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The cycle of healing - dissociation and attachment during treatment of CSA survivors

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Abstract

Childhood sexual abuse (CSA) is an extreme traumatic event associated with numerous long lasting difficulties and symptoms (e.g., Herman, 1992). These include, among other things, the impediment of basic interpersonal structures of attachment (Rumstein-McKean & Hunsley, 2001), as well as impairment of mental integration manifested in dissociation (Van Den Bosch, Verheul, Langeland, & Van Den Brink, 2003). Theoretically, attachment insecurities and dissociation are closely linked, since dissociation is generated as a way to resolve the conflicted attachment demands faced by the abused child (e.g., Liotti, 1992). Nevertheless, the directionality of association between attachment insecurities and dissociation during treatment of adult CSA survivors remains largely uninvestigated. Filling this gap, the present prospective study assessed female adult survivors of CSA who were outpatients at four treatment centers in Denmark (n=407), at the start of treatment (T1), 6 months after starting treatment (T2) and 12 months after starting treatment (T3). Results indicated that both attachment insecurities and dissociation reduced over time during treatment. Elevated attachment insecurities were associated with elevated dissociation at each of the measurements. Moreover, there was a reciprocal association between attachment avoidance and dissociation during treatment. Low levels of attachment avoidance predicted a decline in dissociation and vice versa. Findings suggest that treatment creates a cycle of healing in which rehabilitation of attachment fosters reintegration, which in turn deepens the restoration of attachment.

Keywords: Childhood sexual abuse, attachment, dissociation, treatment, trauma

Introduction

Childhood sexual abuse (CSA) is defined as any sexual act involving a child that is intended to provide sexual gratification to a parent, caregiver, or other individual who has responsibility for the child. Sexual abuse includes activities such as fondling a child's genitals, penetration, incest, rape, sodomy, and indecent exposure (American Psychiatric Association, 2013). Research studies have reported varying rates of adolescent and childhood sexual abuse (CSA), with reports ranging from 4% to 50% (Paolucci, Genuis, & Violato, 2001) with a higher prevalence among girls compared to boys (e.g., Pereda, Guilera, Forns, & Gómez-Benito, 2009). In a Danish youth probability sample, 2.6% of girls and 0.5% of boys reported sexual abuse in childhood (Elklit, 2002).

CSA is an extreme interpersonal trauma that might lead to long term implications. CSA has been associated with a range of mental health problems in adulthood, such as posttraumatic stress disorder (PTSD), depression, anxiety, somatoform disorder, alcohol and drug abuse, borderline symptomatology (Cutajar et al., 2010; Fergusson, Boden, & Horwood, 2008; Paolucci et al., 2001), sexual disorders (Noll, Trickett, & Putnam, 2003), sexual risk behavior (e.g., Arriola, Louden, Doldren, & Fortenberry, 2005), and revictimization (e.g., Arata, 2002).

Furthermore, according to various researchers and clinicians (e.g., Herman, 1992; Herman & van der Kolk, 1987) exposure to chronic trauma, such as CSA, might produce long-lasting difficulties and break down basic structures of the victim's self. Thus, treatment for CSA survivors is often challenging and tends to be multimodal and transtheoretical in order to address the multiplicity of problems and issues presented by these individuals (e.g., Herman, 1992). The present longitudinal study follows adult Danish women who are CSA survivors, during treatment, and

aims to investigate the relationship between two well documented difficulties associated with CSA: dissociation and attachment insecurities.

Dissociation

Dissociation is defined as the, "lack of normal integration of thoughts, feelings and experiences into the stream of consciousness and memory" (Bernstein & Putnam, 1986, p. 727). Dissociative defenses are often employed in the presence of a psychological need to escape unbearable pain in the face of trauma and abuse (e.g., Chu & Dill, 1990). Sexual abuse during childhood is thus highly associated with the use of dissociation (e.g., Chu & Dill, 1990; Putnam, 1993).

Research provides an abundance of evidence regarding the link between CSA and dissociation among both clinical (Chu & Dill, 1990) and nonclinical samples (Briere & Runtz, 1988), indicating that a history of CSA is associated with elevated dissociation. Furthermore, the prevalence of dissociative symptoms among CSA survivors were found to be higher when compared to survivors of other forms of trauma (Van Den Bosch et al., 2003).

Although dissociation may initially serve as a defense mechanism for trauma survivors, it often becomes embedded in their mental processes long after the traumatic exposure, shaping the victim's way of being in the world (Classen, Koopman, & Spiegel, 1993). However, the reliance on posttraumatic dissociation has negative implications, such as disturbances of memory and fragmentation of the self (Putnam, 1993). Furthermore, the dissociated experiences often arise and are re-experienced in the forms of dreams, flashbacks, and flooding of original feelings and sensations (Chu & Dill, 1990). Hence, reducing dissociation and fostering integration is one of the central aims of treatment for trauma survivors (e.g., Herman, 1992). Former studies among adult CSA survivors point to positive effects of treatment with

regard to dissociation, manifested in decreasing dissociation resulting from various kinds of clinical interventions (e.g., Cloitre, Koenen, Cohen, & Han, 2002; Resick, Suvak, Johnides, Mitchell, & Iverson, 2012).

Attachment

While typically early relationships act as a "safe haven" and as a source of protection for the child, interactions involving sexual abuse are the cause of pain, terror or neglect for the sexually abused child. The child experiences sexual abuse by a caretaker who is alternately nurturing and cruel, or neglects the child while also not preventing the abuse. These harmful interactions might hinder the most basic internalized interpersonal structures, such as attachment (Herman, 1992; Herman & van der Kolk, 1987).

Attachment theory offers that early childhood experiences regarding the interaction with the main caretakers (attachment figures) shape basic models (internalized working models) of the self and of others. Experiences of support, nurturance, and consistency foster the development of secure attachment that reflects positive models of the self and of others. On the other hand, negative basic interactions can lead to attachment insecurities (e.g., Bowlby, 1973).

Although Bowlby's (1973) research focused primarily on infants and young children, he emphasized the importance of the attachment system across the life span (Bowlby, 1988). Adult attachment researchers typically refer to two dimensions of attachment: *anxiety* and *avoidance* (e.g., Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). The first dimension, “attachment anxiety,” reflects the degree to which individuals worry that significant others will be unavailable in times of need (see review by Mikulincer & Shaver, 2007). Anxious individuals often use "hyperactivating" strategies of attachment and show energetic, insistent attempts to

achieve care, support, and love from relationship partners, as a means of regulating distress (Mikulincer & Shaver, 2003). The second dimension, “attachment avoidance,” reflects the extent to which individuals are suspicious of others' goodwill and strive to maintain behavioral independence and emotional distance from partners. Avoidant individuals often rely on "deactivating strategies" such as denial of attachment needs and suppression of attachment-related thoughts and emotions (Mikulincer & Shaver, 2003). Those scoring low on both dimensions are considered to be secure in their attachments.

Adults who are survivors of CSA are often characterized by attachment insecurities. Research indicates that CSA survivors show higher levels of attachment insecurities compared to non-abused adults, even years after the trauma (e.g., Rumstein-McKean & Hunsley, 2001). Further, adult survivors of CSA particularly tend to hold disorganized (or fearful) attachment style (e.g., Alexander, 1993; Elklit, 2009), which reflects elevated levels of both anxiety attachment and avoidant attachment, resulting in a lack of organization of attachment behavior.

As attachment security is viewed as a determinant of psychological resilience associated with coping and psychological well-being (e.g., Mikulincer & Shaver, 2007), the importance of rehabilitating the attachment orientation of CSA survivors during treatment is emphasized. Yet, while there is an abundance of evidence regarding positive changes in attachment as a result of therapy in various clinical populations (e.g., Travis, Bliwise, Binder, & Horne-Moyer, 2001), to the best of our knowledge, only one study, conducted among the current sample of adult CSA survivors, investigated the change in attachment during treatment. This study indicated similar trends of the positive effects of therapy, manifested in decreasing attachment insecurities over time (Elklit, 2009).

Dissociation and Attachment

The theoretical literature indicates that dissociation is linked with elevated attachment insecurities and disorganized attachment in particular (e.g., Coe, Dalenberg, Aransky, & Reto, 1995). According to theory, both neglect and frightening or frightened behavior from the primary caregiver lead to the child's dissociation as a way to resolve the dilemma of attachment (Liotti, 1992). As no set of behaviors on the part of the child is able to consistently elicit appropriate responsiveness from the primary caregiver, the child dissociates and develops disorganized attachment (e.g., Main & Solomon, 1990), which constructs multiple, incompatible, working models of the self and the attachment figure (Liotti, 1992, 1999; Main, 1991).

Research provides evidence of the association between dissociation and attachment, and points to elevated dissociation among CSA adult survivors with fearful (disorganized) attachment compared to survivors with other patterns of attachment (Anderson & Alexander, 1996). However, as former studies were cross-sectional, the directionality of the relationship between attachment and dissociation has not been clearly elucidated. Moreover, the nature of association between dissociation and attachment among CSA survivors during treatment has not been investigated.

The literature implies that the linkage between attachment and dissociation during psychotherapy may be bidirectional and includes both directions of effects: the effect of attachment on dissociation, and the effect of dissociation on attachment. On the one hand, attachment may predict changes in levels of dissociation over time during treatment. Attachment, which is a personal resource, might affect the CSA survivor’s capacity to cope with the traumatic material (Mikulincer & Shaver, 2003)

that becomes prominent during treatment. Thus, one might hypothesize that survivors with higher attachment insecurities would suffer from difficulties in coping with emotional distress during treatment and would tend to exhibit elevated usage of dissociative mechanisms, compared to survivors with low attachment insecurities. Furthermore, one could speculate that rehabilitating attachment during therapy will be followed by a decrease in the use of dissociation.

At the same time, levels of dissociation may also predict changes in attachment during treatment. CSA survivors who suffer from low levels of dissociation may be less vulnerable to negative and abusive interpersonal experiences at present, as they have a higher capacity to protect themselves and correctly identify threat and danger (Classen et al., 1993). Moreover, decreased use of dissociative defenses as a way to avoid threatening interpersonal situations, may enable the correction of negative internalized perceptions regarding relationships as a result of the therapeutic relationship. In that way, dissociation may shape the rehabilitation of attachment during treatment.

Investigating the directionality of the relationship between attachment insecurities and dissociation over time during treatment has theoretical as well as clinical importance. Examining this issue might reveal whether a change in attachment might act as a facilitating factor for integration and/or whether a decrease in dissociation during therapy has a pivotal role in rehabilitating the survivors' interpersonal realm. This exploration could contribute to improving treatment for adult survivors of CSA.

The present longitudinal study aims to fill this gap in knowledge by investigating the associations between attachment insecurities and dissociation among

female Danish survivors of CSA at the start of treatment (T1), 6 months after starting treatment (T2) and 12 months after starting treatment (T3).

Given the existing theory and empirical research, we hypothesized that: (1) there would be significant correlations between attachment insecurities and dissociation among adult survivors of CSA at the three time measurements – the higher the attachment insecurities the higher the dissociation; (2) there would be a significant decrease in attachment insecurities and dissociation over time; and (3) attachment insecurities and dissociation would have a bidirectional association over time, i.e., attachment insecurities at T1 and T2 would predict a change in dissociation between T1 and T2 and between T2 and T3, respectively, and vice versa.

Methods

Participants

Participants in the study were all women who were sexually abused during childhood (n =407) and were outpatients at four treatment centers in Denmark that treat individuals who are CSA survivors. Exclusion criteria were (a) an active alcohol or drug abuse; (b) psychotic state; (c) severe self-destructive behavior; (d) current treatment elsewhere; and (e) a personality disorder with dominant perpetrating traits. Excluded clients were referred to either specialized institutions or to the affiliated volunteer centers.

The present study uses data from the three measurements carried out at the start of treatment (T1), 6 months after starting treatment (T2) and 12 months after starting treatment (T3). A small group of clients withdrew from the treatment within the first month, but following this period most clients were consistent attendees. A number of therapies were halted due to hospitalization or other serious life events.

The recruitment rate was 100% due to the fact that the assessment was an integrated part of the treatment planning and monitoring of the centers.

Most of the participants (98%) had experienced CSA before the age of 15. The mean age of the sample was 35.85 years (*SD* = 10.8; range 15 to 70 years), and all participants were Caucasian. Fifty-one percent were married or cohabiting. The average length of education was 13.2 years (*SD* = 3.3; range 7 to 24 years). Almost two thirds of the participants (61.3%) had children. Correlations between demographics, dissociation and attachment insecurities are presented in Table 1. As can be seen, the correlations between age, employment status and number of children and dissociation and attachment insecurities were non-significant. The only exception was in regards to the negative correlation between number of children and attachment anxiety at T1.

Procedure

According to Herman (1992) the treatment strategy for CSA survivors relies on three phases; stabilization, trauma processing, and recovery. A phase-oriented treatment acknowledges the vulnerabilities that characterize many of the CSA survivors who have problems with trust and difficulties in emotional regulation. This step-based treatment is also central to the "Skills Training in Affective and Interpersonal Regulation (STAIR)" (Cloitre et al., 2002), where interpersonal and emotional skills are trained before exposure begins.

Treatment for CSA survivors has recently become a focus for the government in Denmark, resulting in three regional treatment centers being established. Each treatment center collaborates closely with other centers that are run by volunteers. The treatment is carried out by psychologists under supervision. All of the centers complete a thorough assessment before treatment begins and repeat it every six

months. There is no limit to the number of sessions and the treatment is free. All of the survivors receive weekly therapy; most of them on an individual basis. There is no common treatment manual. However, in the planning of the therapy all of the centers use the personality-oriented approach to treatment based on the work of Millon (1999). This treatment approach focuses on emotional regulation, relationship issues and several other treatment modalities. The most established center has published the treatment guidelines for this approach to be used in all of the centers. Typically, the client will stay in treatment for about 1½ years, and as the therapy progresses it may be relevant to make changes to the treatment modalities.

This study examined the effects of the treatment within the new centers. Some of the treatment centers existed before the present structure. We decided to incorporate the treatment data that originated from before the new structure was established. One former center ran only treatment groups, while the other centers ran groups occasionally.

All participants were informed that they would be asked to fill out a number of questionnaires during their second session (T1), which were used to guide the therapeutic process. The assessments were repeated at intervals of six and twelve months (T2 and T3). The study was approved by the Danish Data Agency and the IRB of the University of Southern Denmark.

Measures

The CSA group was asked questions about their abuse history, such as onset, duration, relationship to the perpetrator, types of sexual acts they were exposed to, legal consequences for perpetrator, and age of abuse disclosure. Descriptions of sexual victimization that did not fit into the respective items of the questionnaire regarding types of sexual abuse were registered in the “other types of sexual assaults”

item. Participants were asked questions about exposure to 11 other traumatic events, modeled after the National Comorbidity Survey (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). The participants were also asked if they had experienced any serious life events during the year prior to the present study.

The Trauma Symptom Checklist (TSC-33) was originally created by Briere and Runtz (1989) as a measure of traumatic impact following CSA. The TSC-33 was originally developed to assess the long-term impact of rape and child sexual abuse. As the TSC-33 is also sensitive to physical abuse, Briere and Runtz (1989) suggest that the TSC-33 could be applied with regard to a variety of traumatic experiences. According to Elklit (1990), this is reasonable, as the items cover symptoms that are associated with various psychological states, and highly overlap with the Symptom Checklist (SCL-90; Derogatis & Coons, 1993) and the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). In this study only the dissociation subscale was used. The dissociation subscale has seven items. The items are answered on a 4-point Likert scale from 'never' (1) to 'very often' (4). The scale was found to have good reliability in all three measurements (.72, .73, .83 for T1, T2 and T3, respectively). The TSC-33 has previously been found to be internally consistent, both in subscales and total scores, and has good discriminant validity (Briere & Runtz, 1989; Elklit, 1990).

The Revised Adult Attachment Scale (RAAS; Collins, 1996; Collins & Read, 1990) is based on attachment theory (Bowlby, 1988). The scale consists of 18 items relating to how respondents act and feel in relationships with others. Items are scored on a 5-point Likert scale ranging from 1 (*is not true for me*) to 5 (*is very true for me*). The scale is two-dimensional: (1) items on closeness and dependency are merged into one dimension which reflects the degree to which individuals tend to

avoid (an avoidant attachment dimension) intimacy and interdependence with others (Collins, 1995, unpublished research note); and (2) an anxious attachment dimension. One should note that low scores on the avoidance subscale represent high avoidance, while low scores on the anxiety subscale represent low anxiety. The reliability and validity of the scale is good (Collins & Read, 1990). In the present study both attachment dimensions had acceptable reliability in all three measurements (for avoidance, .76, .84, .76 ; for anxiety .62, .83, .84 at T1, T2 and T3, respectively)

Analysis Plan

To investigate the first hypothesis regarding concurrent associations between attachment insecurities and dissociation, we conducted Pearson correlations between the variables at the three time measurements.

To investigate the second hypothesis regarding the decrease in attachment insecurities and dissociation over time, two repeated measure ANOVAs were conducted. To examine the change of dissociation across time, the first repeated measure ANOVA included time of measurement (T1, T2, T3) as a within subject repeated factor, and dissociation as a dependent variable. To examine the change of attachment insecurities across time, the second repeated measure ANOVA included time of measurement (T1, T2, T3) and type of attachment dimension (anxiety vs. avoidance) as within subject repeated factors, and the attachment score as a dependent variable.

To investigate the third hypothesis regarding the bidirectional association between dissociation and attachment insecurities over time, an auto-regressive cross-lagged modeling (ARCL; Anderson 1960) was conducted. This form of analysis provides an indicator of temporal precedence in the absence of an experimental design. Autoregressive cross-lagged designs allow for simultaneous assessment,

enabling the examination of whether an earlier measurement of dissociation predicts later measures of attachment insecurities and vice versa. This modeling strategy incorporates two main components. First, later measures of a construct are predicted by earlier measures of the same construct, thus giving rise to the “autoregressive” term. Second, the "cross-lagged" component is that in which later measures of a construct are predicted by earlier measures of other constructs. For example, the measures of attachment insecurities could be incorporated indicating that later measures of dissociation are a function of an intercept, the weighted contribution of a prior measure of dissociation, the weighted contribution of a prior measure of attachment insecurities, and a random error term.

This model was analyzed with AMOS statistics, Version 22, via structural equation modeling (SEM). Specifically, we used AMOS statistics and estimated the model's fit by using several fit indices. A model is judged as fitting well if the comparative fit index (CFI), that considers sample sizes, and normed-fit index (NFI) are greater than .95, and as adequate fit if these indices are greater than .90 and the root mean square error of approximation (RMSEA) has to be equal or lower than .08 (Bollen & Curran, 2006). We computed the chi square test, but as it is sensitive to sample size (e.g., Kline, 1998), we used the ratio of chi square to degrees of freedom. Values between 1 and 5 indicated a satisfactory fit between the theoretical model (Kline, 1998).

Handling Missing Data

Substantial attrition occurred from T1 to T2 and T3. Overall 7.4-71.4% of the data were missing across waves. To decide whether the data had missing values in a pattern that was random, we conducted analyses of differences between these groups in all of the variables, using Little’s Missing Completely at Random (MCAR) test

(Collins et al., 2001). The analysis revealed that the data were not missing completely at random, chi square (202) = 296.492, *p*=.000. Supplementary analyses revealed that women with missing data regarding attachment anxiety at T2 and T3, endorsed significantly higher attachment avoidance at T1 (t= -2.5, p=.029) as well as higher dissociation at T2 (t= -2.4 p=.025), than women without missing data.

As the mechanism of missingness was unknown and there were indications that the missingness was related to the observed data, we assumed that the data were missing at random (MAR). If there is no serious proof of non-randomness, erroneous assumption of MAR often has minor impact (Collins et al., 2001). Missing data were handled with maximum likelihood (ML) via the SPSS 21 and AMOS 21 programs. Compared to conventional methods, such as arithmetic mean, listwise or pairwise deletion, and as the current data is longitudinal, ML method was recommended as an optimal method for attrition of participants over time (Collins et al., 2001) to avoid biased data (Schafer & Graham, 2002). This recommended procedure uses all the available data relevant for each participant, because missing information can be then partially recovered from earlier or later waves. Longitudinal modeling by ML of missing responses is very effective if it is conducted under a longitudinal model that borrows information across waves that can serve as auxiliary variables (Schafer & Graham, 2002). This study utilized variables across waves to increase the likelihood for optimal estimations of missing values. The final sample (after ML was implemented) comprised of 407 women who had been sexually abused.

Results

Concurrent Associations between Attachment Insecurities and Dissociation

Pearson correlations between the study's variables revealed positive correlations between attachment anxiety and dissociation at all waves of measurement

(see Table 1). The exceptions were non-significant correlations between attachment anxiety at T1 and dissociation at T2 and T3. The higher the levels of attachment anxiety, the higher the levels of dissociation. In the same manner, analyses revealed significant correlations between attachment avoidance and dissociation at all waves of measurement. The higher the attachment avoidance, the higher the levels of dissociation.

Trajectories of Dissociation and Attachment Insecurities Over Time

To investigate change in attachment insecurities and dissociation over time, repeated measure ANOVAs were conducted (see Table 2). Analysis for dissociation, revealed a significant effect for time. The levels of dissociation decreased over time. Analysis for attachment insecurities revealed a significant effect for time x type of attachment dimension, $F(2, 812) = 201.798$, $p < .001$, $\eta^2 = .33$. Hence, we conducted repeated measure ANOVAs with time as a within subject repeated factor, for attachment anxiety and attachment avoidance separately. Analyses for both attachment anxiety and attachment avoidance revealed significant effect for time. Both attachment anxiety and attachment avoidance decreased over time.

Dissociation and Attachment Insecurities Over Time

To examine the bidirectional relationships between attachment insecurities and dissociation over time we used auto-regressive cross-lagged modeling (ARCL). Fit indices indicated that the model had good fit, $\chi^2(13)=47.947$, $p=.000$, $\chi^2/df=3.68$, CFI=.95, NFI=.94, RMSEA=.08. Figure 1 displays the standardized coefficients and significant paths for the nested model. The analysis revealed high stability over time of both attachment insecurities and dissociation: those with high levels of attachment insecurities and dissociation at T1 tended to have high levels of attachment insecurities and dissociation at T2 and T3.

More importantly, the analysis revealed that dissociation at T1 predicted a decrease in attachment avoidance between T1 and T2 – the higher the dissociation at T1, the higher the level of attachment avoidance at T2. Moreover, attachment avoidance at T1 and attachment avoidance at T2 predicted a decrease in dissociation between T1 and T2, and between T2 and T3, respectively – the higher the attachment avoidance at T1 or T2, the higher the dissociation at T2 and T3. The other paths were non-significant.

Discussion

The present longitudinal study explored attachment insecurities and dissociation among adult survivors of CSA during treatment. Our results indicate that both attachment insecurities and dissociation decreased over time. There were significant associations between attachment insecurities and dissociation, as well as findings that over time the relationship between the two was bidirectional – low attachment avoidance predicted decreases in dissociation and vice versa.

Our results indicating a decrease in dissociation over time are congruent with results of former studies (e.g., Cloitre et al., 2002; Resick et al., 2012), as well as clinical literature which views therapy as a facilitating process that enables survivors to reconstruct and integrate past trauma (Herman, 1992).

One might consider two main explanations for the present results. First, it might be that the decrease in dissociation over a short period of time during treatment (6 and 12 months after the start of the treatment), reflects the effects of the validation of the past traumatic event, which accompanied the beginning of therapy. While sexual abuse during childhood often constitutes a hidden secret, which is dissociated from other life aspects of the apparently ordinary life (e.g., Davies & Frawley, 1992), starting therapy that aims to cure the traumatic past, gives validation for the past

trauma. Thus, the past abuse becomes a real event that is less isolated from day-to-day life and more integrated with other parts of the victims' life.

At the same time, decreases in dissociation during treatment might be the consequence of both phases of the STAIR treatment. The goals of the first phase include addressing problems in affect and interpersonal regulation, as they negatively impact day-to-day functioning, and preparing the individual for the exposure treatment. The second phase of treatment includes emotional processing of the trauma using a modified version of prolonged exposure (PE). One can suggest that establishing increased stabilization and improved interpersonal regulation during the first phase of treatment might increase the survivors' personal safety and limits unsafe situations and relationships (Courtois, 2008), which in turn, can decrease the use of dissociative defenses. In addition, using PE techniques during therapy might facilitate reconstruction of the traumatic fragmented memory, so that parts of the self as well as the traumatic memory that were detached and split-off become more integrated and accessible to one's awareness (Cloitre et al., 2002).

Further, the present findings indicate decreases in attachment insecurities over time and point to the potent effect of psychotherapy. It seems that treatment can rebuild basic fundamental structures of the self, even after extreme traumatic events such as CSA. One might understand these positive trends as a result of the therapeutic relationship (Herman, 1992). Establishing positive therapeutic relationships that are close, and at the same time safe and respectful, might expose CSA survivors to a different quality of interpersonal interaction, thereby weakening the negative internalized perceptions of relationships.

Moreover, the explicit attention to interpersonal regulation and skills (e.g., Cloitre et al., 2002) as well as attachment issues during therapy may provide an

opportunity to rework attachment difficulties from the past in order to develop greater interpersonal capacities (e.g., Saakvitne, Gamble, Pearlman, & Lev, 2000) and to change inner working models of attachment (Bowlby, 1988; Siegel, 1999). Alternatively one might suggest that the changes in attachment reflect the impact of therapy on attachment interaction outside the therapy as well. Working through the traumatic past in treatment, may help to ease the interpersonal difficulties of the survivors. For example, treatment can limit the generalization of negative relational beliefs rooted in the past abusive interactions (e.g., Pearlman & Courtois, 2005), or posttraumatic symptoms (i.e., emotional numbness, outburst, hyper- vigilance) (e.g., Taylor & Harvey, 2010) that often hinder intimacy. These, in turn, can improve the relationships of survivors with their partners, and strengthen tendencies for security in attachment.

Our findings, which revealed high dissociation to be associated with elevated attachment insecurities, are congruous with other research studies (Anderson & Alexander, 1996) and theories (Liotti, 1992, 1999; Main, 1991). Our findings may suggest that the malignant and double-bind interactions that characterize families of CSA survivors can lead to the genesis of heightened attachment insecurities and fragmentation of mental processes.

The main contribution of the present research, however, is in the uncovered association between attachment and dissociation over time during treatment. The current innovative findings revealed that the relationship between attachment and dissociation might be reciprocal, at least in the beginning of treatment, and may contribute to accelerating the healing process. Thus, a reduction in dissociation facilitates a reduction in avoidance tendencies in attachment, which in turn contributes to further rehabilitation of integration.

Three primary lines of thought may explain the contribution of attachment in predicting change in dissociation during treatment. First, it may be suggested that attachment, which is a personal resource linked with psychological resilience (Mikulincer & Shaver, 2003), shapes the CSA survivor's coping with the significant challenge of facing the traumatic material during treatment (Herman, 1992). One might speculate that those who are more securely attached can better cope with the rising of distressful traumatic memories during treatment. They may more easily access inner representations of security or external sources of support and comfort, which may then help with the regulation of distress (Mikulincer, Shaver, & Horesh, 2006). Hence, these individuals may rely less on dissociative defenses and show improvement in mental integration during treatment.

Second, it may be that the positive consequences of attachment with regard to dissociation, reflect the effects of attachment on therapy outcomes in general. While secure attachment is associated with more compliance with the treatment program, attachment insecurities and attachment avoidance in particular were associated with rejection of treatment, lower self-disclosing, and poorer use of treatment (Dozier, 1990; Korfmacher, Adam, Ogawa, & Egeland, 1997). Hence, one can suggest that CSA survivors with low attachment insecurities benefited more from therapy, which led, among other things, to the rehabilitation of mental integration and reduction in dissociation.

Although both rationalizations above may partly explain the present results, the fact that only one domain of attachment insecurities was found to be linked to dissociation implies that they are unlikely to completely account for them. It seems that while the development of dissociation is linked with elevated levels of both attachment anxiety and attachment avoidance (manifested in disorganized attachment)

during childhood sexual abuse, the healing processes typifying treatment constitute associations between dissociation and only the avoidant dimension of attachment.

Taking into account the defensive elements of attachment avoidance might shed light on its pivotal role with regard to change in dissociation during treatment. As was mentioned, attachment avoidance is related with *deactivating* strategies that are aimed at keeping the attachment system down-regulated (Mikulincer & Shaver, 2003). These include avoidance of intimacy and dependency in relationships, dismissal of threat and attachment related cues, and suppression of threat and attachment related thoughts. Reliance on deactivating strategies in the face of a traumatic event lead to denial of the trauma and avoidance of direct or symbolic confrontation with trauma reminders (Mikulincer et al., 2006). At the same time, as was previously mentioned, CSA survivors' dissociation was originally created in response to a violation of attachment needs and facing conflicted attachment demands (e.g., Liotti, 1992, 1999). Hence, one might suggest that the deactivating strategies of avoidant CSA survivors might block the access to traumatic content, in general as well as with regard to attachment relationship, and contribute to the perpetuation of dissociation. However, on the other hand, a decrease in attachment avoidance during therapy may lessen the defensiveness regarding the traumatic attachment material and thus enable gradual integration.

At the same time, the present findings revealed that lower levels of dissociation predicted a positive change of decreases in attachment avoidance over time. One can suggest that the present results reflect the positive consequences of an increased ability for integration on the interpersonal realm. Improvement in the CSA survivors' capacities for integration of mental processes enable them to protect themselves and correctly identify threat and danger, and thus limit revictimization and

current abusive relationships (e.g., Classen et al., 1993). Moreover, decreases in usage of dissociation as a way to evade interpersonal reminders of the trauma may enable the current experience of positive interpersonal interactions within the therapeutic relationship or outside therapy. For example, low usage of dissociation in situations when the client faces an interaction with the therapist that reminds her of the abuse can allow for exposure to the corrective data of a benevolent relationship. This, in turn, can lead to change in former negative schemas and to lowering of attachment avoidance.

A number of limitations should be mentioned. This study was based on an assessment battery with the possibility of biased recall and subjective report. In addition, there was no control group. In principle, the changes that occurred following treatment could be attributed to other factors outside of the treatment. However, it seems likely that the therapeutic investment and the emotion processing that occurred during therapy were at least partly accountable for the positive results.

The present study informs policymakers and therapists that treatment of CSA survivors is very effective and can lead to considerable improvement with regard to attachment and dissociation. Furthermore, as the present study demonstrates, during therapy the recovery of one of the attachment domains can facilitate a parallel process of rehabilitation of the other, so that a cycle of healing is formed.

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Table 1. Intercorrelations between demographics, dissociation and attachment insecurities

Measure	1	2	3	5	6	7	8	9	10	11	12	13
1. Age	-											
2. Employment status	.32* (54)	-										
3. Number of children	.36*** (266)	.14 (34)	-									
4. Dissociation (T1)	-.07 (376)	-.14 (50)	-.02 (250)	-								
5. Dissociation (T2)	-.06 (231)	-.02 (31)	.02 (156)	.63*** (407)	-							
6. Dissociation (T3)	.03 (113)	-.29 (23)	.06 (86)	.74*** (407)	.68*** (407)	-						
7. Attachment avoidance (T1)	-.06 (367)	-.25 (51)	-.08 (242)	-.32*** (407)	-.28*** (407)	-.41*** (407)	-					
8. Attachment avoidance (T2)	-.08 (229)	.05 (35)	-.05 (156)	-.37*** (407)	-.45*** (407)	-.42*** (407)	.61*** (407)	-				
9. Attachment avoidance (T3)	-.12 (115)	.07 (25)	.12 (88)	-.44*** (407)	-.35*** (407)	-.44*** (407)	.72*** (407)	.72*** (407)	-			
10. Attachment anxiety (T1)	-.02 (372)	-.03 (52)	.15* (248)	.34*** (407)	.09 (407)	.09 (407)	-.33*** (407)	-.21*** (407)	-.22*** (407)	-		
11. Attachment anxiety (T2)	-.11 (232)	.01 (35)	-.05 (157)	.22*** (407)	.35*** (407)	.20* (407)	-.19** (407)	-.50*** (407)	-.40*** (407)	.51*** (407)	-	
12. Attachment anxiety (T3)	.10 (118)	-.18 (25)	-.15 (89)	.36*** (407)	.18* (407)	.27*** (407)	-.22** (407)	-.32*** (407)	-.42*** (407)	.68*** (407)	.69*** (407)	-

Notes. 1) Low scores on the attachment avoidance subscale represent high attachment avoidance; low scores of attachment anxiety represent low attachment anxiety; 2) Values in parentheses are valid N; 3) Maximum Likelihood method was conducted only for the study's variables. The correlations between the study variables and demographics have been conducted with a listwise deletion; 4) Employment status values: 1=employed, 0=unemployed.

* = $p < .05$; ** = $p < .01$; *** = $p < .001$

Table 2

Dissociation and Attachment insecurities as a function of time of measurement

Variable	*M*	*SD*	*F(2, 812)*	η^2
Dissociation				
T1	14.97	4.22	259.60***	.39
T2	13.03	3.65		
T3	11.90	3.20		
Attachment Avoidance				
T1	32.90	7.93		
T2	35.83	7.54	191.88***	.32
T3	37.93	7.29		
Attachment Anxiety				
T1	20.70	5.91		
T2	18.76	5.11	96.94***	.19
T3	18.07	5.26		

Note. Low scores of attachment avoidance subscale represent high attachment avoidance; low scores of attachment anxiety represent low attachment anxiety.
*$p < .05$. **$p < .01$. ***$p < .001$

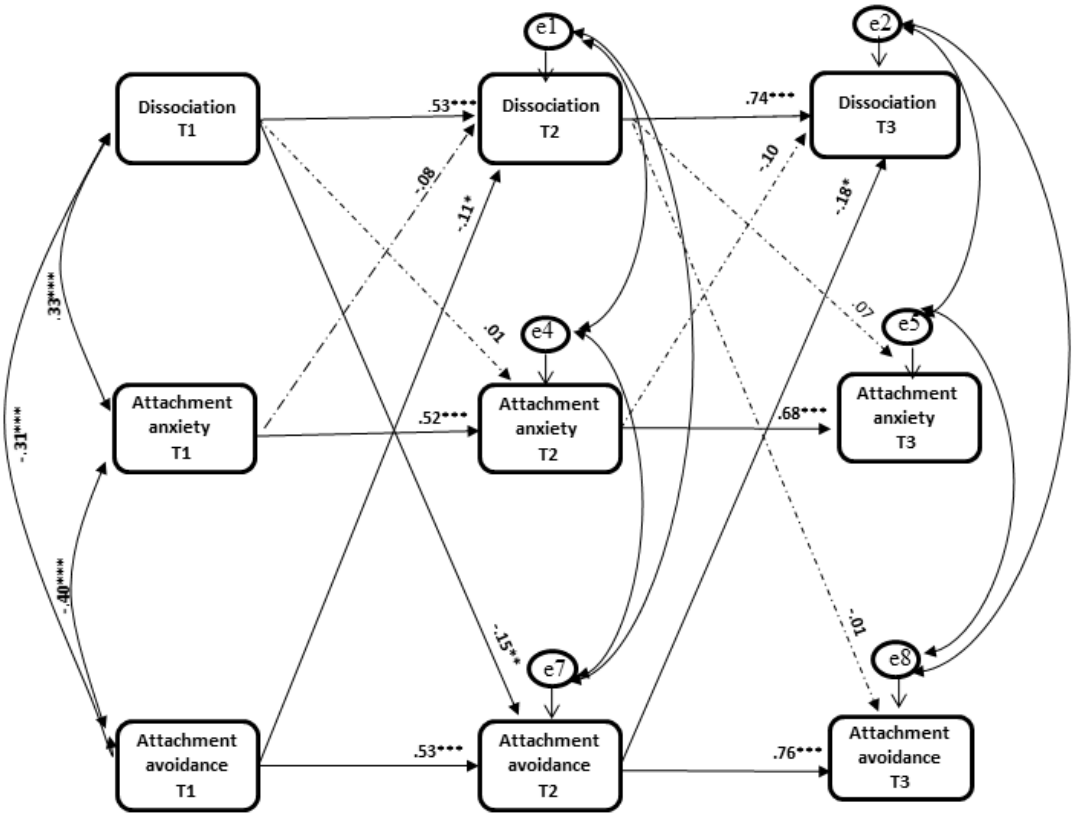

Figure 1. Autoregressive cross-lagged model assessing bidirectional relationships between attachment insecurities and dissociation across time – Standardized coefficients. Curved lines represent covariates between constructs. Solid lines represent significant predictions. Dashed lines represent non-significant predictions. Low scores of attachment avoidance subscale represent high attachment avoidance; low scores of attachment anxiety represent low attachment anxiety.

* p<0.05, ** p<0.01, *** p<0.001.