

# Childhood Sexual Abuse Differentially Predicts Outcome of Cognitive-Behavioral Therapy for Deliberate Self-Harm

Philip Spinhoven, PhD,\* Nadja Slee, PhD,\* Nadia Garnefski, PhD,\* and Ella Arensman, PhD†

**Abstract:** This study examined the association of childhood abuse with deliberate self-harm and related psychopathology and the impact of childhood abuse on treatment outcome as assessed in a randomized controlled trial of cognitive-behavioral therapy for 90 young people who recently engaged in Deliberate Self-Harm (DSH). Participants with a history of childhood sexual abuse manifested more Axis I disorders and reported higher levels of DSH, depression, suicidal cognitions, anxiety, and dissociation. After statistically controlling for baseline differences in DSH and related psychopathology, participants with a reported history of childhood sexual abuse showed a significantly lower risk of repeated DSH in the Cognitive-Behavioral Therapy condition compared with those receiving treatment-as-usual (TAU). Our results suggest that a structured treatment format and focus on adequate emotion regulation skills may be essential elements in the treatment of persons with DSH and a history of childhood sexual abuse.

**Key Words:** Deliberate self-harm, childhood abuse, cognitive-behavioral therapy, prediction.

(*J Nerv Ment Dis* 2009;197: 455–457)

Child sexual abuse often negatively affects short- and long-term emotional and cognitive development (Paolucci et al., 2001). Child sexual abuse is also a significant risk factor for various types of adult psychopathology in particular depression and substance abuse (Putman, 2003). Although the primary and unique role of child abuse in the development of deliberate self-harm (DSH) is debated (Klonsky and Moyer, 2008), child abuse may affect the range and severity of psychiatric symptoms and psychological problems among persons with DSH (Forman et al., 2004). Despite the strong impact of childhood abuse among DSH patients, only a few uncontrolled studies have examined whether the presence of a history of abuse limits an individual's response to treatment (Arnold et al., 2003; Pettigrew and Burcham, 1997; Söderberg et al., 2004) with mixed results. However, the relationship between a history of abuse and treatment outcome for DSH has never been studied in a randomized controlled clinical trial. So, it remains unclear whether a history of abuse is a general predictor of the course of DSH or a differential predictor of treatment outcome. This question is relevant given the outcome of some recent studies on childhood trauma as a differential predictor of treatment response in chronic depression and severe irritable bowel syndrome (Nemeroff et al., 2003; Creed et al., 2005). Study results suggest that participants with a history of childhood abuse manifested more severe levels of psychopathology at baseline, but that notwithstanding these dif-

ferences in severity of psychopathology they benefited more from treatment than nonabused participants.

We performed a retrospective analysis of a randomized controlled trial of cognitive-behavioral therapy (CBT) for DSH (Slee et al., 2008a). At 9-months follow-up DSH patients who received CBT in addition to treatment as usual were found to have significantly greater reductions in DSH, suicidal cognitions, and symptoms of depression and anxiety. The first aim of the present study was to examine whether group differences existed between patients with or without a history of reported childhood abuse with regard to demographic characteristics, psychiatric diagnosis, deliberate self-harm (DSH) and related psychopathology. The second and main aim of the present study was to examine whether DSH patients with a history of childhood abuse responded equally well to additional treatment with CBT compared with patients without abuse histories (after statistically controlling for any baseline differences between abused and nonabused patients in demographic and clinical characteristics).

## METHODS

### Participants and Study Design

A detailed description of the study design, sample, procedure, and results of the randomized controlled trial comparing CBT with treatment-as-usual (TAU) for DSH has been previously published (Slee et al., 2008a). Ninety adolescents and young adults (aged 15–35) who had recently engaged in DSH were randomly assigned to TAU plus CBT or TAU only. These participants were invited for subsequent assessments 3, 6, and 9 months following the baseline interview. In CBT, 8 participants dropped out just after the initial interview and before the start of treatment. In TAU, 9 participants dropped out during the study period of 9 months. The protocol was approved by the local ethics committee. Informed consent was obtained from all participants, and from parents of adolescents below the age of 16 years.

### Measures

Psychiatric diagnoses were assessed with the Mini-International Neuropsychiatric Interview (MINI, Sheehan et al., 1998). Frequency of DSH during the past 3 months was assessed using a structured clinical interview. Depression was measured by the Beck Depression Inventory II (BDI-II) (Beck et al., 1996), suicidal cognitions with the Suicide Cognition Scale (SCS) (Rudd et al., 2001), anxiety with the anxiety subscale of the Symptom Checklist-90 (Derogatis et al., 1977), and dissociation by the Dissociative Experiences Scale–Taxon (DES-T; Waller et al., 1996). Childhood abuse was assessed at baseline using the Stressful and Traumatic Events Questionnaire, developed and validated by Kerkhof et al., (1989). In this study, the focus was on the potential moderating role of childhood physical, sexual and emotional abuse before the age of 15. With regard to physical abuse, participants were asked “if someone had beaten you or punished you with a hard object.” With regard to sexual abuse, participants were asked “if someone had sexual intercourse with you when you did not want to.” With regard to emotional abuse, participants were asked “if someone had yelled at you or said insulting or hurtful things to you.” For a question to be

\*Department of Psychology and Psychiatry, Leiden University, Leiden, The Netherlands; and †National Suicide Research Foundation, Cork, Ireland.

Supported by The Netherlands Organization for Health Research and Development (ZonMw) (contract grant number: 2100.0068).

Send reprint requests to Philip Spinhoven, PhD, Department of Psychology and Psychiatry, Leiden University, Wassenaarseweg 52, 2333 AK Leiden, The Netherlands. E-mail: spinhoven@fsw.leidenuniv.nl.

Copyright © 2009 by Lippincott Williams & Wilkins

ISSN: 0022-3018/09/19706-0455

DOI: 10.1097/NMD.0b013e3181a620e8

given a positive rating, detailed information concerning the abuse had to be provided.

## Treatment Interventions

In addition to TAU (e.g., prescribed medication or psychotherapy), participants in the CBT condition were to receive 12 outpatient CBT sessions specifically developed for preventing DSH (Slee et al., 2007 for a more detailed description of the CBT treatment). Ten of 12 sessions were given weekly; the last 2 sessions were follow-up sessions. A manual was written to standardize the intervention (available on request).

## RESULTS

Of the 90 participants, 93% were female. Their mean age was 24.2 years ( $SD = 5.6$ ). The mean number of Axis I disorders according to the MINI was 2.5 ( $SD = 2.1$ ). The prevalence of mood disorder was 74.4%, of anxiety disorder 55.6%; of eating disorder 27.8%, of addictive disorder 20%, of somatoform disorder 7.8%, and of psychotic disorder 3.3%.

A substantial proportion of the participants reported childhood abuse: 31 (34.4%) reported no abuse, 19 (21.1%) physical abuse only, 15 (16.7%) sexual abuse only, and 25 (27.8%) a history of combined physical and sexual abuse. Since emotional abuse was found among almost all participants (96%), this variable was excluded from further statistical analysis.

Two-way ANOVA's revealed no significant main or interaction effects for sexual and physical abuse regarding age or education level. Next, a 2-way Multivariate Analysis of Variance (MANOVA) with number of Axis-I disorders (MINI), frequency of DSH, depression (BDI-II), suicidal cognitions (SCS), anxiety (SCL-90) and dissociation (DES) as dependent variables showed a significant main effect for history of sexual abuse ( $F(6.81) = 4.565, p < 0.001$ ). Neither the main effect for history of physical abuse ( $F(6.81) = 1.942, p = 0.08$ ), nor the interaction effect for physical abuse x sexual abuse ( $F(6.81) = 0.072, p = 0.99$ ) proved to be significant. Subsequent 2-way ANOVA's revealed that participants with a history of sexual abuse reported significantly higher scores for the number of Axis-I disorders (MINI), frequency of DSH, depression (BDI-II), suicidal cognitions (SCS), anxiety (SCL-90) and dissociation (DES).

There were no significant differences between the CBT and TAU condition with regard to demographic and clinical characteristics, dependent variables at baseline and history of sexual or physical childhood abuse.

Childhood abuse as a general or differential predictor of DSH at 9-month follow-up was examined using hierarchical multiple regression analyses. DSH at baseline was forced into the equation in the first step and treatment condition (CBT = 1/TAU = 0) in the second step. In the third step clinical severity variables on which abused and nonabused participants differed significantly were forced into the equation. In the fourth step, 2 dummy variables representing a reported history of sexual or physical abuse (Yes = 1/No = 0) were forced into the equation. After the forced entry of these various control variables, in the last step the interaction terms for both sexual and physical abuse with treatment condition were entered stepwise into the equation.

In the intent-to-treat sample ( $n = 90$ ) DSH at baseline accounted for 14.0% of the variance in DSH at follow-up ( $F$  change  $(1.88) = 13.81, p < 0.001$ ), while treatment condition explained an additional 11.4% of the variance ( $F$  change  $[1.87] = 12.87, p < 0.001$ ). In the third step, the clinical severity variables were not predictive of treatment outcome and the same applied to sexual and physical abuse entered in the fourth step. However, the interaction of sexual abuse with treatment condition accounted for 4.8% of the

variance in DSH above and independent of DSH at baseline, treatment condition, clinical severity variables, and sexual and physical abuse ( $F$  change  $[1.78] = 3.53, p < 0.05$ ). In the final model, only DSH at baseline ( $\beta = 0.38, p < 0.001$ ) and the interaction of sexual abuse with treatment condition ( $\beta = -0.41, p < 0.05$ ) were independent significant predictors of DSH at follow-up. Repeating these analyses in the completers sample ( $n = 73$ ) yielded almost identical results.

The effect size for the difference in residual gain scores for DSH between sexually abused participants from the CBT and TAU condition was very large ( $d = 1.21$ ), while the magnitude of the difference in residual gain scores between nonsexually abused participants from both conditions was small to moderate ( $d = 0.39$ ). In the CBT condition, sexually abused participants showed a better outcome than nonabused participants ( $d = 0.54$ ), while in TAU condition an opposite effect was found ( $d = 0.35$ ). Figure 1 presents the frequency of DSH at baseline and 9-month follow-up for participants with or without reported sexual abuse in CBT versus TAU.

## DISCUSSION

Consistent with leading theories of DSH (Linehan, 1993), many patients in our study sample had a history of childhood physical or sexual abuse in a prevailing context of emotional neglect and abuse. In particular, DSH patients with a history of sexual abuse showed multiple psychological and psychiatric problems (Forman et al., 2004), which suggests that compared with child physical abuse the experience of child sexual abuse stands out as a negatively significant event associated with multiple psychological and psychiatric problems.

Despite the more severe initial impairment, the CBT intervention was significantly more effective for individuals with a history of childhood sexual abuse, also after statistically controlling for any differences in clinical severity variables. The finding that individuals with a history of child sexual abuse had a poorer outcome on repetition of DSH following TAU may suggest that those with a history of sexual abuse have special needs. According to a review of extant outcome studies of adults with a history of early life abuse (Craighead and Nemeroff, 2005) treatment effects seem to be stronger when the treatment is individualized and tailored to a specific presenting problem, when a person seeks treatment for the distress caused by the trauma, and when the treatment program systematically and concurrently addresses several dimensions of the problem. Of note is that the present CBT intervention not allowed for individualization of treatment within a more general treatment

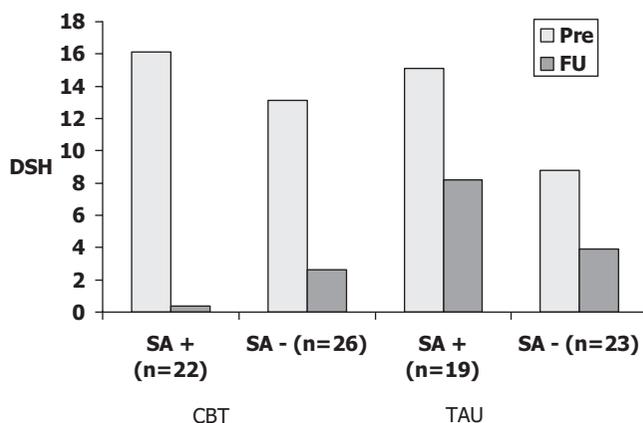


FIGURE 1. Sexual abuse as a differential predictor of reduction of deliberate self-harm after CBT versus TAU.

frame, but also was specifically tailored to DSH as the presenting problem and addressed several problem dimensions systematically and concurrently.

Since the CBT intervention in the present study focused on emotion regulation difficulties associated with repetition of DSH and not on exploring and reinterpreting memories of early childhood (e.g., Arntz and Weertman, 1999), the results of this study seem to indicate that a treatment focusing on current problems is also effective in sexually abused DSH patients. Emotion regulation difficulties have been conceptualized as a relatively distinct feature of the consequences of childhood abuse that are supposed to derive from the abuse's disruptive impact on the achievement of the developmental goals and interpersonal relatedness (Van der Kolk, 1996; Slee et al., 2008b). To influence the vulnerabilities in emotion regulation, the CBT intervention aimed to enhance emotional awareness, distress tolerance and problem solving skills (Slee et al., 2008c). These interventions require a good therapeutic alliance around trust and safety and sufficient time for the internalization of emotional control to develop.

The present study has several limitations. First, given that this was a clinical sample, the findings may not generalize to individuals with DSH in the community. Second, despite solid empirical evidence for the instrument used to measure childhood abuse, retrospective reporting of childhood abuse raises concern about the accuracy of participant recall. Third, it remains unknown to which extent the positive results in abused persons can be attributed to specific ingredients of CBT or to the total package of CBT in addition to TAU.

In conclusion, a time-limited and structured CBT intervention that emphasizes the importance of building a therapeutic alliance around trust and safety and teaches the patient better emotion regulation strategies, may bear great potential for persons with early life trauma.

#### ACKNOWLEDGMENTS

The authors thank all the patients who participated in the study.

#### REFERENCES

- Arnold EM, Kirk RS, Roberts AC, Griffith DP, Meadows K, Kirk RS, Roberts AC, Julian J (2005) Treatment of incarcerated, sexually-abused adolescent females: An outcome study. *J Child Sex Abuse*. 12:123–139.
- Arntz A, Weertman A (1999) Treatment of childhood memories: Theory and practice. *Behav Res Ther*. 37:715–740.
- Beck AT, Steer RA, Brown GK (1996) *Manual for the Beck Depression Inventory II*. San Antonio (TX): Psychological Corporation.
- Craighead WE, Nemeroff CB (2005) The impact of early trauma on response to psychotherapy. *Clin Neurosci Res*. 4:405–411.
- Creed F, Guthrie E, Ratcliffe J, Fernandes L, Rigby C, Tomenson B, Read N, Thompson DG (2005) Reported sexual abuse predicts impaired functioning but a good response to psychological treatments in patients with severe irritable bowel syndrome. *Psychosom Med*. 67:490–499.
- Derogatis LR (1977) *SCL-90-R: Administration, Scoring and Procedure Manual-I for the Revised Version*. Baltimore (MD): John Hopkins University School of Medicine, Clinical Psychometrics Research Unit.
- Forman EM, Beck AT, Brown GK, Berk MS, Henriques GR (2004) History of multiple suicide attempts as a behavioral marker of severe psychopathology. *Am J Psychiatry*. 161:437–443.
- Kerkhof A, Bernasco W, Bille-Brahe U, Platt S, Schmidtke A (1989) WHO/EURO Multicentre Study on Parasuicide. *European Parasuicide Study Interview Schedule (EPSIS)*. Leiden: internal publication Leiden University.
- Klonsky ED, Moyer A (2008) Childhood sexual abuse and non-suicidal self-injury: Meta-analysis. *Br J Psychiatry*. 192:166–170.
- Linehan MM (1993) *Cognitive-Behavioral Treatment of Borderline Personality Disorder*. New York: The Guilford Press.
- Nemeroff CB, Heim CM, Thase ME, Klein DN, Rush AJ, Schatzberg AF, Ninan PT, McCullough JP, Weis PM, Dunner DL, Rothbaum BO, Kornstein S, Keitner G, Keller MB (2003) Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Proc Natl Acad Sci USA*. 100:14293–14296.
- Paolucci EO, Genuis ML, Violato C (2001) A meta-analysis of the published research on the effects of child sexual abuse. *J Psychol*. 135:17–36.
- Pettigrew J, Burcham J (1997) Effects of childhood sexual abuse in adult female psychiatric patients. *Aust N Z J Psychiatry*. 31:208–213.
- Putnam FW (2003) Ten-year research update review: Child sexual abuse. *J Am Acad Child Adolesc Psychiatry*. 42:269–278.
- Rudd MD, Joiner T, Rajab MH (2001) *Treating Suicidal Behaviour: An Effective, Time-Limited Approach*. New York: The Guilford Press.
- Sheehan DV, Lecrubier Y, Harnett Sheehan K, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, Dunbar G (1998) The Mini International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview. *J Clin Psychiatry*. 59(suppl 20):22–33.
- Slee N, Arensman E, Garnefski N, Spinhoven P (2007) Cognitive-behavioral therapy for deliberate self-harm. *Crisis*. 28:175–182.
- Slee N, Garnefski N, van der Leeden R, Arensman E, Spinhoven P (2008a) Cognitive-behavioural intervention for self-harm: Randomised controlled trial. *Br J Psychiatry*. 192:202–211.
- Slee N, Garnefski N, Spinhoven P, Arensman E (2008b) The influence of cognitive emotion regulation strategies and depression severity on deliberate self-harm. *Suicide Life Threat Behav*. 38:274–286.
- Slee N, Spinhoven P, Garnefski N, Arensman E (2008c) Emotion regulation as mediator of treatment outcome in therapy for deliberate self-harm. *Clin Psychol Psychother*. 15:205–216.
- Söderberg S, Kullgren G, Salander Renberg E (2004) Childhood sexual abuse predicts poor outcome seven years after parasuicide. *Soc Psychiatry Psychiatr Epidemiol*. 39:916–920.
- Van der Kolk BA (1996) The complexity of adaptation to trauma: Self-regulation, stimulus, discrimination, and characterological development. In BA van der Kolk, AC McFarlane, L Weisaeth (Eds), *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body and Society* (pp 182-213). New York: Guilford Press.
- Waller N, Putnam F, Carlson E (1996) Types of dissociation and dissociative types: A taxonomic analysis of dissociative experiences. *Psychol Methods*. 1:300–321.