McGILL UNIVERSITY

CSA, REVICTIMIZATION, AND DISSOCIATION: A META-ANALYSIS INVESTIGATION

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ABSTRACT

Over the past decade, research attempts have been made to clarify the relationship between female child sexual abuse (CSA) and dissociation and furthermore, its impact on sexual revictimization. However, these research efforts have yielded mixed findings, which have left the role of dissociation to still remain unclear. Indeed, there has been an upsurge of research literature questioning the role of dissociation within revictimization frameworks, and moreover, whether dissociation should be further researched or dropped from further analysis.

Accordingly, the objective was set out to better understand the link between dissociation, CSA and revictimization. As a result, this study was aimed at informing potential revisions to the role of dissociation, by utilizing a meta-analysis technique and comparing dissociation scores of both revictimized and non- revictimized women subsequent to CSA.

Following Lipsey & Wilson's (2001) guidelines, a comprehensive literature search identified 8 eligible studies, both from published and unpublished sources, appearing in the literature from 1987 to 2007. Fixed effects analyses, incorporating a hedges g unbiased method indicated associations between dissociation, CSA and revictimization, by establishing a moderate effect size (d=0.38).

These meta-analytic findings suggest that among CSA survivors, dissociation is associated with sexual revictimization in women. Furthermore, this thesis supports that dissociation should be reconsidered as a possible mediator, along with other

psychological and systemic factors, which contribute to the sexual revictimization process in women subsequent to CSA.

RESUMÉ

Au cours de cette dernière décennie, des recherches ont tenté de clarifier le rapport entre l'agression sexuelle (AS) vécue par les filles durant leur enfance et les symptômes de dissociation, ainsi que son impact sur la revictimisation sexuelle. Cependant, ces efforts ont donné des résultats mitigés, ce qui explique jusqu'à date le rôle ambigu de la dissociation. Conséquemment, il y a eu une forte augmentation des recherches mettant en question le rôle de la dissociation dans le cadre de la revictimisation, et de plus, si la dissociation devrait être recherchée davantage ou exclue des analyses subséquentes.

Dans cette lignée, l'objectif de la présente recherche était d'avoir une meilleure compréhension du lien entre la dissociation, l'AS durant l'enfance et la revictimisation. Cette étude visait à faire part de toutes révisions éventuelles du rôle de la dissociation, en utilisant une technique de méta-analyse et en comparant les scores de dissociation chez les femmes ayant subi une AS durant leur enfance et qui ont vécu une AS à nouveau à l'âge adulte de celles qui ne l'ont pas revécue.

Suivant les directives de Lipsey et Wilson (2001), une recension systématique des écrits a identifié 8 études éligibles provenant de sources publiées et non-publiées, figurant dans la période des années 1987 à 2007. Des analyses d'effets fixes, incorporant le g de Hedges, une méthode non biaisée, ont démontré, par le résultat d'une ampleur d'effet modérée (d=0.38), que la dissociation, l'AS durant l'enfance et la revictimisation sont liées.

Ces résultats de méta-analyse suggèrent que, parmi les survivants d'AS durant l'enfance, la dissociation est associée à la revictimisation sexuelle chez les femmes. En outre, cette thèse soutient la position que la dissociation devrait être reconsidérée comme médiateur possible au même titre que d'autres facteurs psychologiques et systémiques, dans la compréhension du processus de revictimisation sexuelle chez les femmes suite à une AS durant l'enfance.

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INTRODUCTION

Unceasing high rates of female child sexual abuse (CSA) and subsequent sexual revictimization issues have been recognized as a persistent problem in society (Messman-Moore & Long, 2003). In fact, recent empirical reviews concluded that CSA survivors in community settings are 2-3 times more a risk for sexual revictimization than non-sexually abused women (Classen, Palesh, Aggarwal, 2005). In addition, clinical studies suggested revictimization rates exists as high as 72% (Messman & Long, 1996). Sadly, the consequences of sexual revictimization has been linked with impacting survivors on many levels of well being, including issues of negative psychological sequelae, such as dissociation, Post-traumatic Stress Syndrome (PTSD) and depression. Also, a host of interpersonal difficulties are associated with sexual revictimization, which are documented as devastating and long lasting in their effects across the victim-survivor's lifespan (Messman-Moore & Long, 2003).

Many researchers have made headway in producing knowledge towards understanding the revictimization process, yet research gaps still exist which could benefit from further exploration. For example, although a great deal of documentation has been produced substantiating the existence of the revictimization phenomena, what continues to elude scholars is how to prevent it from occurring once CSA has been detected (Macy, 2007). Also, several advanced theories have been both proposed and widely accepted for explaining the existence of revictimization; however, they have also been subjected to criticism for their lack of empirical support and also, their inability to inform intervention processes.

Consequently, a recent upsurge of research efforts examining the revictimization phenomenon has occurred, with new research trends agreeing that the phenomenon is beleaguered with complexities, that usually incorporate a combination psychological diagnoses, that are widely influenced by social, environmental and contextual issues (Macy, 2007). Thus, efforts in filling in the gaps concerning potential mediators – the inclusion of a third explanatory variable – of revictimization are necessary, so that a holistic view of preventative treatment strategies can be both utilized and better brought up to date (Macy, 2007).

Pertaining to this thesis, dissociation – a response to trauma, which allows the psyche to distance itself from experiences that are too much for the person to process at that time – has been brought up as one potential mediator that increases the risk of sexual revictimization in adulthood. More detailed definitions of dissociation are presented in the literature review section: CSA and dissociation. Recent literature has concluded that dissociation does not 'appear' to put women at risk for revictimization (Kessler and Bieschke, 1999; Sandberg, Matorin & Lynn, 1999). Thus, it was proposed that intervention efforts addressing dissociation issues should not be considered pivotal as a means to reduce revictimization (Macy, 2007). Yet, personal investigation of research findings examined dissociation as a mediator to sexual revictimization has produced supportive, non-supportive or inconclusive results. For instance, Cloitre, Scarvalone & Difede (1997) assessed the diagnostic status of women with both a history of CSA and adult sexual abuse using a series of standard questionnaires such as the Dissociative Experience Scale, The Child Maltreatment Interview and The Sexual Assault History Interview Schedule. Results from their study indicated a positive

relationship between revictimization and dissociation, with 46% of the revictimized women obtaining DES scores above the cutoff of 20, in comparison to 13% of the adult assault only group and 14% of the non assault group. Also, within her dissertation, Whetsell (1990) investigated the harmful effects of CSA and revictimization in adult females, using a total sample of 99 participants, who were identified by therapist and at the time of the study, undergoing individual or group psychotherapy. Also using a method of standardized questionnaires, their results supported that revictimization has a significant positive correlation with dissociative disorders. Furthermore, Field, Classen, Butler, Koopman, Zarcone & Spiegel (2001) measured dissociation in relation to revictimization, using the Mean Stoop Test and the Trauma Symptom Checklist-40 with a sample size (n=51). Using independent t-test comparison statistics for revictimized (n=16) and non revictimized groups (n=35), their results concluded dissociation being more highly represented in sexually revictimized groups. However, one limitation to the both of the subsequent studies was the omission of a control group, although their methodological process was thorough and rigorous. Finally, Gold, Milan, Mayall, & Johnson (1994), used a control group, and investigated variables associated with CSA and adult sexual assault (ASA) in accordance with the Trauma Symptom Checklist - 40, (TSC-40) using a sample size (n=637). The mean dissociation subscale scores taken from the (TSC-40) indicated women who have experienced sexually revictimized both in childhood and in adulthood will experience more dissociation than ASA, CSA, or no abuse groups respectively. In contrast, others, such as, Messman-Moore & Long (2003) reviewed the conflicting literature results on dissociation within their review and concluded that, “the role of dissociation in relation to revictimization is unclear given

that a clinical sample found dissociation to be important, while college studies did not." (p.546).

Meta-analysis Perspective

Incorporating a meta-analytic perspective, Roodman & Clum (2001) evaluated 19 empirical studies in order to better understand the revictimization rates CSA survivors. From their results they found a moderate effect size of 0.59, which suggests a definite linkage between childhood and adulthood victimization. Also using a meta-analytic approach, Paolucci, Genuis et Violato (2001) reviewed 37 published articles and concluded a substantial link between CSA and various psychological impacts, which included PTSD outcome (d = 0.40), depression (d = 0.44), suicide (d = 0.44), sexual promiscuity (d= 0.29), sexual perpetration (d = 0.16), and academic achievement (d = 0.19). Although both of these studies brought clarity to the revictimization process and its potential psychological associated sequelae, neither study examined dissociation and its role within the revictimization process. The rational explaining why dissociation was left out of both preceding studies is unclear and not mentioned. The inclusion of dissociation within these meta-analytic studies would have been beneficial, since as seen above, conflicting results exist, which could benefit from a meta-analytic interpretation.

Based on these conflicting results, it is the position of the present thesis to believe in the importance of studying the impact of dissociation and its link with CSA and adult revictimization. This thesis will attempt to answer this existing research gap

by investigating the existing vagueness around the role of dissociation and its link to sexual revictimization subsequent to CSA.

Research Question and Associated Hypothesis

Similar to the meta-analysis techniques used by Roodman & Clum. (2001) and Paolucci et al. (2001), this thesis will attempt to either confirm or reject the null hypothesis stated below.

Alternative Hypothesis

1) *The difference in dissociation scores between revictimized and non-revictimized samples will be statically significant and hence confirm a link between dissociation, CSA and revictimization.*

Null Hypothesis

2) *The difference in dissociation scores between revictimized and non-revictimized samples will be will be statically insignificant and hence fail to support a link between dissociation, CSA and revictimization.*

By rejecting or confirming the null hypothesis, it is the hope of this thesis effort to add further clarity on aspects surrounding the revictimization phenomenon, so that both research efforts and intervention practices can add to their success in tackling this pervasive and persistent problem.

LITERATURE REVIEW

Child Sexual Abuse

Appallingly, when analyzing research gathered from general population samples, clinical samples and national samples, CSA is demonstrated to be not a rare phenomenon. In fact, higher CSA prevalence rates, such as, 15% to 33%, have been found in the general population and as much as 35% to 75% in female clinical samples (Polusny & Follette, 1995; Rind, Tromovitch, & Bauserman, 1998). Also, telephone survey methods conducted in the region of Quebec with 822 adults indicated that 14% experienced sexual violence in their youth and that women were more likely to report being victims of sexual violence rather than other forms of violence (Tourigny, Gagné, Joly & Chartrand, 2006). Moreover, taking a global perspective, a recent nationally representative sample indicated that 12 to 53% of girls would experience CSA (Doll, Koenig & Pucell, 2004).

Many researchers assert that CSA survivors are at a greater degree of proneness to mental health issues, which include symptoms such as, post-traumatic stress disorder, suicide, depression, anxiety, low self-esteem, somatization, dissociation, obsessive compulsive disorders, phobias, paranoid ideation, substance abuse, eating disorders, and personality disorder (for a review see Putnam, 2003). In addition, CSA has been linked to chronic low self-esteem (Gwandure, 2007; Tebbutt, Swanston, Oates, O'Toole, 1997) feelings of helplessness (Swanston, Nunn, Oates, Tebbut, O'Toole, 1999), and a series of disruptive interpersonal relationships (Sanders, 1995; Zanarini, Yong Frankenburg, Hennen, Reich, Marino, Vujanovic, 2002). While this position is usually supported in the literature, as already mentioned, others argue the effects on mental health subsequent

to CSA is greatly overestimated (Brongersma, 1984, 1991; Chiswick, 1983; Sandfort, Brongersma, & Van Naerssen, 1990) within published literature. While these two opposing opinions exist, there is also an overarching position that believes mental health outcomes vary from person to person and therefore there is no room to assert a predictive link one way or another with absolute certainty (Beitchman, Zucker, Hood, DaCosta &Akman, 1991; Bulik, Prescott, & Kendler, 2001). Nonetheless, various models and theoretical frameworks have been both developed and published over the years, attempting to provide understanding of the long-term consequences of CSA. Some of these models include: the post-traumatic stress model (Briere & Runtz, 1987; Roth & Newman, 1991); traumagenic dynamics -four-trauma-causing factors (Finkelhor & Browne, 1985); learned theory (Messman & Long, 1996); the Accommodation Syndrome (Summit, 2004); the developmental coping model (Cole & Putnam, 1992; Mullen, Martin, Anderson, Romans & Herbison, 1994); the attachment disruption model (Alexander, 1992); the psychobiologic information processing Model (Hartmann & Burgess, 1993) and the transactional Model (Spaccerelli, 1994).

CSA and Dissociation

Research efforts have already established that links between CSA and dissociation do exist (Chu & Dill, 1990; Hall & Powell, 2000; Hartt & Waller, 2002; Rodriguez-Srednicki, 2001; Spiegel, 1984). For example, Collin-Vézina and Hébert (2005) investigated CSA experiences and the associated differences between posttraumatic stress disorder (PTSD) and dissociation in a sample of school age girls. They concluded that sexually abused children were twice more at risk for dissociation than for PTSD symptoms. Furthermore, their finding also suggested that all abuse experiences may have the potential to increase the risk of developing dissociative tendencies, regardless of the level of severity.

In addition, research trends have been successful at pinpointing relationships between dissociation and trauma either through retrospective research (Boon & Draijer, 1993; Chu & Dill, 1990), prospective research (Ogawa, Sroufe, Weinfield, Carson, & Egeland, 1997) or through clinical observation (Wilbur, 1985). On a neurobiological viewpoint, separate studies were conducted with the U.S military population, the Norwegian army and U.S Navy selection programs for aviators to explore biological reactions that manifest from dissociation when exposed to various stressors. Their studies illustrated the dissociation levels measured at baseline greatly affected the levels of dissociation experienced during stress exposure (Morgan, Southwick, Hazlett, Rasmusson, Hoyt, Zimolo, & Charney, 2004; Eid & Morgen, 2006).

The Diagnostic and Statistical Manual of Mental Disorders (DSM–IV–TR, 2000) defined dissociation as, "a disruption in the usually integrated function of consciousness, memory, identity, or perception of the environment" (p.519). However, early understandings of dissociation were coined by Janet (1920), who described the concept as a breakdown of identity, memory and consciousness after being exposed to both traumatic and stressful events. Since then, some trauma theorists have believed dissociation operates as a defense mechanism in order to preserve ego integration in response to earlier traumatic experiences; however, this same defense mechanism used later in adulthood as a coping mechanism could become dysfunctional (Banyard, Williams, & Siegel, 2001). MacWilliams (1994), agreed with the biological pathway proposed above, but disagreed in assuming it as always pathological and took his argument further in proposing it could be also seen as, "adaptive ways of experiencing the world" (p.96). Recent literature refers to dissociation as the compartmentalization of experiences after a traumatic event (Kluft, 1993; Putnam, 1989) or the ability to separate feelings and thoughts, which are usually integrated and accessible within conscious awareness.

Along the way, a variety of theoretical models have been created, attempting to describe the effects of CSA and its relationship to traumatic dissociation. For example, "The information processing model" (Hartmann & Burgess, 1993, p.444), developed from a research project (Burgess, Hartman, & McCormack, 1987), describes four distinct stages (known as the pretrauma phase, trauma encapsulation phase, output and trauma reply), which are all encompassed in the trauma cycle phase. In addition, the model integrates six phases within the evaluation/intervention phase, specifically titled

as, “Anchoring for Safety, Establishing stress-reducing Resources, bringing the trauma to surface, processing the trauma, transferring of the processed or integrated trauma to past memory, the last principle” (p. 448-449). Within the trauma encapsulation phase, there is added clarity as to how the use of dissociation after CSA exposure can be used by the child to remain functional after experiencing a traumatic overwhelming experience. Specifically, the trauma encapsulation phase describes a mechanism the child uses to endure the abuse, which results in the experience of traumatic dissociation. It is defined as, “a general process in which the mind fragments psychic integrity in the service of survival by disengaging from the ongoing trauma” (p.445). However, could the child’s attempt to remain functional through the use of dissociation lead to vulnerabilities of sexual revictimization?

A threaded view of CSA, dissociation and sexual revictimization will be explored in the following section.

CSA, Dissociation and Sexual Revictimization

Many studies have provided various definitions for revictimization (as reviewed in Goodman, Koss & Russo, 1993; Polusny & Follette, 1995), which make the scope of revictimization large and not easily definable. Still, Messman-Moore and Long's (1996, 2003) definition, "Sexual revictimization occurs when a survivor of sexual abuse or rape during childhood is victimized again (i.e., revictimized) during adulthood" (p. 538) encapsulates the viewpoint of this thesis. For the purpose of this thesis, sexual revictimization encompasses a minimum one CSA experience and on adult sexual assault (ASA).

Researchers have made efforts in establishing prevalence rates for women in the areas of CSA, ASA and revictimization. For example, studies have shown revictimization is more likely to occur anywhere between 2-11 times in CSA survivors when compared to non-victims (Wayatt, Gurthrie, & Notgrass, 1992; Gold, Sinclair, & Balge, 1999; Macy, 2007). Looking at ASA, one national US research poll shows that 18% of all women will experience completed or attempted rape by a partner, including spouses, intimates, boyfriends, and ex-partners, and a more recent study states that one in six women will experience sexual violence at some point in their lives (Tjaden & Thoennes, 2006).

There is an increased interest in the revictimization phenomenon (Widom, Czaja, & Dutton, 2008) and also an emergence of literature that confirms that women who were once sexually victimized in childhood are subsequently at increased risk for further sexual victimization in adulthood (Arata, 2002; Breitenbecher, 2001; Classen, Palesh, &

Aggarwal, 2005; Messman-More & Long, 2000; Roodman & Clum, 2001). Furthermore, existing research demonstrates that repeated victimization can exacerbate victim symptomlogy resulting from previous abuse trauma (Cohen & Roth, 1987; Gold et al., 1994; Koverola, Proulx, Battle, & Hanna, 1996; Wind & Silvern, 1992). On the other hand, at least two studies reported that victims of CSA were not at increased risk of revictimization as adults (Briere & Runtz, 1987; Mandoki & Burkhart, 1989). Still, recent research found that at least 30% of women who experienced childhood abuse reported revictimization as adolescents, adults, or both, and moreover, sexual abuse victims had a two to three times greater risk of adult revictimization than women without a history of CSA (Arata, 2002).

In addition, both Messman-Moore and Brown (2004) and Van Bruggen, Runtz, Kadlec (2006) found that women with a history of CSA were twice as likely to have experienced adult victimization than those without a CSA history. Furthermore, a recent US nationwide investigation showed a strong relationship between different experiences of sexual violence across the lifespan (Desai, Arias, Thompson, & Basile, 2002) and a recent investigation of revictimization among college women found that women who experienced sexual or physical assault during adolescence were nearly 3 times more likely to experience sexual revictimization during their college years than women without a history of victimization (Smith, White, & Holland, 2003).

Finally, research shows that sexually abused children and adolescents are 10 times more likely to experience revictimization either later in childhood or in adolescence than those without this history and, moreover, preliminary findings suggest

that women of color may have an increased risk of revictimization (Classen et al., 2005; Urquiza & Goodlin-Jones, 1994).

Various theories have been postulated to better understand the link between CSA and revictimization, such as a multi-risk model of revictimization (Marker, Kemmelmeir, & Peterson (2001) and the coping theory framework (Macy, 2007). Pertaining to this thesis, some theorists have implied dissociation as being one factor which links CSA and revictimization (Gold et al.,1999; Grauerholtz, 2000; Messman & long, 1996). Four models which add weight to linking CSA, dissociation and revictimization will be explored in the next section. Specifically, two models: The emotional avoidance model (Polunsny & Follette, 1995); proposed model of sexual revictimization (Gold et al., 1999), that will be explored focuses on victim vulnerability, and the following two models: Ecological Framework for Understanding Revictimization, (Grauerholz, 2000); Internal Role System Theory of Abuse, (Thomas, 2003) add either a systemic approach to understand the sequelae of revictimization, or focus on the consequences of systemic reinforcement of revictimization during treatment process.

The Emotional Avoidance Model

The model put forward by Polunsny and Follette (1995), suggests CSA survivors may develop emotional avoidance behaviors, which include dissociative symptomology, as a means to handle the negative emotional stimuli associated with the ongoing abuse. Although in the short-term, this coping method may prove fruitful, in the long-term, Polunsny & Follette (1995) warn of adverse consequences, such as feelings of social

isolation, suicidal and self-harming behaviors. Referring to revictimization, Polunsny & Follette suggest that experiencing sexual assault is a psychosocial stressor and assert, "Engaging in emotionally avoidant coping strategies also leads to behaviors that may result in more proximal stressors… [and] vulnerability to revictimization may be in part the result of engaging in chronic dissociative coping behaviors" (p.160). Thus, the latency of responding to danger cues (Heman, 1992; Walker, Keaton, Hanson, Harrop Griffiths, Holm, Jones, Hickok, & Jemelka, 1992) or the increased possibility of CSA victims engaging in high risk behaviors and surrounding themselves in situations that involve lifestyle risks (Simons & Whitbeck, 1991), are the factors posited which lead to psychological vulnerability and thus, an increased chance of adult sexual revictimization.

Proposed Model of Sexual Revictimization

Gold et al. (1999) integrated a number of related factors that are hypothesized to predict sexual revictimization. Specifically, CSA would negatively impact the survivor's attachment style, psychological impact, attribution and coping mechanism, which bring on pathways, that would affect hyperfemininity, number of sex partners and delinquency/drug use, which would subsequently increase vulnerability for sexual revictimization. In this model, dissociation was implicated within both the psychological impact phase (Briere, 1988; Briere & Runtz, 1987; Briere & Runtz, 1988; Russell, 1984) and the coping mechanism phase (Gold et al., 1994), which are two phases of the six phases proposed in Gold et al.'s (1999) model.

Ecological Framework for Understanding Revictimization

Grauerholz (2000) incorporates Heise (1998) recommendations that the violence of women needs to be studied within context and builds from the past work provided by Bronfenbrenner (1977, 1979) a four level model, which integrates hypothesized factors related to revictimization. Thus, the ontogenic development – the initial victimization experiences –and the microsystem –factors that increase risk – incorporates dissociative disorders. Grauerholz (2000) contends that the ontogenic and microsystems sits within a multilevel system and needs to integrate the exosystem- lack of resources and alternatives as well as the macrosystem – cultural tendencies. Thus, a holistic view of these factors needs to be given consideration to be able to assess revictimization. Messman & Long (2003) give credit to this model as being able to not only understand the relationship between CSA and revictimization, but also incorporate perpetrator perceptions or cultural forces that may indeed reinforce CSA revictimization.

Internal Role System Theory of Abuse

Thomas (2003) illustrates a link between CSA and dissociation and furthermore, explains how ineffective therapy can produce the harmful effects of revictimization. Thomas (2003) proposed a model, known as, "An Internal Role System Theory of Abuse" (p.370), which proposed the traumatic cycle CSA survivors can face if the aftermath of CSA's devastation is left untreated. For example, Thomas (2003) explained that a consequence of CSA would result in higher risk of psychosocial problems and dissociation, which include consequences that could lead to possible sexual revictimization. Thomas (2003) stated, "abuse survivors are likely to dissociate

when their internal models are activated….[and] dissociation in dangerous situations can lead to further victimization and thereby confirm maladaptive models through a positive feedback loop" (p.371). Furthermore, Thomas (2003) recommends caution when therapists treat the dissociation aspect of the abuse, since the survivor is vulnerable when they activate their internal models. Thus, if not properly supported during treatment by the therapist, the survivor could be retraumatized and have their internal working models confirmed.

Research Trends

The devastating impacts of repeated sexual victimization have been linked to increased difficulty with problematic emotions and mental illness, including depression and anxiety (Arata, 2002; Breitenbecher, 2001; Classen et al., 2005). Also, dissociation has been investigated by different researchers as having links to revictimization (Whiffen & MacIntosh, 2005).

According to Arata (2002), the most consistent finding has been that sexual revictimization subsequent to CSA is associated with higher rates of dissociation. Yet, conflicting evidence exists which reveal a different role of the dissociation variable (Gold et al., 1994; Sandberg et al., 1999); Kessler & Bieschke, 1999; Horowitz, 1998; Frenkel, 2002; Irwin, 1999). Researcher's trends have both questioned and attempted to answer whether dissociation influences a CSA survivor's ability to perceive risk or contributes to delayed latency responses which may in turn contribute to revictimization (Chu & Dill, 1990; Polusny & Follette, 1995). However, a review of results have yielded mixed findings (Atkeson, Calhoun & Morris, 1989; Breitenbecher, 1999;

Wilson, Calhoun, and Bernat, 1999; Meadows, Jaycox, Stafford, Hambree, & Foa, 1997).

Gaps in the Field

Question marks still remain upon what role dissociation plays within the context of sexual revictimization. As already mentioned, to date there have been no research amalgamating the existing literature on dissociation, and, research has proved to be contradictory in nature and thus, not informative for intervention and treatment practices. As recent research has supported, sexual revictimization subsequent to CSA resides within our societies, thus there is a dire need to expand our already existing knowledge on treatment and intervention plans.

Meta-analytically, scholars have been able to pinpoint that: 1) a relationships exists between CSA and revictimization; 2) CSA is linked to various mental health effects, including dissociation. However, the examination of dissociation within a meta-analytic revictimization context seems to have eluded scholars. Thus, the undertaking a meta-analytic perspective on the role of dissociation and its links to CSA and revictimization is pivotal in terms of recommendation of future treatment and intervention plans.

The next section outlines the method section, which gives an introduction to the meta-analysis technique and the steps used to gather data, which was analyzed and presented in the succeeding results section.

METHODOLOGY

Why Choose a Meta-Analysis?

Butler (2002) summarizes key ethical considerations that social workers must abide by when conducting research with vulnerable populations. One, which is of interest, is, "working towards beneficence and non-maleficence (doing good and not doing harm)" (p. 243) so that risk towards clients may be reduced. Thus, a meta-analysis approach respects the above ethical issue, since it allows for the exploration of sensitive research questions, without causing additional burden to participants via collecting first hand data through interviews and focus groups. Since this thesis examines issues of sexual trauma and abuse, it is essential to avoid women reliving atrocious events, especially if the data already exists from past research projects.

Accordingly, when adopting a meta-analysis technique, a variety of questions can be investigated, as long as a reasonable body of primary studies and useable data exist. Therefore, when a specific question has been quantitatively researched by different scholars and their findings conflict, the answer to the question remains evasive and unfortunately unanswered. In these situations a meta-analysis is called for, since the pervious data can be collected from the existing studies and further analyzed all together to give an overall answer to the once evasive question.

Additionally, a meta-analysis approach works around complexities of different studies that use diverse measuring scales for research purposes. Since the meta-analytic technique looks specifically at the effect size (discussed in more detail in the next section) to answer to the research question(s), data from various studies can convert into

matching units, so that the once disconnected data can be fully integrated and analyzed in an holistic manner. For example, within this thesis, symptoms of dissociation are measured by both the Dissociative Experience scale (DES) and the Trauma Symptom Chacklist-40 (TSC-40). Yet, the information can still be amalgamated into usable numbers for data analytic purposes and lead to further exploration of the research question (s).

Finally, social worker Shaw (2003), a noteworthy quantitatively based researcher, has communicated that fewer quantitative social work related dissertations have been put forth in North America in comparisons to other related fields and, furthermore, referred to the social work field as being weak within the quantitative domain. He goes on to recommend universities initiate workshops that undertake topics, such as meta-analysis, to strengthen the quantitative underpinnings of future social work graduates. Therefore, there is a pull for graduate social worker students to expand both the quantitative and meta-analytic genre.

What is a Meta-Analysis?

Simply put, a meta-analysis (for the purpose of this thesis) is a collection of data on a topic from a variety of sources (published and non-published), which are retrieved, coded and then further analyzed to answer research question. Lipsey and Wilson (2001) refer to it as an alternative to surveying people since the data are lifted from surveying research in forms of thesis, dissertations, clinical trials, journals and other quantitative forms.

Elaborating on the chronological sequence, the meta-analytic researcher must first decide on a research question and in addition, confirm that enough literature exists on the specified topic. Having establishing enough research exists on the chosen topic, the researcher must seek out all existing literature that relates to their particular research question (Rosenthal, 1987).

After collecting related literature, the following steps included setting eligibility criteria, which are comprised of both inclusion – limits which determine the data will be included – and exclusion – the limits which determine a data will be excluded. (Lipsey & Wilson, 2001). Both the eligibility criteria and search strategy must be transparent to the reader as they dictate which articles will be included in the analysis and thus substantiate credibility of the meta-analytic research findings (Littell, Corcoran, & Pillai, 2008).

Next, from the collected literature, relevant data must be extracted and codified into numbers, which is in part the primary analysis (Glass, 1976). This analysis subsequently produces the effect size -- the measure of strength between two variables. Afterwards, the researcher conducts a secondary analysis, which re-analyses the data and follows through with the goal to answer their already set research question with the data obtained in their primary analysis (Glass, 1976; Lipsey & Wilson, 2001; Littell et al. 2008; Rosnow & Rosenthal, 1996).

How has Meta-Analysis Developed as a Way of Doing Research?

Before the 19th century, existing literature did not make a strong and clear distinction between observations within a given study, and summarized results from different studies as credited today (O'Rourke, 2006). In fact, British statistician Karl Pearson (1904), appears to have been the first to apply methods to combine observations from different clinical studies, which resulted in the production of correlation coefficients from which he analyzed and produced a result. Specifically, he was asked by the British government to determine whether soldiers who had volunteered for inoculation against typhoid might have been at lower initial risk of developing the disease than soldiers who had not volunteered. His result concluded there was less infection and death from typhoid in the inoculated groups verses uninoculated groups and were considered statistically significant within that time period. However, by today's standards his techniques would be considered invalid due to present advances in the area of statistical analysis. However, it is still quoted by modern authors as being the first building block of the data summary technique (Lipsey & Wilson, 2001; Whitehead, 2002; Little et al., 2008).

A century later an American social scientist, Gene Glass and his co-worker Mary Lee Smith statistically combined the results of 375 studies that evaluated the efficacy of psychotherapy (Smith & Glass, 1977), however, it was Glass (1976) who pioneered the definition of meta-analysis as, "the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings" (p.3). Other noteworthy researchers who have contributed to advances in the meta-analytic field, are, Tippet (1931) and Fisher (1935) who are noted for combining P-values (Scholz, 1983);

and Yates and Cochran (1938), who were acknowledged (albeit 20 years later) for pioneering the understanding of regression when using two-way tables (Breese & Hill, 1973; Freeman, 1973).

In the 1980s there has been an upsurge of number of meta-analyses being conducted and it has been linked with the greater emphasis on evidence-based medicine, defined as, "integrating individual clinical expertise with the best available external clinical evidence from systematic research" (Sackett, Grey, Rosenberg, Haynes & Richardson, 1996, p.71) and the need for reliable summaries of the vast and expanding volume of clinical research (Whitehead, 2002). During this same period advances were made by researchers such as Light and Pillemer (1984) illustrated a scientific approach to tackling research for social policies, and Hedges and Olkin (1985) who added to more sophisticated methods for conducting meta-analysis (Littell & et al., 2008).

Wang, Lau and Chalmers (1993) believed the discipline of meta-analysis was here to stay and reported that meta-analyses of medical studies had increased from 18 in the 1970s to 406 in the 1980s. Furthermore, Altman (2000) researched and confirmed that within the years 1997-2000, the medline database contained 589 publications, and personal investigations have shown that these numbers have amplified within recent years.

Models and Key Figures

For the purpose of this research, the model and key figures that will be discussed are the ones implemented within the data section of this meta-analysis.

1) Cohen's d

According to Orwin (1983), Cohen's *d* (1988) was introduced by Glass (1976) for the purpose of calculating an estimate for effect size. In addition, Cohen (1988) defined *d* as the difference between the means of two groups and argued that standard deviation of either group could be used when the variances of the two groups are homogeneous. Presently, pooled standard deviation, [σ_{pooled}] commonly used in practice (Rosnow & Rosenthal, 1996) and is found as the root mean square of the two standard deviations (Cohen, 1988, p. 44).

Thus *d or effect size:*

$$d = M_1 - M_2 / \sigma_{pooled} \qquad \text{And} \qquad \sigma_{pooled} = \sqrt{[(\sigma_1^2 + \sigma_2^2) / 2]}$$

Interpretation:

d represents the percentage of nonoverlap between the two groups, also known as the effect size. For example, and effect size of 0 represents both groups tend to be very similar and overlap entirely and likewise, an effect size of 1 means the two groups overlap 45% and thus, represent very much in common.

For the purpose of this meta-analysis, we will use the following guidelines put forth by Cohen (1998) and associates:

A small effect size ranges from 0.0 – 0.2

A medium effect size ranges from .20 – .50

A large effect size ranges from .50 and above.

2) *Hedges g*

Hedges's *g* is an extension of Glass (1976) earlier work (Hedges & Olkin, 1985) and also considered an inferential measure. It is very similar to Cohen *d* except it uses a pooled variance estimate to standardize the group means. Below represents the equation used:

$$g = M_1 - M_2 / S_{pooled}$$

where

$$S = \sqrt{[\sum(X - M)^2 / N-1]}$$

and

$$S_{pooled} = \sqrt{MSwithin}$$

Hedges & Olkin (1985) also propose an equation which will correct for bias in effect size estimates. It is represented by the equation below:

$$D_{unbiased} = (1 – 3/ 4(N-2) -1) * d$$

This meta-analysis will be correcting for bias and using the above stated equation.

Aggregation of findings: Hedge's The Inverse Variance Weight

According to Rubin and Babbie (2008):

> One study with a very small sample, for example, might obtain statistically insignificant results for an intervention with a moderate effect size. Another study for the same intervention, but either a much larger sample, might obtain statistically significant results with a smaller effect size. (p.528)

Thus, to aggregate the individual effect sizes calculated above, we use the method listed in this section. For this method to be selected, the studies generally vary in size and larger studies should carry more "weight" in our analyses than smaller studies. It is represented by:

$$w = \frac{1}{SE^2}$$

File Drawer Problem

Computation of file drawer problem was also determined using the formula (Rosnow & Rosenthal, 1996):

$$X = (K/2.706)\ [K\ (Z_k)^2\ - 2.706]$$

From this point on, computer programs such as R and SPSS were used to find the aggregated effect size, which, was then interpreted to add insight to the research question.

Method Used in this Study

Lipsey and Wilson (2001) outline a sequential method for conducting the meta-analysis, explicitly, (a) identifying, locating and retrieving studies; (b) selecting, computing and coding the effect size statics; (c) developing a coding scheme; (d) analysis, and (e) results interpretation. Being said, it is my intention to use the above stated sequence to present the methodology component of this meta-analysis.

Location of studies

To identify the maximum amount of studies and to assure good results, the McGill University Social Work Librarian was consulted on four different occasions regarding search strategies and the methodological process.

Regarding the article search, firstly, three subject categories were selected from the McGill university database, namely, Social Work, Psychology and Academic – General. Next, associated main sub-category search engines (*Academic Search Premier [EBSCO], Expanded Academic ASAP [Gale], Omnifile FT Mega [Wilson], Proquest Research Library [Proquest], Web of Science [ISI]; Medline [Ovid], PsycInfo [Ovid]; Social work Abstract [SP], Social Index with full text [Ebsco], Sociological Abstracts [CSA], Social Service Abstracts [CSA]*) were screened for possible article inclusion using a combination of keywords: *abuse, mistreatment, cruelty, ill-treatment, violence, maltreatment, exploitation trauma, offensive, sex, sexual, incest, molest, revictimization, victimization, survivor, adult, child, disorder, dissociate, identity abuse, rape, risk, defense mechanism, retrospective, analysis, empirical, analysis, child, kid, youth, adolescents, study, multiple, traumatic, events.* Owning to ambiguity regarding

terminology for key word search strategies within multiple databases, different search strings were used within selected subcategory databases using boolean operators, wild cards and truncations. In addition, fuzzy searches and thesaurus operators were utilized when available to increase the number of hits and articles retrieved. Secondly, Web of Science search engine specifying reviews was consulted using the above keyword search to find annual reviews that could be screened for usable articles. Thirdly, to locate unpublished data, dissertations and thesis were sought out using McGill university proquest dissertation search engine, Google and a manual search of the McGill library selves. Specifically, the shelves were searched using the suggestions of the social work librarian as to locations where key relevant material may be kept and also, monitoring the books in the surrounding areas that may be of interest based on the titles, abstracts or table of contents. Fourthly, various other university websites and professors were consulted to uncover published or unpublished data that may prove themselves useful for analysis. Fifthly, the website using Google and Google scholar were investigated for possible articles inclusion that could have been missed when using the already mentioned search strategies. Finally, perusing various literature reviews and following-up on selected reference sections aided in obtaining other relevant articles. When a possible study was identified and not available electronically, interlibrary loan was used to obtain the study.

As a final attempt to retrieve additional resources, Concordia University's databases were also inspected to see if they would yield in additional information. However, the search yielded in duplicated results.

Measuring Constructs

Finding valid instruments which measure dissociation in women was instrumental since dissociation was used to calculate the effect size. Consequently, data was extracted from the Diagnostic Inventory of personality and symptoms (DIPS), the Trauma Symptom Checklist-40 (TSC-40), Dissociative experience scale (DES), Dissociative Experiences Scale- II (DES-2). These scales were selected based on recognition within the psychological community and their exceptional reliability scores, which are further explained below. Each dissociation measurement used was reviewed by the thesis supervisor before accepted as part of a measurement for the study.

Dissociative Experience Scale (DES)

Developed by Bernstein and Putnam (1986), the 28- item self-report trait scale requests that respondents indicate, along a continuum ranging from 0-100, their subjective experience of dissociative states. Scores below 10 suggest a normal range of dissociation whereas scores above 30 are indicative of a dissociative disorder. The scale demonstrated high internal consistency in our sample (alpha= .95), high test- retest reliability and internal consistency, and good criterion-referenced and construct validity. The DES is known to be used as the most frequent measure for dissociation and takes approximately 15 minutes to complete. "The DES is a 28 item visual analog scale that quantifies the frequency of dissociative experiences and symptomology" (P. 466).

Adolescent –DES

This scale assesses the self-reported general dissociative experiences of adolescents while not under influence of alcohol or drugs (Armstrong et al., 1997). Taken from a revision of the original 28-item DES scale, it is a 30-item self-report questionnaire and

for each item, respondents indicate the frequency of their experience on an 11-point scale ranging from 0, labelled as never, to 10, labelled as always. When assessing reliability and validity of the A-DES, it possesses good internal consistency (Cronbach alpha .90) and 2-week test-retest stability (test-retest *r*=.77) (Smith & Carlson, 1996).

Diagnostic Inventory of Personality and Symptoms: (DIPS)

Referred to as a refinement from the Psychological inventory and personality and symptoms (PIPS), holds 171-item and takes approximately 15 minutes to complete. As well as measuring Dissociative Disorders (DD), it is composed of a 4-item validity scale and 11 scales that correspond to Axis I categories of the DSM-III. The first 11 scales indicate adjustment disorders. The final remaining scales indicate character disorders corresponding to the three personality disorder clusters of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980). According to Vincent (1985), the DIPS demonstrates high test/retest reliability and both content and criterion referenced validity. The overall reliability of the DIPS, using test-retest correlations is .78 and the DIPS both achieved an 82% correct classification rating for patients in a public hospital setting and 84% classification rating for patients in a public hospital setting (Vincent & Duthie, 1986). However, Vincent and Duthie (1986) did conclude that their classification results needed to be replicated on different patient populations, since they limited their study to inpatients only; nevertheless they maintained that their present data lend weight to the utility of the DIPS as a viable assessment device. Later on, Rhoades, Overall and McLaughlin (2006) enhance confidence to the DIPS being used as a multi-site diagnostic research by replicating the

(1986) study, including outpatients within their sample and obtaining results analogous to Vincent and Duthie. (1986).

Trauma Symptom Checklist-40 (TSC-40)

This 40- item self-report questionnaire was developed by Elliott & Briere (1991/1992) as a revision of the earlier TSC-33 (Briere & Runtz, 1989). Serving as a 4 point, likert –type scale, it is used to measure within the last two months related states of trauma and victimization. This questionnaire takes approximately 10-15 minutes to complete, and can be scored in approximately 5-10 minutes. It yields a total score and 6 subscale scores, one subscale being a dissociation measure. These scales have been found to have good internal consistency and predictive validity regarding childhood sexual abuse (Elliott & Briere, 1992). Furthermore, studies using the TSC-40 indicate subscale alphas ranging from 66 to .77 and full scale alphas averaging between .89 and .91 which indicate it is a relatively reliable measure (Briere, 1996).

Criteria for Selection

Lipsey and Wilson (2001) specify meta-analysts draw up an eligibility criterion, which helps determine whether findings from various research studies are appropriate to include in the meta-analysis. They include: 1) Distinguishing Features; 2) Research respondents; 3) Key Variables; 4) Research methods; 5) cultural and linguistic range; 5) Time Frame; 6) Publication Type. These categories were used as guidelines in order to select the appropriate studies for meta- analytic review.

Distinguishing Features

Lipsey and Wilson (2001) refer to this section as an opportunity to elaborate on defining the association between constructs and explaining how they can result in meaningful results. Thus, to answer the already stated research question, collecting data measuring the dissociative states of women who have experience both CSA and revictimization to women who had CSA only was adopted. Analyzing the difference in results through a meta-analytic lens could result in further knowledge as to the role of dissociation as a mediator to revictimization after CSA.

Hence, eligibility criterion for data selection were: 1) In the sample of CSA survivors, the dissociative scores obtained from the literature search must indicate both revictimization scores as well as a non revictimization scores. Also, 2) dissociative scores obtained must be unitary measuring dissociation and not combined their results with other mental health results. 3) Also, the measures used must be recognized as both reliable and valid dissociative research tools.

Research Respondents

Further eligibility criterions included selecting subject samples that were: 1) women were under the age of 18 when they experienced CSA; in combination with: 2) women over the age 18 when they experienced adult sexual victimization. Also, 3) articles selected must distinguish female and male scores. 4) Regarding definitions of CSA and ASA, broad definitions were utilized for the definitions of CSA, ASA so that grey literature – literature that has not received publishing or credit – would be protected and included. Definitions will be provided in the subsequent section.

Key Variables

The key variables of this research are as already mention in previous sections, are 1) women who experience CSA, 2) Women who experience ASA, 3) sexual revictimization and 4) dissociation.

Child sexual abuse- Was defined according to the Child Maltreatment Interview Schedule (CMIS), The Childhood Sexual Victimization Questionnaire, The Abuse Assessment Screen (AAS), The Childhood Abuse – Adult Victimization Questionnaire (CAAV) (several items borrowed from the TSI- live event questionnaire) Childhood Sexual experience Questionnaires (CSEQ), the Case worker reports and the interviews conducted by researchers. Definitions were ranged from "being touched of fondling before the age of 18 by someone 5 years older" to "rape of attempted rape before the age of 18"

Adult sexual abuse – was measured by Adult Victimization Survey (AVS), The Childhood Abuse Adult Victimization Questionnaire (CAAV), The Comprehensive Trauma Interview (CTI). Classifications of age were either equaled to or exclusively over the age 18 and ranged from unwanted sexual advances to incident (s) of rape of attempted from strangers or spouses.

Revictimization – was measured by The Adult Victimization Survey (AVS), Revised Impact of Event Scale (IES), The Sexual Abuse And Revictimization Survey, The Comprehensive Trauma Interview (CTI), The Childhood Abuse – Adult Victimization Questionnaire (CAAV) and self-report questionnaires created for the study. Definitions

for revictimization were limited to including at least one sexual assault before the age of 18 and also one sexual assault after the age of 18.

Dissociation – was measured by Dissociative Experiences Scale (DES), Trauma Symptom Checklist 40 (TSC-40), Diagnostic Inventory of Personality and Symptoms (DIPS), Dissociative Experience Scale – II (DES – II) and Multiscale Dissociation Inventory (MDI). Definitions for dissociation were limited to those that measured dissociation in samples that had experienced CSA and also either sexual revictimization or no revictimization. Definitions that included peritraumatic dissociation were excluded.

Research Methods

Firstly, all articles selected needed to be both quantitative and empirical based research. Secondly, since calculating the effect size is integral to the meta-analysis approach, studies selected needed to produce the necessary data, such as, dissociation score means and standard deviations as well as their represented p-values. Finally, data obtained needed to reflect revictimization data as well as child sexual abuse data, so that comparisons of the scores would lead to meaningful results.

Cultural and Linguistic Range

I attempted to use a wide cultural range and searched the web for many possible leads within other cultural contexts. However, taking linguistic capability into account, the articles were limited with a search criterion of being either written in English or French (Littell. et al., p.30).

Time Frame

To identify appropriate studies, a literature search was conducted between the dates of April 17th 2008 and July 15th 2008. Also, Concordia University's databases were inspected to see if they would yield in additional information between the months of September 5th to October 1st 2008. Most of the information gathered results in complete data, however, three data sources with available contact information were incomplete. Attempts were made to contact the authors within the months of August and September 2008. All three authors were reached successfully for their data sources (Gold et al., 1994; Haskell, 1999; Dietrich, 2007); however, one author could not retrieve the data as he was no longer affiliated with the institution where the research was conducted. The two remaining sources responded by e-mail and corresponded positively about the inclusion of their data. A time limit was set to obtain all relevant data by mid-November 2008. Unfortunately, while one data source was not retrieved by the given time limit, the other data set was retrieved, and therefore included within the effect size calculation.

Publication Type

Littell et al. (2008) refer to "grey" or "fugitive" which they define as hard-to-find or unpublished literature. Also, they caution that, "the absence of careful search for grey literature will pose publication and dissemination biases" (p.63), which in return will threaten the validity of the meta-analysis. Thus, extensive searches were conducted within both computerized bibliographic databases as well as on the web search engine "Google" and "Google scholar". Occasionally within the search period and data extraction process, three authors working in the research domain were contacted and

requested their assistance in reviewing the articles selected and also, whether there were additional search locations that needed to be explored. One author working in the research domain recommended an article that was later used as data for the meta-analysis.

Also, conference programs from previous years were perused to see if additional information could be sequestered and lead to possible data. Furthermore, to uncover "grey" literature both dissertations and thesis work were examined within other universities as well as within both McGill and Concordia University. Finally, review articles, hand searching relevant journal and government reports were investigated at length for possible resources. From the collection revealed, bibliographies and references were also read thoroughly for possibly missed resources.

Coding Characteristics

Coding procedures were created to enlist data that demonstrated links between child sexual abuse, dissociation and revictimization (Appendix 1). Information was further broken down into what is seen below:

Study
- Title
- Author
- Year
- Type

Hypothesis
- Main
- Related

Measurements

- Child Sexual Abuse
- Revictimization
- Dissociation

Results

- Revictimization
- No Revictimization

Next, from the informational sources, definitions of each measurement were extracted and furthermore results analyzed for similarities reporting methods. The definitions and results informed the need to acquire n-values within revictimized and non- revictimized groups as well as the means and standard deviations from the dissociation scores to calculate the effect size.

Software for Analysis

Software R (R Development Core Team, 2005) was used for data manipulation and effect size calculation. Also, SPSS (SPSS, 2007) was used for graphical display. Finally, Comprehensive meta-analysis (Borenstein, 1998) was used to assess bias and produce funnel plots.

Data Analysis

The inverse weighted method and mean standard differences were analyzed in terms of effect size scores, which measured the differences in dissociation scores between revictimized and non-revictimized women. Cohen's *d* standards as outlined in Wilson and Lipsey (2001) were used to assess the final results and determine the strength in effect size measures. P-values were evaluated in terms of significance. If the p -

values were not significant at a .05 confidence level and the effect size produced a less then moderate result, then the null hypothesis would be confirmed and therefore no link between dissociation, CSA and revictimization would be established. Studies included were also assessed in terms of methodological rigor. Issues of publication bias were assessed by calculating the classic Fail Safe N, Funnel Plot Diagrams and investigating Duval and Tweedie's Trim and Fill.

Sampling Error Variance (Homogeneity test)

To assess if sampling error was the only variance found within our samples, the test of heterogeneity was performed. Quantifying heterogeneity was also evaluated by determining the I ^ 2 and Tau ^2 and checking in accordance to Wilson and Lipsey (2001) standards. Finally, both Q-statsitics and P-vlaues were evaluated to a confidence level of .05 and tested for significance.

Summary of Method Used

The process began with the collection of data from both McGill and Concordia library university databases. After collecting a variety of published and non- published sources, all sources were screened with respect to the inclusion criteria and the ability to produce effect size data. Following steps included entering data in a coding manual, extracting useable results and calculated results using spss and R software.

Results were presented and later interpreted in the Discussion section using Cohen's *d*, adjusted Hedges g. Sample error variance was analyzed using the test for heterogeneity. Range restrictions were not a factor in this thesis and outliners were discussed within the Figure Results section. Bias issues were assessed using Funnel Plots, Classic Fail Safe N calculations and Duval and Tweedie's trim and fill. Articles were also assessed for methodological rigor and results were displayed in the Results section.

RESULTS

This meta-analysis explored the role of dissociation as a mediating factor to further revictimization subsequent to CSA and included a total of 642 women from 8 studies (n -range = 25 to 173). Appendix 2 demonstrates a flowchart, which shows the steps taken in the retrieval of sources that were later included or rejected in the meta-analysis.

Specifically, general search strategies starting April 2008 resulted in a total of 2734 studies, which were composed of prior reviews (n=149), personal contacts (n=2), electronic databases (n=1647), and Internet searches (n=935). Sorting out duplicates (n=208) and excluding citations judged irrelevant by title or abstract (n=85) reduced sources where full texts were retrieved for further in-depth analysis (n=123). Of the full text reports retrieved, some were viewed as relevant reports (n=28), whereupon (n=22) unique revictimization studies were identified. Of the unique revictimization studies, (n=12) were excluded since they measured either peritraumatic dissociation (n=2) or post traumatic stress syndrome (n=5), which were considered outside of the inclusion criteria. Furthermore, articles that included male samples only (n=1) and data that could not be used to calculate effect size, with no author contact information (n=4) were excluded. This resulted in (n=10) possible sources, where (n=2) sources were later rejected since data was later deemed unavailable after author consultation. This resulted in the final 8 studies, which meet the inclusion criteria and were used to calculate the effect size (see appendix 3).

A fixed effect model (refer to p.50) was used, adopting the assumption that there is only one true effect size and that the only source of error in our estimate is the combined effect of random error found within studies. According to Lipsey and Wilson (2001):

> The mean and related statistics for effect sizes can be computed by creating three new variables that are summed across records and used to compute the desired statistics. For each data record we need an effect size, ESi, and the inverse variance weight, wi….At this point, we assume that any desired adjustment to the effect size have been performed, such as the small sample bias correction for the standardized mean difference or the transformation of correlation via Fisher's Zr-transform. We are also assuming the effect size in the distribution to be analyzed are statistically independent. (p.129)

This result section is broken into two main sections, each displaying the overall results of the meta-analysis in the form of 1) standard mean differences and 2) the calculated hedges G value, which was used to correct for upward bias. Also, each section will display the results of the Q-statistics and the corresponding test of heterogeneity. Furthermore, graphical representation in the form of a histogram and related statistical details are included for result analysis. Moreover, Classic fail safe N, filed drawer computation, Duval and Tweedie's trim and fill, forest plot analysis and article bias issues are also presented. Finally, the articles included in the study are analyzed in terms of methodological rigor and corresponding graphical illustrations are included at the end of the results section and interpretations are carried to the subsequent discussion section.

Unstandardized Mean Differences

Table 1: Overall Unstandardized Mean Differences

	WMD	95%-CI	z	p.value
Fixed effects model	**1.9505**	**[1.0004; 2.9007]**	**4.0237**	**< 0.0001**
Random effects model	1.9858	[0.9670; 3.0047]	3.8201	0.0001

Displayed in Table 1 is the Weighted mean difference (WMD) values obtained from the meta-analysis calculations. Specifically, WMD =1.9505, $p < .0001$ (95% confidence interval = 1.004 -2.9007) demonstrates p is significant and according to Cohen's d demonstrates a large effect size (Mullen et al., 1988, p.46).

Table 2: Test of Heterogeneity

Q	d.f.	p.value
7.54	7	0.3752

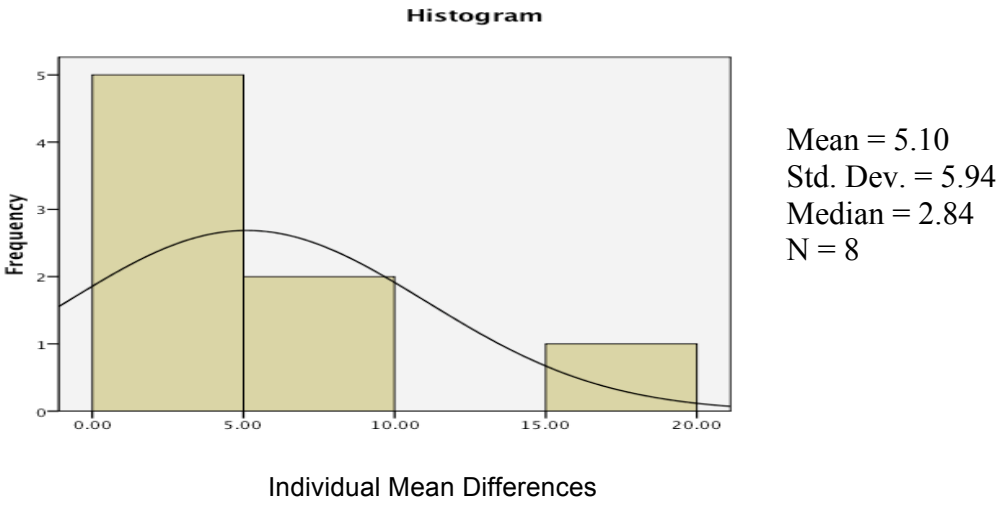
Also the test of heterogeneity (see Table 2) Q statistic of 7.54 with 7 degrees of freedom is less than the .05 critical value of 14.07 for a chi-square with 7 degrees of freedom. Also the p-value of .3752 exceeds the confidence level of .05. Therefore the results combined fail to reject the hypothesis of homogeneity at alpha = 0.5 and according to Lipsey and Wilson (2001) the use of the fixed effect size remains unchallenged and "The variance found in the sample of effect sizes is not demonstrably greater than would be expected from sampling error alone" (p.132).

Table 3: Quantifying Heterogeneity

tau^2 = 0.162; H = 1.04 [1; 1.82]; I^2 = 7.1% [0%; 69.9%]

Taking our analysis a step further and quantifying our dispersion, Table 3 shows the results obtained for I-squared and tau-squared, which are 7.1% and .162 respectively. An I-squared greater than 50% can be considered substantial (Brooks-Gordon, Bilby, Wells, 2006). Thus, we can conclude that 7.1 % of the observed variance between studies is due to sampling error and evidence to a homogeneous sample. Also, based on the assumption that the smaller the value of I-squared the less difference we see between fixed and random effects, we can see within our results the assumption to use a fixed effect model was not detrimental to our study. On the other hand, Cochran's Q value is greater than the degrees of freedom and the estimate of tau-squared is not equal to 0, so our results are not conclusive. Furthermore, the results obtained for both random and fixed calculations were not identical, which adds doubt to the results.

Figure 1: Unstandardized Mean Differences



Furthermore, histographical representation of the individual unstandardized mean differences (appendix 5) demonstrates a positively skewed distribution with more weight being emphasized over 5 studies and the mean (5.1050) being greater than the median (2.8350). According to Sanchez and Martin-Martinez, "The optimal weight to obtain the unbiased and minimum variance estimator is the inverse variance of each effect-size estimate." (1998, p. 211).

Here the values range from .92 to 19. The frequency of the values decrease steadily as the number of studies included decrease. The most frequent values occur at the left hand end of the x axis and so are the highest values. The least frequent values occur at the right hand end of the x axis and are, of course, the lowest values. The mean will occur somewhere between the highest column and the middle column. The mean value is closer to the left hand end of the x axis, so its frequency will be high. Thus,

Hedges G was calculated to address potential bias within the above results and the results are demonstrated below.

Standardized Mean Differences

Table 4: Standardized Mean Differences (Hedge's g incorporated)

	SMD	95%-CI	z	p.value
Fixed effects model	**0.3813**	**[0.2077; 0.5549]**	**4.3045**	**< 0.0001**
Random effects model	0.3813	[0.2077; 0.5549]	4.3045	< 0.0001

Table 5: Test of Heterogeneity

Q	d.f.	p.value
4.57	7	0.7126

Table 6: Quantifying Heterogeneity

tau^2 = 0; H = 1 [1; 1.42]; I^2 = 0% [0%; 50.3%]

The scores represented below are the standard mean differences converted to hedges g effect sizes and thus are more trustworthy results since this procedure gives more weight to effect sizes derived from larger samples and thus is least susceptible to sampling error. The overall effect size for the meta-analysis resulted a score of 0.3813 with a $p < .0001$ (95% confidence interval = .2077-.5549), which by Cohen *d* standards exceed the rule of thumb of .20 and is considered a medium effect size. P value set at a

confidence interval of .05 is considered significant. The test of heterogeneity resulted in a Q statistic of 4.57, which is less than the degree of freedom (7) and a p-value = 0.7126. As a result, the test of heterogeneity demonstrates a p-value resulting in non-significance. Furthermore, both Tau squared and I squared resulted in values of 0 which indicate homogeneity within our sample. Furthermore, the computer program provided results for both random and fixed values being identical, which, according to the program used for calculations, indicate there is no evidence of heterogeneity.

Figure 2: Standardized Mean Differences

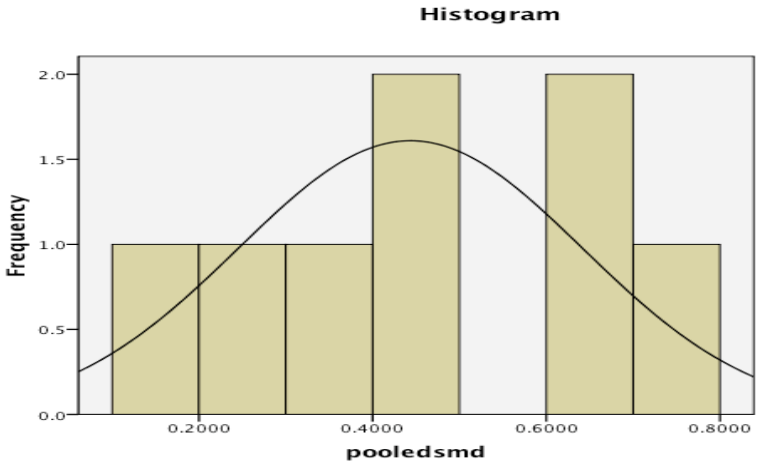
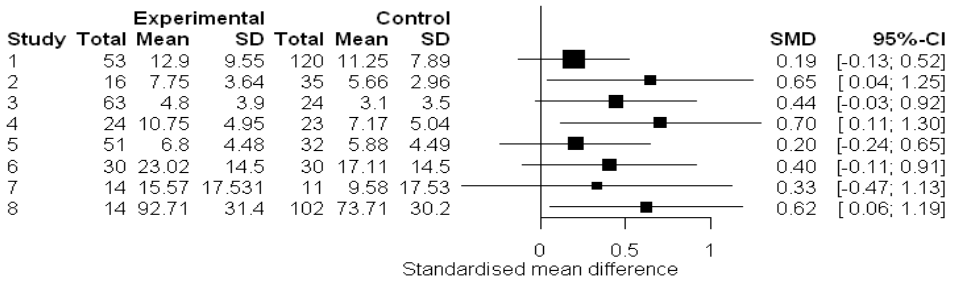


Figure 3 and the following associated statistics is a visual histogram representation demonstrates a less skewed distribution with the mean and median closer in value. Also, the degree if skewness dropped to .28 when accounting for inverse variance of each effect-size estimate. According to Cohen d estimates, the data resulted in a medium effect size.

Reviewing the findings in Figure 1, we recall that the results produced an uneven distribution. One interpretation for the uneven distribution could be that the data plot

found at the extreme right of Figure 1 is an outlier. Reviewing the scale the outlier data was taken from, it was noted that the data was taken from a scale measurement different from the other scores. Thus, when standardizing the scores (found in histogram 2) the data plot in question no longer presents as an outlier. In fact, the second histogram images of results illustrated 'well-behaved' data such as a smooth bell shaped curve and overall graphical representation. Thus, no other outliers were detected in this analysis.

Figure 3: Forest Plot Comparison

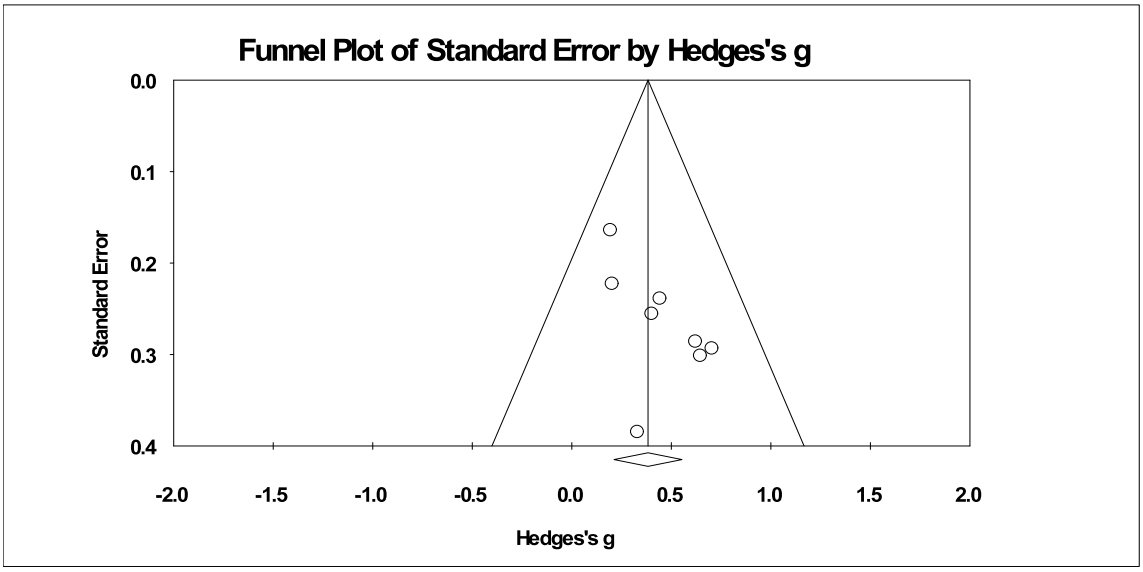


Illustrated above is a forest plot with confidence interval (CI) set between 0 and 1. According to Perera & Heneghan (2008), the eight squares represent each individual study that was used in the meta-analysis. Also, each value corresponds to the study's effect size at 95% CI. Furthermore, the size of the square corresponds to the weight of the study in the meta-analysis. At first glance, the forest plot seems well distributed, thus the overall sample is not distributed closer to 0 or 1. Also, individual studies 2 and 7 seem to attribute the least amount of weight, whereas 3, 4, 5, 6 and 8 seem to attribute more weight. Noteworthy is the first sample used in the study, which holds the most weight yet has a relatively lower SMD value than the other individual sample sizes.

In addition, the vertical line, known as “line of no effect" (Perera et al, 2008, p. 68) represents the result if the intervention had no impact. Results gathered from the graph shows that confidence limits for five studies did cross the zero line.

Publication Bias

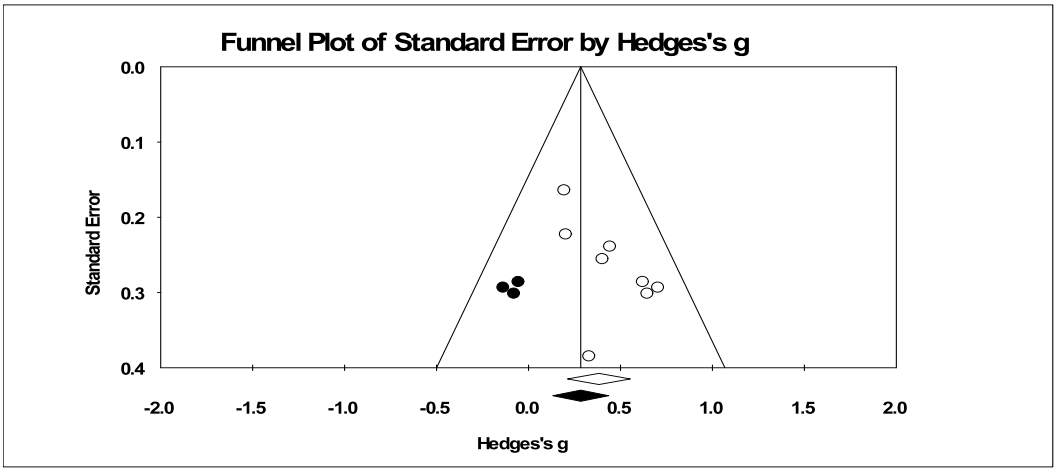
Figure 4: Funnel Plot Comparison



Funnel plots- scatter plots in which the treatment effect estimates from individual studies in the horizontal axis are plotted against a measure of study precision on the vertical axis- have been proposed as a means of detecting publication bias in meta-analysis. A correct funnel should adopt an inverted funnel shape, distributed equally around the mean effect. “Distribution should be small at the top of the plot (where larger and more precise studies are shown) and wider at the bottom” (Little et al., 2008, p.113). Little et al. (2008) further confer that an asymmetrical funnel plots is one indicator of publication bias, yet they also maintain that funnel plots are subjective and

need to be balanced with additional analysis. Furthermore, Egger, Davey, Schneider, Minder (1997) note that publication bias is not the only source of bias. For example, small studies may produce larger effect sizes within their design and analytic methods are less rigorous or when treatment plans are implemented with greater care than in larger studies.

Figure 5: Funnel Plot Comparison with Incorporated Bias Effect



As witnessed in the above funnel plot aggregated from individual standardized values provided in the appendix 6, the there are more studies centered on the right hand side of the funnel possibly indicating studies are missing that that there is potential bias.

Table 7: Duval and Tweedie's Trim and Fill

	Studies Trimmed	point estimate	lower limit	Upper limit	Point estimate	lower limit	upper limit	q-Value
Observed values		.38271	.21195	.55347	.38271	.21195	.55347	4.72049
Adjusted	3	.28391	.13206	.43575	.28627	.12596	.44658	10.91027

Studies to the left of the mean 3
Studies to the right of the mean 0

The black dots represent above in the above funnel plot were derived from Duvaland Tweedie's trim and fill technique method that allows a computation of where the missing studies are likely to fall, add them to the analysis, and then recompute the combined effect. With respect to the fixed effect model, the point estimate and 95% confidence interval for the combined studies is 0.38271 (0.21195, 0.55347). Using Trim and Fill the imputed point estimate is 0.28391 (0.13206, 0.43575).

Table 8: Classic Fail safe N

Z –value for observed studies	4.63667
p-value for observed studies	0.00000
Alpha	.05
Tails	2.0
Z for alpha	1.95996
Number of studies observed	8
Number of missing studies that would bring p-value to > alpha	37

To add to the analysis, the classic fail safe N was calculated to apprehend how many studies would be needed to overthrow statically significance set at .05. According to the fail safe calculation, we would need approximately an additional 37 studies supporting the null hypothesis to influence our results and cause the combined 2-tailed p-value to exceed 0.05. Specifically, there would be a need for 4.5 missing studies for every observed study for the effect to be nullified. Personal calculations using Rosenthal & Rosnow (2008) formula gave the results of 39.865. Presently, according to the search strategy conducted in this study, there is a lack of the existence of 40 additional articles could add support the null hypothesis.

Methodological Rigor Results and Analysis

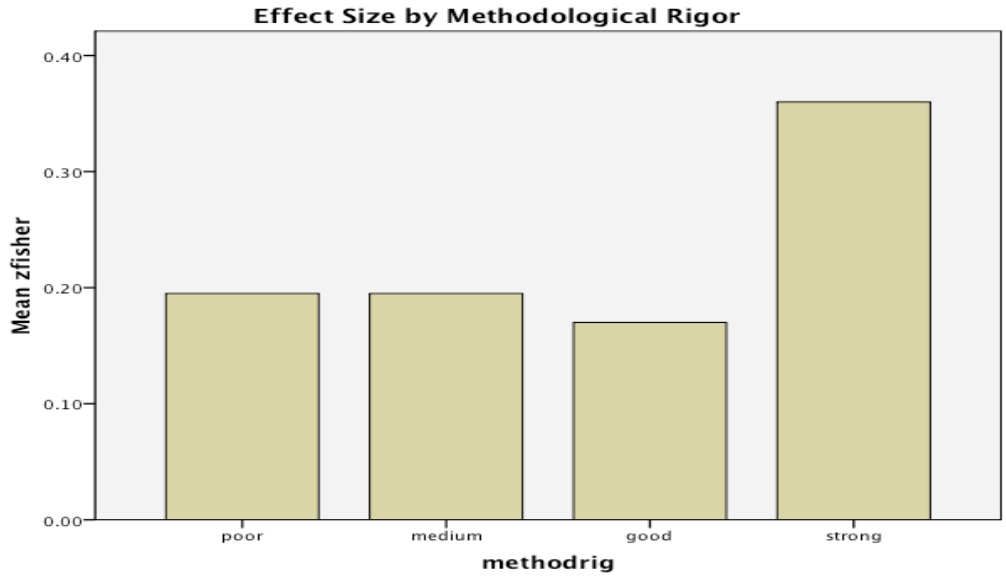
As noted above, 8 studies were included in the study based on meeting the criteria for inclusion. However, individual studies were evaluated in terms of methodological rigor to add insight into the quality of the results. Methodological variables included magnitude sample size, researcher involvement, rigor and efficacy of data collection, attrition rates, strength of design and the number of mental health factors being studied other than dissociation and publication bias. These factors will be evaluated based on the criteria mentioned below and then amalgamated into a final result for each study (Strong, good, moderate, poor) that will be further discussed in the proceeding discussion section.

Table 9: Criteria for Methodological Rigor Analysis

Criteria	Rigor Analysis	
Sample Size	Larger than 100	100 or Less
Researcher Involvement	None Involved	Involved in Questionnaire Procedure/Unknown
Attrition Rates	Low	High/Unknown
Strength of design	Well-built	Weak/Unknown
Selection bias.	No	Yes or Unknown

Data were converted into z-fisher results in order to facilitate data comparison. For full view of data set see appendix 7.

Figure 6: Z-fisher Methodological Rigor Results



N=2 N= 2 N=3 N=1

Results from the analysis of each study in terms of methodological rigor resulted in a total of 1 strong study, 3 good studies, 2 moderate and 2 poor. To further test methodology rigor and it's pending consequence on effect size values, steps were taken to graphically illustrate z-fisher values crossed with the results of methodological rigor results. Interestingly, the study with the strongest methodological rigor resulted with the highest effect size. Also, poor and medium caliber studies resulted in similar z-fisher values and studies with good methodological rigor ended up with the lowest z-fisher values**.**

DISCUSSION

Interpretation of Data

The objective set out in this thesis was to determine whether or not dissociation is linked to CSA and revictimization in women samples. A meta-analytic investigation was undertaken, which resulted in eight studies of data that met the inclusion criteria and could provide data for the calculation of the effect size.

The results gathered from the result section did established an overall support for the hypothesis set out in this thesis, namely, the dissociation scores were higher in women with histories of CSA and revictimization than women who experienced CSA and no revictimization. Also, the results proved to be statistically significant and established a moderate relationship between CSA, dissociation and revictimization. Also, there was evidence of homogeneity within the collected data sample used for the meta-analysis

Since causality remains unclear, two interpretations are to be considered. First, one interpretation is CSA increases dissociation tendencies, which in turn increase the risk for subsequent revictimization. Therefore, the first interpretation implies that vulnerability to sexual revictimization is the result of dissociative tendencies that are acquired following the aftermath of CSA. Along the same line of thought, another interpretation would be dissociation could interact along with other proven mediators and reinforce sexual revictimization tendencies in CSA survivors. Second, these results also justify the interpretation that the combination of CSA and sexual revictimization in women lead to higher results of clinical dissociation. Accordingly, the proceeding

interpretation assumes that sexual revictimization is not mediated by dissociation, rather, sexual revictimization in combination with CSA leads to dissociation. In view of the ambiguity surrounding the results, this thesis opens the door to the need for more longitudinal studies to conclude these interpretations with absolute certainty.

Interpretation of Figures and Tables

Analysis of funnel plot depiction brought attention to the results as being possibly biased. However, funnel plots have been noted by researchers as misleading; for example, Tang and Liu (2000) performed an analysis of funnel plot interpretations on 198 published meta-analyses and concluded that funnel plots ought to be interpreted with caution.

Furthermore, Song, Khan, Dinnes & Sutton (2002) reviewed a sample of 28 meta-analysis studies for publication bias using funnel plot methods and concluded that funnel plot asymmetry tends to be greater in meta-analysis that include smaller studies. Although they maintained more research need to be conducted to explain why smaller studies resulted in asymmetrical funnel shapes, they cautioned that publication biased need to be assessed to ensure comprehensive interpretations of results.

After obtaining an indication of bias within our results, further analysis of bias was conducted, which included the use of the Trim and Fill method and the Classic Fail Safe N. The Trim and Fill method established that even if indeed the results were bias, the interpretation would still result in a moderate effect size. Furthermore, the Classic Fail Safe N concluded that 37 extra studies supporting the null hypothesis would be

required to alter our interpretations to non-significant. After a thorough investigation of possible sources supporting the null hypothesis, it is most probable that not enough studies have been established countering our hypothesis.

Therefore, although the Funnel Plot Figures added insight into our results being unbiased, the Trim and Fill Method and the Classic Fail Safe N ruled out indications that even with possibilities of bias, the results would not change enough to alter the results. Finally, 5 out of 8 studies did crossing the line of no effect within the forest plot comparison. Taking this margin of error into account, it propels the need for clearer studies to be preformed so that the hypothesis for this thesis can be asserted with absolute certainty.

Interpretation of Methodological Rigor

Studies included were already screened for poor methodological rigor, such as incomplete data results or incomprehensible results. Thus, results included in the study would not be below a certain caliber which would determine them unacceptable for inclusion. One pivotal finding was that the study with the highest effect size also was the strongest in methodological rigor. In contrary, studies that resulted in good methodological rigor seemed to have the lowest effect size results. When taking a closer look at the number of studies distributed to each category of methodological rigor, only one study is included in the "strong" category whereas three are included in the "good" category. Hence, one interpretation is that the study that is within the "strong" category is an outlier and since the majority of the studies are centered within the good category they are trust worthier in terms of results. Therefore, drawing on this perspective, it is

noticeable that studies with "good" methodological rigor tend to produce more conservative effect size results than those with "poor" or "moderate" categories of methodological rigor.

Limitations

Limitations are inherent when undertaking studies with this choice of sample. First, the study was entirely female and forced the exclusion of one methodologically strong study for the sake of gender consistency. A lack of studies within the male population relating to this topic of study was discovered, putting a halt to our intention to undertake a separate study for male dissociation effects and revictimization issues. Second, all the studies included relied greatly on retrospective data collection methods, which are inherently plagued with possibilities of bias. Since the designs are not longitudinal, there is a high reliance on adult's past memories and their willingness to share what happened to them a long time ago (Briere, 1992). Moreover, the topic that was chosen for this study 'dissociative samples' are already threatened in terms of credibility and reliability to remember past events (Roediger & Bergman, 1998).

Limitations within the meta-analysis design were also inherent given the sample of study. First, the studies included varied greatly in their definitions of CSA and revictimization. Second, dissociation was measured using standard diagnostic tests which keep some rigor in terms of our results. However, as a variety of measurements was used, outliers were unavoidable; therefore, secondary analysis were necessary. Finally, six studies found were later excluded due to incomplete data for the computation of effect sizes, which led to fewer studies being included in our analysis,

consequently less strength was associated with our findings. Undertaking closer inspection of various studies, many studies that establish this finding are also incomplete within their results pertaining to dissociation, and furthermore, some drop the results from the analysis and do not carry the results from beginning to end (Kessler & Bieschke, 1999). Possible reasons include: 1) dissociation was considered a secondary objective and therefore, the authors did not carry the results from beginning to the end; 2) Dissociation was measured along with other mental health components, and the results were displayed as one overall result. Therefore, the dissociation scores lost their individuality and could no longer be utilized for the purpose of this meta-analysis.

Implication for Social Work

This meta-analysis reestablishes the need for dissociation to be considered as an additional factor that could contribute to revictimization in CSA survivors. Recent studies have implied that dissociation is not a mediator to revictimization (Macy, 2007), and this is a fair assumption as many studies have established the preceding implication.

Social workers are at the forefront when dealing with clients who may have faced horrendous consequences of CSA that are complicated with revictimization issues. It is imperative that social workers keep in mind dissociation's link to revictimization when establishing treatment plans, so that they gain a fuller awareness of possible roadblocks to recovery that may be experienced by their clients.

When reviewing theoretical models already introduced within the literature review section, the existing link between CSA, dissociation and revictimization becomes

clearer. For example, Polunsny and Follette's (1995) model demonstrates how dissociation can be used by CSA survivors to manage stress provoking feelings, yet simultaneously, avoiding stressful feelings can lead to the avoidance of danger cues. Therefore, it is possible that CSA survivors may develop higher tolerance for dangerous situations, which increase the risk exposure for sexual revictimization. Therefore, if faced with situations where clients tend to be caught in repeated sexual revictimization cycles, within both the assessment and treatment phases, social workers need to question whether their clients are dissociating as a way to avoid emotionally overwhelming feeling stemming from childhood trauma. This added step by social workers could lead to increased insight into how to break the revictimization cycle.

Therefore, there is support for Grauerholz's (2000) model, which incorporates a two-prong approach of assessing revictimization. By treating dissociation mental health issues and keeping in mind the larger systemic dangers that can contribute to revictimization, therapist can be better armed at addressing the full impact of sexual revictimization.

Having said this, it is also valuable that social workers work with the ideology that revictimization is a complex phenomenon, which cannot be simply reduced to one etiology, or evaluated and treated solely on a physiological level. Other factors, such as other clinical diagnoses and victim-perpetrator relations need to be considered to gain full awareness into revictimization patterns.

Finally, as brought forward by Macy (2007), it is worthwhile to consider why little discussion is put forward studying revictimization in the social work literature. After all social workers do participate as first line workers with many potential revictimization clients. In addition, with the dearth of understanding as to how to conquer revictimization within prevention and treatment efforts, there is indeed a call for social workers to fill this gap and investigate this issue with greater tenacity.

Future Directions for Research

Gaps in the field remain substantial and far too little is known about how to reduce the likelihood of revictimization among CSA survivors (Macy, 2007).

Firstly, there is a lack of understanding as to why some women experience revictimization and others do not (Classen et al., 2005; Noll, 2005). In view of this, the underlying mechanisms connecting repeated sexual victimizations are not yet well understood and further research can help inform both the development and interventions phases in preventing revictimization (Rozee & koss, 2001; Yeater & O'donohue, 1999).

Secondly, revictimization seems to be a complex phenomenon, which has little research investigating risk factors in combination with social context and multi-systemic hierarchies. There is a pull away from theories of relationship dependency and traumatic bonding, since they do not help explain why women frequently experience revictimization from more than one perpetrator (Arata, 2002). For example, both poverty and homelessness were found to increase women's risk of revictimization, (Breitenbecher, 2001). Hence, future research should seek to determine what individual,

family, community and social factors protect against revictimization. Third, nearly all research endeavors have utilized cross-sectional designs and therefore rely solely on retrospective self-reports of childhood victimization.

Thirdly, there needs to be more longitudinal research conducted in this area so that researchers can investigate revictimization with a sequential framework (Macy, 2007). Since little is known about what enhances survivors' resilience both on a day-to-day basis as well as over their lifetimes, sequential research can help answer some strength based coping mechanisms CSA survivors use to overcome the traumatic event.

Fourth, meager research exists exploring revictimization among women of different cultures, races and ethnicities (Macy, 2007). In fact, Urquiza & Goodlin-Jones (1994) conducted revictimization studies with different cultural contexts and found results of significant directional differences in revictimization rates between white women, African-American women, and Latinas, but not for Asian-American women. The results of this investigation highlight need for researchers to take a broader cultural context in which to view sexual victimization.

CONCLUSION

Concluding Remarks

It can happen that erroneous conclusions gathered from research data can escape careful surety and lead advancing scholars to promote fallacies as fact, which can then misguide clinical and research/treatment intervention. It this case, dissociation, in recent literature has been documented as not having an effect on revictimization, and moreover questions have been raised as to whether it should be dropped from focus when it comes to revictimization research efforts.

In sharp contrast, this meta-analysis was able to produce a moderate effect size, supporting the linkage of dissociation to CSA and revictimization in women populations.

However, this conclusion is only the first stepping stone to more research needed to be done. First, this thesis cannot confirm sequencing. Does the research finding mean that CSA brings on dissociative traits that then leave CSA survivors vulnerable to revictimization? Or does it mean that the combination of a child and adult victim-survivor experiences leads to the outcome of clinical dissociation?

Also, taken into account with other research findings, dissociation alone should not be attributed as the one and only potential mediator to revictimization. As witnessed in the research, the cycle of revictimization has been seen as a complex phenomenon, which incorporates several factors. Thus, it would be unsuitable to assess dissociation

without taking it into account along with other factors, such as depression and substance abuse, which are already seen as possible mediators.

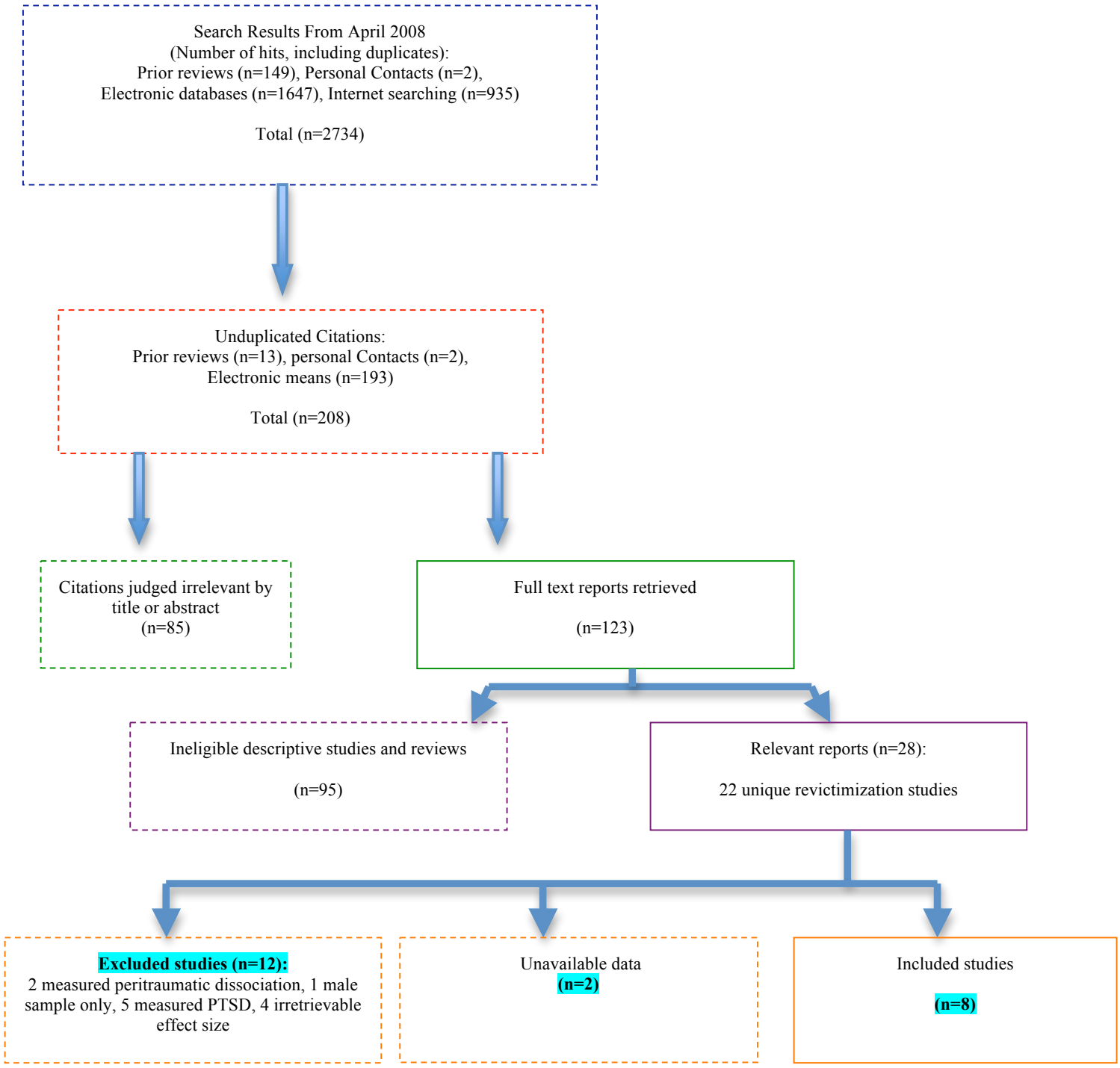
The review of past research in the area of revictimization is valuable since it brings to light some forgotten past questions that may indeed be affecting the victim-survivor population. The goal of this thesis is to take this information and investigate it further, so that treatment methods will be fully prepared to stop the revictimization process, which has already devastated many lives. Some big challenges may exist in incorporating this new found data into mainstream literature, as it may call for some scholars to challenge their past assumptions on dissociation or reopen what was once known as a closed door of questioning. Yet, moving with a common goal of eradicating the revictimization phenomenon can also serve as the main focus among scholars. Thus, bringing to light this new finding can only help to clarify the mystery surrounding the revictimization phenomenon and add hope towards establishing more effective revictimization assessment and treatment processes.

APPENDIX 1: *CODING MANUAL*

Variable	**Label**	**Values**
IDnum	Identification number	Designated ID number
Year	Year published	If unpublished year accepted was taken
Geographical region	Data extracted from this location	1 USA 2 Canada 3 European Country 4 other
Author	Author of study	All authors according to publication
Type	Type of report	1 book 2 journal article or book chapter 3 thesis or doctoral dissertation 4 technical report 5 conference paper 6 other (specify)
Sample race	Predominant race	1 > than 60% white 2 > than 60% black 3 > than 60% Hispanic 4 > than 60% other minority 5 mixed, none more than 60% 6 mixed, cannot estimate proportion 9 cannot tell
Total Sample size	Start and end of study	1 > 100 2 < 100
Revictimized group	Start and end of study	1 > 100 2 < 100
Non-revictimized group	Start and end of study	1 > 100 2 < 100
Dissociation measurement	Type of scale used	1 DES 2 DIPS 3 TSC-40 4 DES -2 5 other (specify)

Researcher	Researcher involvement	1 Yes 2 no 3 I do not know 3 other (specify)
Attrition	Rate of attrition	1 over 30% 2 less than 30% 3 unknown
Effect size data	Effect size based on	1 Means and standard deviation 2 t – value or f-value 3 chi-square (df=1) 4 frequency or proportions 5 other (specify)
Factors measured	Factors measured	1 dissociation only 2 dissociation plus 1 3 dissociation plus 2 4 dissociation plus 3 5 other (specify)
Sample population from CSA	Measurements taken from CSA group	1 yes 2 no 3 other (specify)
Sample population include ASA	Measurements include ASA and non –ASA group	1 yes 2 no 3 other (specify)
Research design	Type of research design	1 experimental 2 quasi experimental 3 correlation 4 other (specify)
Direction of effect	Direction of effect	1 dissociation is linked 2 dissociation is not linked 3 unknown 4 other (specify)
Bias as a factor	Is research bias	1 yes 2 no 3 I do not know 4 other (specify)
Research design	Type of research design	1 experimental 2 quasi experimental 3 correlation 4 other (specify)

APPENDIX 2: *FLOW CHART IN RETRIEVING SOURCES*



Based on flow chart for Reviews (Source: Littell, Popa, & Forsythe, 2005).

APPENDIX 3: *STUDIES INCLUDED IN THE META-ANALYSIS*

Number and Author	Year Published	Sample size	Dissociation Revictimization score Means	Revictimization Standard Deviation	Dissociation Non - Revictimization score Means	Non – Revictimization Standard Deviation
1) Sanberg	1995	Total Sample =173 CSA Sample = 120 Revictimization sample = 53	12.90	9.55	11.25	7.89
2) Field et al.	1999	Total Sample =51 CSA Sample =35 Revictimization sample = 16	7.75	3.64	5.66	2.96
3) Whetsell	1990	Total Sample =87 CSA sample =24 Revictimization sample = 63	4.80	3.90	3.10	3.50
4) Van Benschoten	1995	Total Sample =47 CSA sample =23 Revictimization sample =24	10.75	4.95	7.17	5.04
5) Frenkel	2002	Total Sample =83 CSA sample =32 Revictimization sample =51	6.80	4.48	5.88	4.49
6) Hunt	1998	Total Sample =60 CSA sample =30 Revictimization sample =30	23.02	14.50	17.11	14.50
7) Pearson	1995	Total Sample =25 CSA sample =11 Revictimization sample =14	15.57	17.53	9.58	17.53
8) Dietrich	2007	Total Sample =116 CSA sample =102 Revictimization sample =14	92.71	31.40	73.71	30.20

APPENDIX 4: *DEFINITIONS AND SCALES USED IN META-ANALYSIS*

	CSA	Dissociation	Revictimization
1	Childhood Sexual victimization Questionnaire: Measure CSA before age 16	Dissociative Experiences Scale	Revised Impact of Event Scale: - Include CSA and ASA within past 7 days
2	-Having at least 2 explicit memories of sexual abuse; -involving genital contact; -sexual abuse occurring between the ages of 3 and 15, being at least 5 years younger than the perpetrator	Trauma Symptom Checklist 40	Sexual Experience Survey: Include CSA and ASA within previous 6 months
3	- less than 17 when the abuse began; - age difference of 5 years ore more or the other person was stronger, smarter, more likely to be believed, or in a position of authority	Diagnostic Inventory of Personality and Symptoms	-being a victim again as an adult, after having been sexually abused as a child. Includes: Rape, Spousal or sexual partner abuse or Sexual abuse by a therapist.
4	Childhood Abuse – Adult Victimization Questionnaire - Age 16 years and under	Dissociative Experience Scale - II	Childhood Abuse – Adult Victimization Questionnaire - include one experience 16 years and younger and one experience 18 years and older.
5	Child Sexual Abuse Questionnaire- reported having experienced CSA as described on item 15 before 16 (although, questionnaire specifies before 18)	Trauma Symptom Checklist-40	Sexual Experience Survey: include one experience of CSA and one SA experience 18 years and older.
6	Prescreening questionnaire indicated they experienced Sexual Abuse before age 17	Dissociative Experience Scale	Negative Events Checklist: Subjects who stated they experienced at least one item on the Negative Events Checklist.
7	Experienced Sexual abuse: before age 12 or between 12-18	Dissociative Experience Scale	Experienced both old and recent trauma
8	Child Maltreatment Interview Schedule: Sexual abuse experiences up and until age 17	Multiscale dissociation inventory	Adult Victimization Survey: measure SA after age 17 and include one experience of CSA

APPENDIX 5: *INDIVIDUAL UNSTANDARDIZED MEAN DIFFERENCES*

MD	95%-CI	Effect Size (fixed)	Effect Size (random)
1)1.65	[-1.28; 4.58]	10.49	11.25
2) 2.09	[0.06; 4.13]	21.79	21.78
3) 1.70	[0; 3.40]	31.26	29.57
4) 3.58	[0.72; 6.43]	11.06	11.81
5) 0.92	[-1.06; 2.90]	22.96	22.79
6) 5.91	[-1.43; 13.25]	1.68	1.91
7) 5.99	[-7.85; 19.83]	0.47	0.54
8)19.00	[1.53; 36.46]	0.30	0.34

Number of trials combined: 8

APPENDIX 6: *INDIVIDUAL STANDARDIZED MEAN DIFFERENCES*

MD	95%-CI	Effect Size (fixed)	Effect Size (random)
1) 0.20	[-0.12; 0.52]	28.72	28.72
2) 0.65	[0.04; 1.25]	8.21	8.21
3) 0.44	[-0.03; 0.92]	13.36	13.36
4) 0.71	[0.11; 1.30]	8.63	8.63
5) 0.20	[-0.24; 0.64]	15.35	15.35
6) 0.40	[-0.10; 0.91]	11.52	11.52
7) 0.33	[-0.47; 1.12]	4.76	4.76
8) 0.62	[0.06; 1.19]	9.46	9.46

Number of trials combined: 8

APPENDIX 7: *INDIVIDUAL Z-FISHER VALUES*

MD	95%-CI	Effect Size (fixed)	Effect Size (random)
1) 1.65	[-1.28; 4.58]	10.49	11.25
2) 2.09	[0.06; 4.12]	21.79	21.78
3) 1.70	[0; 3.40]	31.26	29.57
4) 3.58	[0.72; 6.43]	11.06	11.81
5) 0.92	[-1.06; 2.90]	22.96	22.79
6) 5.91	[-1.43; 13.25]	1.68	1.91
7) 5.99	[-7.85; 19.83]	0.47	0.54
8) 19.00	[1.53; 36.46]	0.30	0.34

Number of trials combined: 8

References:

(*References marked with an asterisk indicate studies included in the meta-analysis)

Alexander, P. C. (1992). Application of attachment theory to the study of sexual abuse. *Journal of Consulting and Clinical Psychology*, *60*, 185–195.

Altman, D. G. (2000). Confidence intervals in practice. In D. G. Altman, D. Machin, T. N. Bryant & M. J. Gardner (Eds.), *Statistics with confidence* (2nd ed., pp. 6 - 14). London: BMJ Books.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders.* Washington, DC: Author.

Arata, C. M. (2002). Child sexual abuse and sexual revictimization. *Clinical Psychology: Science and Practice, 9*(2)*,* 135-164.

Armstrong, J., Putnam, F. W., Carlson, E. B., Libero, D. Z., & Smith, S. R. (1997). Development and validation of a measure of adolescent dissociation: The Adolescent Dissociative Experiences Scale (A-DES). *Journal of Nervous and Mental Disorders, 185*, 491-497.

Atkeson, B. M., Calhoun, K. S., & Morris, K. T. (1989). Victim resistance to rape: The relationship of previous victimization, demographics, and situational factors. *Archives of Sexual Behavior*, *18*, 497-507.

Banyard, V. L., Williams, L. M., & Siegel, J. A. (2001). The long-term mental health consequences of child sexual abuse: An exploratory study of the impact of multiple traumas in a sample of women. *Journal of Traumatic Stress*, *14*(4), 697-715.

Beitchman, H. J., Zucker, J. K., Hood, E. J., DaCosta, A. G., & Akman, D. (1991). A review of the short-term effects of child sexual abuse. *Child Abuse & Neglect, 15,* 537–556.

Bernstein, E. M., & Putnam, F.W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disease*, *174*, 727-735.

Boon, S. A., Draijer, N. (1993). Multiple personality disorder in the Netherlands: A clinical investigation of 71 patients. *American Journal of Psychiatry, 150*, 489-494.

Breese, E. L., & Hill, J. (1973). Regression analysis of interactions between competing species. *Heredity*, *31,* 181–200.

Breitenbecher, K. H. (2001). Sexual revictimization among women: A review of the literature focusing on empirical investigations. *Aggression and Violent Behavior, 6*, 415–432.

Briere, J. (1988). The long-term clinical correlates of childhood sexual victimization. *Annuals of the New York Academy of Sciences, 528*, 327–334.

Briere, J. (1992). Methodological issues in the study of sexual abuse effects. *Journal of Consulting and Clinical Psychology, 60*, 196–203.

Briere, J. (1996). Psychometric review of the Trauma Symptom Checklist-40. In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 373-377). Lutherville, MD: Sidran Press.

Briere, J., & Runtz, M. (1987). Post-sexual abuse trauma: Data and implications for clinical practice. *Journal of Interpersonal Violence, 2,* 367–379.

Briere, J., & Runtz, M. (1988). Symptomatology associated with childhood sexual victimization in a non-clinical adult sample. *Child Abuse & Neglect*, *12*, 51–59.

Briere, J., & Runtz, M. (1989). The Trauma Symptom Checklist (TSC-33): Early data on a new scale. *Journal of Interpersonal Violence, 4,* 151–163.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513-531.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Brongersma, E. (1984). Aggression against pedophiles. *International Journal of Law and Psychiatry*, *7*, 79-87.

Brongersma, E. (1991). Boy-lovers and their influence on boys: Distorted research and anecdotal observations. *Journal of Homosexuality*, *20*, 145-173.

Brooks-Gordon, B., Bilby, C., & Wells, H. (2006). A systematic review of psychological interventions for sexual offenders I: Randomised control trials. *The Journal of Forensic Psychiatry and Psychology*, *17*(3), 442-466.

Bulik, C. M., Prescott, C. A., & Kendler, K. S. (2001). Features of childhood sexual abuse and the development of psychiatric and substance use disorders. *British Journal of Psychiatry, 179*, 444–449.

Burgess, A.W., Hartman, C. R., & McCormack, A. (1987). Abused to abuser: Antecedents of socially deviant behaviors. *American Journal of Psychiatry, 44*, 1431-1436.

Butler, I. (2002). A code of ethics for social work and social care research. *British Journal of Social Work, 32* (2), 239-248.

Chiswick, D. (1983). Sex crimes. *British Journal of Psychiatry*, *143*, 236-242.

Chu, J. A., & Dill, D. L. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry, 147*, 887–892.

Classen, C. C., Palesh, O. G., & Aggarwal, R. (2005). Sexual revictimization: A review of the empirical literature. *Trauma, Violence, and Abuse, 6*(2), 103–129.

Cloitre, M., Scarvalone, P., & Difede, J. (1997). Posttraumatic stress disorder, self and interpersonal dysfunction among sexually retraumatized women. *Journal of Traumatic Stress, 10*(3), 437-452.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York: Academic Press.

Cohen, L., & Roth, S. (1987). The psychological aftermath of rape: Long term effects and individual differences in recovery. *Journal of Social and Clinical Psychology*, *5*, 155-189.

Cole, P. M., & Putnam, F. W. (1992). Effect of incest on self and social functioning: A developmental psychopathology perspective. *Journal of Consulting and Clinical Psychology*, *60*, 174–183.

Collin-Vézina D., Hébert, M. (2005). Comparing dissociation and PTSD in sexually abused school-aged girls. *Journal of Nervous and Mental Disease*, *193*, 47–52.

Comprehensive meta-analysis - a computer program. Borenstein M; International Cochrane Colloquium (6th : 1998 : Baltimore, Md.). Systemic Reviews and Evidence Action International Cochrane Colloq 6th 1998 Baltimore Md. 1998; 6: 98. Hillside Hospital, Glen Oaks, NY, USA.

Desai, S., Arias, I., Thompson M. P., & Basile, K. C. (2002). Childhood victimization and subsequent adult revictimization assessed in a nationally representative sample of women and men. *Violence and Victims, 17*(6), 639–653.

* Dietrich, A. (2007). Childhood maltreatment and revictimization: The role of affect dysregulation, interpersonal relatedness difficulties and posttraumatic stress disorder. *Journal of Trauma & Dissociation, 8*(4), 25-51.

Doll, L. S., Koenig, L. J., & Purcell, D. W. (2004). Child sexual abuse and adult sexual risk: Where are we now? In L. S. Doll, S. O. O'Leary, L. J. Koenig & W. Pequegnat (Eds.), *From child sexual abuse to adult sexual risk* (pp. 3-10). Washington, DC: American Psychological Association.

Egger, M., Davey, S. G., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *British Medical Journal*, *315*, 629-634.

Eid, J., & Morgan, C. A. (2006). Dissociation, hardiness, and performance in military cadets participating in survival training. *Military Medicine*, *171*, 436-442.

Elliott, D. M., & Briere, J. (1991). Studying the long-term effects of sexual abuse: The Trauma Symptom Checklist (TSC) scales. In A. W. Burgess (Ed.), *Rape and sexual assault: Vol. 3. A research handbook* (pp. 57–74). New York: Garland.

Elliott, D. M., & Briere, J. (1992). Sexual abuse trauma among professional women: Validating the Trauma Symptom Checklist (TSC-40). *Child Abuse & Neglect, 17* 391–398.

* Field, N. P., Classen, C., Butler, L. D., Koopman, C., Zarcone, J., & Spiegel, D. (2001). Revictimization and information processing in women survivors of childhood sexual abuse. *Journal of Anxiety Disorders, 15*, 459–469.

Finkelhor, D., & Browne, A. (1985). The traumatic impact of child sexual abuse: A conceptualization. *American Journal of Orthopsychiatry, 55*, 530–541.

Fisher, R. A. (1935). The logic of inductive inference. *Journal of the Royal Statistical Society*, *98*, 39-82.

Freeman, G. H. (1973). Statistical methods for the analysis of genotype-environment interactions. *Heredity, 31*, 339–354.

* Frenkel, E. A. (2002). Validating an interpersonal model of revictimization after child sexual abuse. Ph.D. dissertation, Miami University, United States -- Ohio. Retrieved February 2, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT 3057223).

Glass, G. (1976). Primary, secondary and meta-analysis of research. *Educational Researcher, 5*, 3-8.

Gold, S. R., Milan, L. D., Mayall, A., & Johnson, A. (1994). A cross-validation study of the trauma symptom checklist: The role of mediating variables. *Journal of Interpersonal Violence, 9*, 12–26.

Gold, S. R., Sinclair, B. B., & Balge, K. A. (1999). Risk of sexual revictimization: A theoretical model. *Aggression and Violent Behavior, 4*(4), 457-470.

Goodman, L. A., Koss, M. P., & Russo, N. F. (1993). Violence against women: Physical and mental health effects. Part I: Research findings. *Applied and Preventive Psychology, 2,* 79–89.

Grauerholz, L. (2000). An ecological approach to understanding sexual revictimization: Linking personal, interpersonal, and sociocultural factors and processes. *Child Maltreatment, 5* (1), 5–17.

Gwandure, C. (2007). Sexual assault in childhood: Risk HIV and AIDS behaviours in adulthood. *AIDS Care*, *19*, 1313-1315.

Hall, J. M., & Powell, J. (2000). Dissociative experiences described by women survivors of childhood abuse. *Journal of Interpersonal Violence, 15*, 184–204.

Hartman, C. R., & Burgess, A. N. (1993). Treatment of victims of rape trauma. In J. P. Wilson & B. Raphael (Eds.), *International Handbook of Traumatic Stress Syndromes* (pp. 507-516). New York: Plenum.

Hartt, J., & Waller, G. (2002). Child abuse, dissociation and core beliefs in bulimic disorders. *Child Abuse and Neglect, 26*, 923–938.

Haskell, L. (1999). Revictimization in women's lives: An empirical and theoretical account of the links between child sexual abuse and repeated sexual violence. *University of Toronto (Canada),* Retrieved February 4, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT NQ41072).

Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. Orlando: Academic Press.

Heise, L. (1998). Violence against women: An integrated, ecological framework. *Violence Against Women*, *4*, 262-290.

Herman, J. L. (1992). *Trauma and recovery*. Cambridge: Basic Books.

* Hunt, J. B. (1998) The process of revictimization for women with sexual abuse histories. dissertation, *University of Massachusetts Amherst*, United States -- Massachusetts. Retrieved February 2, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT 9909173).

Irwin, H. J. (1999). Violent and nonviolent revictimization of women abused in childhood. *Journal of Interpersonal Violence, 14*(10)*,* 1095-1110.

Janet, P. (1920). *The Major Symptoms of Hysteria*. New York: Macmillan.

Kessler, B. L., & Bieschke, K. J. (1999). A retrospective analysis of shame, dissociation, and adult victimization in survivors of childhood sexual abuse. *Journal of Counseling Psychology, 3* (46)*,* 335-341.

Kluft, R. P. (1993). Basic principles in conducting the psychotherapy of multiple personality disorder. In R.P. Kluft & C.G. Fine (Eds.), *Clinical perspectives on multiple personality disorder* (pp. 19-50). Washington, DC: American Psychiatric Press.

Koverola, C., Proulx, J., Battle, P., & Hanna, C. (1996). Family functioning as predictors of distress in revictimized sexual abuse survivors. *Journal of Interpersonal Violence, 11*, 263–280.

Light, R. J., & Pillemer, D. B. (1984). *Summing up: The science of reviewing research*: Harvard University Press.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: SAGE Publications.

Littell, J.H., Corcoran, J., & Pillai, V. (2008). *Systematic reviews and meta-analysis*. New York: Oxford University Press.

Littell, J. H., Popa, M., & Forsythe, B. (2005). Multisystemic Therapy for social, emotional, and behavioral problems in youth aged 10–17 (Cochrane Review). In: *The Cochrane Database of Systematic Reviews, 4,* 2005. Chichester, UK : John Wiley & Sons.

Macy, R. J. (2007). A coping theory framework toward preventing sexual revictimization. *Aggression and Violent Behavior, 12*(2), 177-192.

Macy, R. J. (2007). Sexual revictimization: Implications for social work practice. *Families in Society, 88*(4), 627-636.

Maker, A. H., Kemmelmeier, M., & Peterson, C. (2001). Child sexual abuse, peer sexual abuse, and sexual assault in adulthood: A multi-risk model of revictimization. *Journal of Traumatic Stress*, *14*, 351-368.

Mandoki, C. A., & Burkhart, B. R. (1989). Sexual victimization: Is there a vicious cycle? *Violence and Victims*, *4*, 179–190.

McShane, J., & Zirkel, S. (2008). Dissociation in the Binge--Purge Cycle of Bulimia Nervosa. *Journal of Trauma & Dissociation*, *9*(4), 463-479.

McWilliams, N. (1994). *Psychoanalytic diagnosis*. New York: Guilford Press.

Meadows, E. A., Jaycox, L. H., Orsillo, S. M., & Foa, E. B. (1997, November). *The impact of assault on risk recognition in ambiguous situations*. Paper presented at the 29th Annual Meeting of the Association for the Advancement of Behavior Therapy, Washington, DC.

Messman, T. L., & Long, P. J. (1996). Child sexual abuse and its relationship to revictimization in adult women: A review. *Clinical Psychology Review, 16* (5), 397–420.

Messman, T. L., & Long, P. J. (2000). Child sexual abuse and revictimization in the form of adult sexual abuse, adult physical abuse, and adult psychological maltreatment. *Journal of Interpersonal Violence, 15* (5), 489–502.

Messman-Moore, T. L., & Long, P. J. (2003). The role of childhood sexual abuse sequelae in the sexual revictimization of women: An empirical review and theoretical reformulation. *Clinical Psychology Review*, *23* (4), 537–571.

Messman-Moore, T. L., & Brown, A. L. (2004). Child maltreatment and perceived family environment as risk factors for adult rape: Is child sexual abuse the most salient experience? *Child Abuse & Neglect, 28*(10), 1019-1034.

Morgan, C. A., Southwick, S. M., Hazlett, G., Rasmusson, A., Hoyt, G., Zimolo, Z., et al. (2004). Relationships among plasma dehydroepiandrosterone sulfate and cortisol levels, symptoms of dissociation, and objective performance in humans exposed to acute stress. *Archives General Psychiatry, 61*, 819–825.

Mullen, P. E., Romans-Clarkson, S. E., Walton, V. A., & Herbison, G. P. (1988). Impact of sexual and physical abuse on women's mental health. *The Lancet*, 841–845.

Noll, J. G. (2005). Does childhood sexual abuse set in motion a cycle of violence against women? What we know and what we need to learn. *Journal of Interpersonal Violence*, *20*(4), 455-462.

Ogawa, J. R., Sroufe, A., Weinfield, N. S., Carson, E. A., & Egeland, B. (1997). Development and the fragmented self: Longitudinal study of dissociative symptomatology in a nonclinical sample. D*evelopment and Psychopathology, 9*, 855-879.

O'Rourke, K. (2006). An historical perspective on meta-analysis: Dealing quantitatively with varying study results. *British Medical Journal, 3*, 1243-1246.

Orwin, R. (1983). A fail-safe N for effect size. *Journal of Educational Statistics*, *8*, 147-159.

Paolucci, E., Genuis, M., & Violato, C. (2001). A meta-analysis of the published research on the effects of child sexual abuse. *Journal of Psychology*, *135*(1), 17-36.

Pearson, K. (1904). Report on certain enteric fever inoculation statistics. *British Medical Journal*, *3*, 1243-1246.

* Pearson, M. L. (1995). Trauma and dissociation. M.Sc. dissertation, Acadia University (Canada), Canada. Retrieved February 16, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT MM00944).

Perera, R., & Heneghan, C. (2008). Interpreting meta-analysis in systematic reviews. *Evidence-Based Medicine*, *13*, 67-69.

Polusny, M. A., & Follette, V. M. (1995). Long-term correlates of child sexual abuse: Theory and review of the empirical literature. *Applied and Preventative Psychology, 4*, 143–166.

Putnam, F. W. (1989). *Diagnosis and treatment of multiple personality disorder*. New York: Guilford.

Putnam, F. (2003). Ten-year research update review: Child sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*, 269-278.

R Development Core Team (2005). R: A language and environment for statistical computing, reference index (version 2.2.1). R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org.

Rhoades, H. M., Overall J. E., & McLaughlin, E. J. (1991). Factor analysis of the diagnostic inventory of personality and symptoms. *Journal of Clinical Psychology, 47*(1), 75-79.

Rind, B., Tromovitch, P., & Bauserman, R. A. (1998). Meta-analytic examination of assumed properties of child sexual abuse using college samples. *Psychological Bulletin, 124*, 22-53.

Roediger, H. L., Bergman, E. T. (1998). The controversy over recovered memories. *Psychology, Public Policy, and Law*, *4*, 1091-1109.

Rodriguez-Srednicki, O. (2001). Childhood sexual abuse, dissociation and adult self-destructive behavior. *Journal of Child Sexual Abuse, 10*, 75–90.

Roodman, A., & Clum, G. (2001). Revictimization rates and method variance: A meta-analysis. *Clinical Psychology Review*, *21*, 183–204.

Rosenthal, R. (1987). *Judgment studies: Design, analysis, and meta-analysis*. Cambridge, England: Cambridge University Press.

Rosenthal, R., & Rosnow, R. L. (2008). *Essentials of behavioral research: Methods and data analysis* (3rd ed.). New York: McGraw Hill.

Rosnow, R. L., & Rosenthal, R. (1996). Computing contrasts, effect sizes, and counternulls on other people's published data: General procedures for research consumers. *Pyschological Methods, 1,* 331-340.

Rozee, P. D., & Koss, M. P. (2001). Rape: A century of resistance. *Psychology of Women Quarterly, 25,* 295–311.

Rubin, A., & Babbie, E. R. (2008). *Research Methods for Social Work*. Belmont, CA: Thomson Brooks/Cole.

Russell, D. E. H. (1984). *Sexual exploitation: Rape, child sexual abuse, and workplace harassment.* Beverly Hills, CA: Sage.

Sackett, D. L., Rosenberg, W. M., Gray, J. A. M., Haynes, R. B., & Richardson, W. S. (1995). Evidence-based medicine: What it is and what it isn't. *British Medical Journal (Clinical research edition), 312*(7023), 71-72.

* Sandberg, D. A. (1995). Dissociation as a risk factor for sexual victimization in a sample of female college students. Ph.D. dissertation, Ohio University, United States -- Ohio. Retrieved February 2, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT 9609493).

Sandberg, D. A., Matorin, A. I., & Lynn, S. J. (1999). Dissociation, posttraumatic symptomatology and sexual revictimization: A prospective examination of mediator and moderator effects. *Journal of Traumatic Stress, 12*(1)*,* 127-138.

Sanders, B. E. (1995). The measurement of psychological maltreatment: Early data on the child abuse and trauma scale. *Child Abuse & Neglect, 19*, 315-323.

Sandfort, T., Brongersma, E., & Van Naerssen, A. (1990). Man-boy relationships: Different concepts for a diversity of phenomena. *Journal of Homosexuality*, *20*(1-2), 5-12.

Scholz, F. W. (1983). Combining independent p-values. In P. Bickel, K. A. Doksum, & J. R. Hodges, Jr. (Eds.), *A Festschrift for Erich L. Lehmann*. Wadsworth, Belmont, CA.

Shaw, I. F. (2003). Cutting edge issues in social work research. *British Journal of Social Work*, *33*(1), 107–16.

Simons, R. L., & Whitbeck, L. B. (1991). Sexual abuse as a precursor to prostitution and victimization among adolescent and adult homeless women. *Journal of Family Issues, 12*(3)*,* 361–379.

Smith, M. L., & Glass, G. V. (1977). Meta-analysis of psychotherapy outcome studies. *American Psychology, 32*, 752-760.

Smith, P. H., White, J. W., & Holland, L. J. (2003). A longitudinal perspective on dating violence among adolescent and college-age women. *American Journal of Public Health, 93*(7), 1104-1109.

Smith, S. R., & Carlson, E. B. (1996). Reliability and validity of the Adolescent Dissociative Experiences Scale, *Dissociation, 9*, 125–129.

Song, F., Khan, K. S., Dinnes, J., & Sutton, A. J. (2002). Asymmetric funnel plots and publication bias in meta-analyses of diagnostic accuracy. *International Journal of Epidemiol*ogy, *31*, 88–95.

Spaccarelli, S. (1994). Stress, appraisal, and coping in child sexual abuse: A theoretical and empirical review. *Psychology Bulletin, 116*, 340–362.

SPSS (2007). SPSS for Mac (Version 16.0) [Computer software]. Chicago: SPSS Inc.

Summit, R. (1983). The Child Sexual Abuse Accommodation Syndrome. *Child Abuse and Neglect*, 7, 177 – 93.

Swanston, H. Y., Nunn, K. P., Oates, R. K., Tabbutt, J. S., & O'Toole, B. I. (1999). Hoping and coping in young people who have been sexually abused. *European Child Adolescent Psychiatry*, *8*, 134-42.

Tang, J. L., & Liu, J. L. (2000). Misleading funnel plot for detection of bias in meta-analysis. *Journal of Clinical Epidemiology*, *53*, 477–484.

Tebbutt, J., Swanston, H., Oates, R. K., & O'Toole, B. I. (1997). Five years after child sexual abuse: Persisting dysfunction and problems of prediction. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*, 330-339.

Thomas, P. M. (2003). Protection, dissociation, and internal roles: Modeling and treating the effects of child abuse. *Review of General Psychology, 7*(4), 364-380.

Tippett, L. H. C. (1931). *The Methods of Statistics* (1st ed.). London: Williams and Norgate.

Tjaden, P., & Thoennes, N. (2006). *Extent, nature, and consequences of rape victimization: Findings from the national violence against women survey*. Washington, DC: National Institute of Justice.

Tourigny, M., Gangé, M., Joly, J., & Chartrand, M. (2006). Prévalence et cooccurrence de la violence envers les enfants dans la population québécoise. *Canadian Journal of Public Health, 97*(2), 109–113.

Urquiza, J., & Goodlin-Jones, B. L. (1994). Child sexual abuse and adult revictimization with women of color. *Violence Victims, 9*, 223–232.

* Van Benschoten, S. C. (1995). The revictimization of adult women reporting a history of childhood sexual abuse. Ph.D. dissertation, Georgia State University, United States -- Georgia. Retrieved February 16, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT 9535254).

Van Bruggen, L. K., Runtz, M. G., & Kadlec, H. (2006). Sexual revictimization: The role of sexual self-esteem and dysfunctional sexual behaviors. *Child Maltreatment, 11*, 131–145.

Vincent, K. R. (1985). *Diagnostic Inventory of Personality and Symptoms (DIPS)*. Richland, WA: Pacific Psychological.

Vincent, K. R., & Duthie, B. (1986). Factor structure of the Diagnostic Inventory of Personality and Symptoms in a private psychiatric hospital population. *Journal of Clinical Psychology, 42*, 312-314.

Walker, E. A., Katon, W. J., Hanson, J., Harrop-Griffiths, J., Holm, L., Jones, M. L., et al. (1992). Medical and psychiatric symptoms in women with childhood sexual abuse. *Psychosomatic Medicine, 54*, 658–664.

Wang, P. H., Lau, J., & Chalmers, T. C. (1993). Meta-analysis of effects of intensive blood-glucose control on late complications of type I diabetes. *Lancet, 341*, 1306-1309.

* Whetsell, M. S. (1990). The relationship of abuse factors and revictimization to the long-term effects of childhood sexual abuse in women. *University of Kentucky,* United States -- Kentucky. Retrieved February 2, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT 9034199)

Whiffen, V. E., & MacIntosh, H. B. (2005). Mediators of the link between childhood sexual abuse and emotional distress - A critical review. *Trauma Violence & Abuse, 6*(1), 24-39.

Whitehead, A. (2002). *Meta-analysis of controlled clinical trials*. Chichester, UK: Wiley.

Widoma, C. S., Czaja, S. J., & Dutton, M. A. (2008). Childhood victimization and lifetime revictimization. *Child Abuse & Neglect*, *32*(8), 785-796.

Wilbur, C. B. (1985). The Effect of child abuse on the psyche. In Childhood Antecedents of Multiple Personality. R.P. Kluft (Ed). Washington, DC: American Psychiatric Association.

Wilson, A. E., Calhoun, K. S., & Bernat, J. A. (1999). Risk recognition and trauma-related symptoms among sexually revictimized women. *Journal of Consulting and Clinical Psychology, 67*(5), 705-710.

Wind, T. W., & Silvern, L. E. (1992). Type and extent of child abuse as predictors of adult functioning. *Journal of Family Violence*, *7*, 261–281.

Wyatt, G., Guthrie, D., & Notgrass, C. (1992). Differential effects of women's child sexual abuse and subsequent sexual revictimization. *Journal of Consulting and Clinical Psychology*, *60*, 167–173.

Yates, F., & Cochran, W. G. (1938). The analysis of groups of experiments. *Journal of Agricultural and Science, 28*, 556-80.

Yeater, E. A., & O'Donohue, W. (2002). Sexual revictimization: The relationship among knowledge, risk perception, and ability to respond to high-risk situations. *Journal of Interpersonal Violence*, *17*(11), 1135–1144.

Zanarini, M. C., Yong, L., Frankenburg, F. R., Hennen, J., Reich, D. B., Marino, M. F., et al. (2002). Severity of reported childhood sexual abuse and its relationship to severity of borderline psychopathology and psychosocial impairment among borderline inpatients. *The Journal of Nervous and Mental Disease, 190*(6), 381-387.