of Birth: _____

Sex: Female Male

Country of birth: Australia

Other
_____

Indigenous
Aboriginal
Torres Strait Islander
Both
Neither

Marital Status:

Single (never married/de facto)
Married
De facto
Separated
Divorced
Widowed

No of Children? _____
No of children living at home? _____

Education:

Age at leaving school
_____yrs

Highest education (please tick one)

Yr 10
Yr 11
Yr12
Technical Certificate (i.e. TAFE)
Undergraduate degree
Postgraduate degree

Employment status:

Not in paid work – receive pension

Not in paid work- financially supported by other means

Looking for work, or for more work

I am employed to my capacity

Appendix F

Trauma Events Checklist (T. E. C.) Adapted

Today's Date:_____

SAS number:_____

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = None or a Little 2 = Moderate to Extreme	How much support did you receive at the time (or shortly afterwards) 0 = None 1 = Some 2 = Good
1. Having to look after your parents and/or brothers and sisters when you were a child.	no yes	.....	1 2	0 1 2
2. Family problems (e.g. parent with alcohol or psychiatric problems, poverty).	no yes	.....	1 2	0 1 2
3. Loss of a family member (brother, sister, parent) when you were a CHILD.	no yes	.....	1 2	0 1 2
4. Loss of a family member (child or partner) when you were an ADULT.	no yes	.....	1 2	0 1 2
5. Serious bodily injury (e.g loss of a limb, mutilation, burns).	no yes	.....	1 2	0 1 2
6. Threat to life from illness, an operation, or an accident.	no yes	.....	1 2	0 1 2
7. Divorce of your parents.	no yes	.....	1 2	0 1 2
8. Your own divorce.	no yes	.....	1 2	0 1 2
9. Threat to life from another person (e.g. during a crime).	no yes	.....	1 2	0 1 2
10. Intense pain (e.g. from an injury or surgery).	no yes	.....	1 2	0 1 2

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = None or a Little 2 = Moderate to Extreme	How much support did you receive at the time (or shortly afterwards) 0 = None 1 = Some 2 = Good
11. War-time experiences (e.g. imprisonment, loss of relatives, deprivation, injury).	no yes	.....	1 2	0 1 2
12. Second generation war-victim (war-time experiences of parents or close relatives)	no yes	.....	1 2	0 1 2
13. Witnessing others undergo trauma.	no yes	.....	1 2	0 1 2

Physical abuse (e.g. being tortured, wounded or hit hard enough to see a doctor, leave bruises or be otherwise noticed)

14. by your immediate family and/or care-givers (parents, brothers or sisters).	no yes	.....	1 2	0 1 2
15. by others (including more distant family members).	no yes	.....	1 2	0 1 2

16. How many people did this to you? 1 more than 1; Actual number if known……..

17. Bizarre punishment If applicable, please describe: ……..……	no yes	.....	1 2	0 1 2

	Did this happen to you?		Age (range)	How much impact did this have on you? 1 = None or a Little 2 = Moderate to Extreme		How much support did you receive at the time (or shortly afterwards) 0 = None 1 = Some 2 = Good		
Emotional abuse (e.g., being belittled, teased, called names, threatened verbally, unjustly punished, felt hated)								
18. by your immediate family and/or care-givers (parents, brothers or sisters).	no	yes	.....	1	2	0	1	2
19. by others (including more distant family members).	no	yes	.....	1	2	0	1	2
20. How many people did this to you?	1	more than 1;	Actual number if known……..					
Emotional neglect (e.g. being left alone, insufficient affection, felt unloved, unimportant, ignored, unsupported, kept distant)								
21. by your immediate family and/or care-givers (parents, brothers or sisters).	no	yes	.....	1	2	0	1	2
22. by others (including more distant family members).	no	yes	.....	1	2	0	1	2
23. How many people contributed?	1	more than 1;	Actual number if known……..					

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = None or a Little 2 = Moderate to Extreme	How much support did you receive at the time (or shortly afterwards) 0 = None 1 = Some 2 = Good
Sexual harassment (acts of a sexual nature that DO NOT involve physical contact)				
24. by your immediate family and/or care-givers (parents, brothers or sisters).	no yes	.....	1 2	0 1 2
25. by others (including more distant family members).	no yes	.....	1 2	0 1 2
26. How many people did this to you?	1 more than 1;	Actual number if known……..		
Sexual abuse (unwanted sexual acts involving physical contact)				
27. by your immediate family and/or care-givers (parents, brothers or sisters).	no yes	.....	1 2	0 1 2
28. by others (including more distant family members).	no yes	.....	1 2	0 1 2
29. How many people did this to you?	1 more than 1;	Actual number if known……..		
30. Total number of occasions of sexual assault.	1 2 3 4 5 or more			

31. During acts of sexual abuse, did you experience any of the following?

Physical force?	no	yes
Threat of physical force to you or another person? (including threat to kill or harm another person)	no	yes
Coercion (i.e. arguments, pressure, social threats)?	no	yes
Use of authority and power (implied threat)	no	yes
Psychological conditioning over time (Grooming)?	no	yes
Deliberate use of alcohol or other substances by perpetrator/s?	no	yes

Appendix G

T. E. C.

People may experience a variety of traumatic experiences during their life. We would like to know three things: 1) if you have experienced any of the following 29 events, 2) how old you were when they happened, and 3) how much of an impact these experiences had upon you.

A) In the first column (i.e., Did this happen to you?), indicate whether you had each of the 29 experiences by circling YES or NO.

B) For each experience where you circled YES, list in the second column (i.e., Age) your age when it happened.
If it happened more than once, list ALL of the ages when this happened to you.
If it happened for years (e.g., age 7-12), list the age range (i.e., age 7-12).

C) In the final column (i.e., How much impact did this have on you?), indicate the IMPACT (by circling the appropriate number): 1, 2, 3, 4, or 5.

1 = none
2 = a little bit
3 = a moderate amount
4 = quite a bit
5 = an extreme amount

Example:

	Did this happen to you?	Age (range)	How much impact did this have on you?
You were teased	no yes	.....	1 2 3 4 5

Thank you for your cooperation.

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = none 2 = a little bit 3 = a moderate amount 4 = quite a bit 5 = an extreme amount
1. Having to look after your parents and/or brothers and sisters when you were a child.	no yes	.....	1 2 3 4 5
2. Family problems (e.g., parent with alcohol or psychiatric problems, poverty).	no yes	.....	1 2 3 4 5
3. Loss of a family member (brother, sister, parent) when you were a CHILD.	no yes	.....	1 2 3 4 5
4. Loss of a family member (child or partner) when you were an ADULT.	no yes	.....	1 2 3 4 5
5. Serious bodily injury (e.g., loss of a limb, mutilation, burns).	no yes	.....	1 2 3 4 5
6. Threat to life from illness, an operation, or an accident.	no yes	.....	1 2 3 4 5
7. Divorce of your parents	no yes	.....	1 2 3 4 5
8. Your own divorce	no yes	.....	1 2 3 4 5
9. Threat to life from another person (e.g., during a crime).	no yes	.....	1 2 3 4 5
10. Intense pain (e.g., from an injury or surgery).	no yes	.....	1 2 3 4 5

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = none 2 = a little bit 3 = a moderate amount 4 = quite a bit 5 = an extreme amount
11. War-time experiences (e.g., imprisonment, loss of relatives, deprivation, injury).	no yes	.....	1 2 3 4 5
12. Second generation war-victim (war-time experiences of parents or close relatives)	no yes	.....	1 2 3 4 5
13. Witnessing others undergo trauma.	no yes	.....	1 2 3 4 5
14. Emotional neglect (e.g., being left alone, insufficient affection) by your parents, brothers or sisters.	no yes	.....	1 2 3 4 5
15. Emotional neglect by more distant members of your family (e.g., uncles, aunts, nephews, nieces, grandparents).	no yes	.....	1 2 3 4 5
16. Emotional neglect by non-family members (e.g., neighbors, friends, step-parents, teachers).	no yes	.....	1 2 3 4 5
17. Emotional abuse (e.g., being belittled, teased, called names, threatened verbally, or unjustly punished) by your parents, brothers or sisters.	no yes	.....	1 2 3 4 5

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = none 2 = a little bit 3 = a moderate amount 4 = quite a bit 5 = an extreme amount
18. Emotional abuse by more distant members of your family.	no yes	.....	1 2 3 4 5
19. Emotional abuse by non-family members.	no yes	.....	1 2 3 4 5
20. Physical abuse (e.g., being hit, tortured, or wounded) by your parents, brothers, or sisters.	no yes	.....	1 2 3 4 5
21. Physical abuse by more distant members of your family.	no yes	.....	1 2 3 4 5
22. Physical abuse by non-family members.	no yes	.....	1 2 3 4 5
23. Bizarre punishment If applicable, please describe: …… …… ……	no yes	.....	1 2 3 4 5
24. Sexual harassment (acts of a sexual nature that DO NOT involve physical contact) by your parents, brothers, or sisters.	no yes	.....	1 2 3 4 5
25. Sexual harassment by more distant members			

of your family.	no yes	.....	1 2 3 4 5

	Did this happen to you?	Age (range)	How much impact did this have on you? 1 = none 2 = a little bit 3 = a moderate amount 4 = quite a bit 5 = an extreme amount
26. Sexual harassment by non-family members.	no yes	.....	1 2 3 4 5
27. Sexual abuse (unwanted sexual acts involving physical contact) by your parents, brothers, or sisters.	no yes	.....	1 2 3 4 5
28. Sexual abuse by more distant members of your family.	no yes	.....	1 2 3 4 5
29. Sexual abuse by non-family members.	no yes	.....	1 2 3 4 5

q27-29. Total number of occasions of sexual abuse (please circle) 1 2 3 4 5 or more

30. If you were mistreated or abused, how many people did this to you?

A) Emotional maltreatment (if you answered YES to any of the questions 14-19).

Numbers of persons: .....

B) Physical maltreatment (if you answered YES to any of the questions 20-23).

Number of persons: .....

C) Sexual harassment (if you answered YES to any of the questions 24-26).

Number of persons: .....

D) Sexual abuse (if you answered YES to any of the questions 27-29).

Number of persons: .....

31. Please describe your relationship with each person mentioned in your answer to question 30 (e.g., father, brother, friend, teacher, stranger, etc.), and add if the person(s) was (were) at least 4 years older than you at the time when the experience(s) occurred. For example, write "friend (-)" if this friend was less than 4 years older than you. Write "uncle (+)" if this uncle was more than 4 years older than you.

A) Emotional neglect .....
.....

B) Emotional abuse .....
.....

C) Physical abuse .....
.....

D) Sexual harassment .....
.....

E) Sexual abuse .....
.....

32. Please describe any OTHER traumatic events that had an impact on you.
.....
.....
.....
...

33. If you have answered YES to any of the questions 1-29, how much support did you receive afterwards?
(give the number of the question and the level of support)

Question number	Level of support (0 = none, 1 = Some, 2 = Good)
.....	.....
.....	.....
.....	.....
.....	.....

Appendix H

Scoring form Traumatic Experiences Checklist (TEC)

I. TEC total score: summated item scores

0 = absent
1 = present

item	
1	**0 - 1**
2	**0 – 1**
3	**0 – 1**
4	**0 – 1**
5	**0 – 1**
6	**0 – 1**
7	**0 – 1**
8	**0 – 1**
9	**0 – 1**

item	
10	**0 - 1**
11	**0 - 1**
12	**0 - 1**
13	**0 - 1**
14	**0 - 1**
15	**0 - 1**
16	**0 - 1**
17	**0 - 1**
18	**0 - 1**

item	
19	**0 - 1**
20	**0 - 1**
21	**0 - 1**
22	**0 - 1**
23	**0 - 1**
24	**0 - 1**
25	**0 - 1**
26	**0 - 1**
27	**0 - 1**
28	**0 - 1**
29	**0 - 1**

TEC total score presence reported potentially traumatizing experiences:
Σ item (1-29) = (range 0-29)

II. TEC developmental level composite score per trauma area and trauma area composite scores

EMOTIONAL NEGLECT

Item 14, 15, 16	**presence** **0 (absent)** **1 (present)**	**duration** **0 (< 1 year)** **1 (> 1 year)**	**relationship to perpetrator(s)** **0=non-family, or family if not:** **1= parents, brothers, sisters**	**subjective response** **0 (1 or 2)** **1 (3, 4, or 5)**	**developmental level composite score**
0 - 6 years					**(0-4)**
7 - 12 years					**(0-4)**
13 – 18 years					**(0-4)**
				composite score emotional neglect →	**(0-12)**

EMOTIONAL ABUSE

Item 17, 18, 19	**presence** **0 (absent)** **1 (present)**	**duration** **0 (< 1 year)** **1 (> 1 year)**	**relationship to perpetrator(s)** **0=non-family, or family if not:** **1= parents, brothers, sisters**	**subjective response** **0 (1 or 2)** **1 (3, 4, or 5)**	**developmental level composite score**
0 - 6 years					**(0-4)**
7 - 12 years					**(0-4)**
13 – 18 years					**(0-4)**
				composite score emotional abuse →	**(0-12)**

THREAT FROM A PERSON TO THE INTEGRITY OF THE BODY (1):
PHYSICAL ABUSE

Item 20, 21, 22	**presence** **0 (absent)** **1 (present)**	**duration** **0 (< 1 year)** **1 (> 1 year)**	**relationship to perpetrator(s)** **0=non-family, or family if not:** **1= parents, brothers, sisters**	**subjective response** **0 (1 or 2)** **1 (3, 4, or 5)**	**developmental level composite score**
0 - 6 years					**(0-4)**
7 - 12 years					**(0-4)**
13 – 18 years					**(0-4)**
				composite score bodily threat 1 →	**(0-12)**

THREAT FROM A PERSON TO THE INTEGRITY OF THE BODY (2):
THREAT TO LIFE, PAIN, BIZARRE PUNISHMENT

Item 9, 10, 23	**presence** **0 (absent)** **1 (present)**	**duration** **0 (< 1 year)** **1 (> 1 year)**	**subjective response** **0 (1 or 2)** **1 (3, 4, or 5)**	**developmental level composite score**
0 - 6 years				**(0-3)**
7 - 12 years				**(0-3)**
13 – 18 years				**(0-3)**
			composite score bodily threat 2 →	**(0-9)**

BODILY THREAT TOTAL SCORE:
SUMMATED COMPOSITES BODILY THREAT 1&2: (0-21)

SEXUAL HARASSMENT

Item 24, 25, 26	**presence** **0 (absent)** **1 (present)**	**duration** **0 (< 1 year)** **1 (> 1 year)**	**relationship to perpetrator(s)** **0=non-family, or family if not:** **1= parents, brothers, sisters**	**subjective response** **0 (1 or 2)** **1 (3, 4, or 5)**	**developmental level composite score**
0 - 6 years					**(0-4)**
7 - 12 years					**(0-4)**
13 – 18 years					**(0-4)**
				composite score sexual harassment →	**(0-12)**

SEXUAL ABUSE

Item 27, 28, 29	**presence** **0 (absent)** **1 (present)**	**duration** **0 (< 1 year)** **1 (> 1 year)**	**relationship to perpetrator(s)** **0=non-family, or family if not:** **1= parents, brothers, sisters**	**subjective response** **0 (1 or 2)** **1 (3, 4, or 5)**	**developmental level composite score**
0 - 6 years					**(0-4)**
7 - 12 years					**(0-4)**
13 – 18 years					**(0-4)**
				composite score sexual abuse →	**(0-12)**

III. Developmental level total composite scores and total trauma composite score

developmental level	emotional neglect developmental composite score	emotional abuse developmental composite score	bodily threat developmental composite score	sexual harassment developmental composite score	sexual abuse developmental composite score	developmental level total trauma composite score
0 - 6 year	(0-4)	(0-4)	(0-7)	(0-4)	(0-4)	(0-23)
7 - 12 year	(0-4)	(0-4)	(0-7)	(0-4)	(0-4)	(0-23)
13 - 18 year	(0-4)	(0-4)	(0-7)	(0-4)	(0-4)	(0-23)
					total trauma composite score	(0-69)