Dissociative Phenomena Among Recovering Heroin Users and Their Relationship to Duration of Abstinence

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ABSTRACT. This study is an investigation of trauma and dissociation in 100 Israeli recovering patients with drug use disorder. The respondents showed more emotional, physical and sexual traumatization than an Israeli clinical sample, and their levels of dissociation were similar to those previously measured in Israeli patients diagnosed with Posttraumatic Stress Disorder and Acute Stress Disorder (Somer, Dolgin, & Saadon, 2001). Male respondents with higher trauma scores were more likely to report dissociative experiences during their drug use (chemical dissociation). Drug-free high-dissociators were more likely to report depersonalizing and derealizing experiences when they had been using drugs. Stronger dissociative experiences during drug-use related to more psychological distress during inter-use craving. A relationship between psychological distress during inter-use craving and psychological dissociation measured in a detoxified state was also established. Length of abstinence from illicit substances was best predicted by lower levels of psychogenic dissociation and by longer durations of psychosocial treatment. While findings imply that tenacity in treatment could be a sustaining process associated with abstinence from drug use, they also suggest that without

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a thorough resolution of trauma-related dissociation, successful treatment outcome is less likely.

KEYWORDS. Dissociation, substance abuse, heroin, trauma, Israel

INTRODUCTION

Child abuse trauma affects mental development and contributes to the vulnerability of survivors of child sexual abuse (CSA) to chemical dependency. Excitatory fear responses of survivors never really disappear, and they easily return with the exposure to stimuli reminiscent of the original traumatic situation (Fairbank & Nicholson, 1987). Recent stressors are experienced with an emotional intensity that imitates that of the traumatizing events. This process contributes to their constant yearning to mute the experienced emotional torment. Another model to explain the link between childhood trauma and the proclivity to misuse drugs relates to the process of dissociation. This concept refers to the fragmentation of normally integrated systems of the self, such as memory, thoughts, sensations, feelings, behavior and awareness. Dissociation is a normal human phenomenon typically employed by traumatized children to compartmentalize their awareness of their past and current experiences. During a traumatic event, dissociation enables the victim to observe the incident as a bystander with only a minimum of experienced distress. Although an effective coping mechanism under extreme duress, this solution can become problematic because it can create confusion and disorganized thinking, it can interfere with everyday functioning, it can inhibit the processing of dissociated traumatic pain, and it can lead to a subjective sense of emotional deadness.

Trauma Dissociation and Substance Abuse

Studies indicate that people with drug use disorder have a greater likelihood of histories of childhood abuse (Aubeg & Fairbank, 1992; Lisak, 1993; Van Hassselt, Ammerman, Glancy, & Bukstein, 1992). One study stated that 35% of recovering adolescent substance abusers had been sexually abused as children (Edwall, Hoffman, & Harrison, 1989). It is assumed that powerful abused drugs, such as opiates, help suffering survivors in their effort to self-medicate their unrelenting emotional pain (Dembo, Dertke, La Voie, Borders et al. 1987;

Khantzian, 1985). Schetky (1990) suggested that drugs help survivors achieve the repression they were unable to achieve effectively otherwise. Hussey and Singer (1993) posited that drug abuse might be the second stage of a strategy developed for coping with intolerable experiences and their memories when psychological coping fails. Roesler and Dafler (1993) suggested that survivors of child sexual abuse tend to utilize "chemical dissociation" and showed that 65.9% of a clinical group of adult survivors met Diagnostic and Statistical Manual of Mental Disorders-III-Revised (DSM-III-R) criteria for lifetime prevalence of drug or alcohol abuse or dependence.

Most of the literature on Dissociative Disorders (DD), trauma and addictions substantiates the statistical concurrence of the phenomena. Ross, Kronson, Koensen, Barkman et al. (1992) reported 4 times the incidence of CSA and 3 times the incidence of DD among individuals who abuse alcohol and drugs compared to non-clinical controls. In a survey of 185 individuals with severe dissociative disorders, 57% had problems with drug abuse (Rivera, 1991). Dunn, Paolo, Ryan and Van Fleet (1995) showed that 41.5% of chemically dependent veterans received an average DES score of 15 or higher (DES range 0-100). This is considered to be a rather elevated DES score. In comparison, Israeli Dissociative Disorders patients scored 29.45 on the DES (Somer, Dolgin, & Saadon, 2001). The similarity between chemically induced and psychologically induced symptoms of dissociation required special disclaimers to be added to the instructions on scales measuring dissociation, asking respondents to endorse items only if the described experiences occurred not under the influence of alcohol or drugs (e.g., the DES; Carlson & Putnam, 1993). For example, a blackout, a common symptom of alcohol dependence (Valliant, 1983), may function as a dampening solution for intrusive PTSD symptoms and sleep disorders (Keane, Geraldi, Lyons, & Wolfe, 1988). Blackouts can mimic "holes in memory," a known dissociative symptom. Marijuana can also cause derealization and memory loss (Blum, 1984). Cocaine has a significant mood-elevating action, whereas opiates can help mute feelings of rage and aggression creating a depersonalizing experience and thus help distance the user from emotional distress and physical pain as well as altering mood and generating euphoria (Landry, 1994; van der Kolk, 1996).

Traumatized people who experience overwhelming psychological and somatic pain may look beyond their own mental resources for relief; when these victims get access to consciousness-altering substances, they may discover the immediate advantages of "chemical dissociation" and its rapid effect on both the body and the mind. If the

presence of "chemical dissociation" is more characteristic of traumatized, high-dissociating, drug abusing individuals, then it might be feasible to develop a scale measuring the construct of "chemical dissociation" using this population. Based on Khantzian's self-medication theory of substance abuse (1985) in which he suggests that drugs of abuse are selected according to their specific psychotropic effects, we hypothesized the following findings among non-using former drug addicts: (1) a relationship between the intensity of past traumata and chemically induced experiences of depersonalization and derealization (chemical dissociation); (2) a relationship between experiences of chemical dissociation and psychological dissociation during abstinence from illicit drug use; (3) a relationship between dissociative experiences during illicit drug use (chemical dissociation) and psychological distress during inter-use craving; (4) a relationship between psychological distress during inter-use craving and psychological dissociation experienced during abstinence from illicit drug use. and (5) We also predicted that childhood trauma, dissociation and length of psychosocial treatment would be significant predictors of the duration of abstinence from illicit drugs.

METHOD

Procedure and Subjects

Recovering former heroin-injecting patients (n = 110) from 5 rehabilitation centers in northern Israel who met our inclusion criteria were approached for this study. To be included, their routine blood and urine tests had to indicate a continuous one-month drug-free period and they all had to be fluent in Hebrew. Of these, 100 patients (83 men, 17 women) agreed and signed the informed consent form (a 91% response rate). To test the stability of our experimental questionnaire, participants who met our inclusion criteria were asked to respond to it twice with an inter-test interval of one month. The subjects were predominantly Jewish Israelis (90%), while 5 were Arab Israelis (4 Christians and 1 Muslim). Four patients did not identify their religion. This ratio between Jews and Arabs was representative of the general Israeli population. The subjects' average age was 37.2 (S.D. = 4.3; range = 19-56) and they had an average of 9.8 years of education (S.D. = 2.1; range = 6-13). Most subjects were unmarried: 23 had never married, 34 were divorced, 4 were widows, and 34 were currently married. Two-thirds of

the sample was unemployed, and the Israeli welfare authorities financially supported 68% of the entire sample. Many of the participants in this study (84%) reported having a criminal record. Participants had, purportedly, been abusing substances since the average age of 17.5 (S.D. = 10.3; range = 7-52). The abused substances included heroin (97%), Canabis (89%), stimulants (59%), depressants (59%), and alcohol (33%). Heroin was identified as a preferred substance by 88% of the respondents. The average time that elapsed since the last usage of illicit drugs in our sample was 22.8 months (S.D. = 5.1; range = 3-38). We were not allowed to review the medical charts of these patients, thus, no information on their dual-diagnosis was made available.

Instruments

Biographic Data Questionnaire

This instrument was created by the authors and provided descriptive personal data, such as age, sex, education, employment, drug abuse history, and elapsed time since last abuse of drugs, criminal record and drug rehabilitation treatment history.

Substance Abuse Functions Scale (SAFS)

This scale was constructed by the authors and was designed to measure two specific substance abuse experiences: (1) Chemical dissociation often reported by opiate abusers (SAFS-CD), and (2) psychological distress experienced during craving for the chemical substance (SAFS-PD). The original pool of items was based on information gathered from both recovering addicts and their therapists, as well as on spontaneous accounts shared by patients with the authors in individual and group psychotherapy. The first version of the instrument included 46 items. This pilot instrument was administered to a select group of patients and therapists. Of these, 12 poorly worded or misunderstood items were removed following solicited feedback. The final version of the SAFS included 34 items rated on a 5-point Likert scale. To avoid a response set, about half of the items were worded inversely. The first 22 items related to chemically altered states of consciousness (SAFS-CD) and inquired about occurrences of detachment, disconnection, and depersonalization experienced under the influence of illicit substances. For example: “I forget all the pain in my life,” “I disconnect from my anger,” “I feel detached from my physical discomfort,” “I do not feel

my depression," or "I can ignore my feelings." The next 12 items described feelings experienced during the craving for the illicit drugs (SAFS-PD). These items were added to help us assess the defensive detachment and depersonalizing functions of the abused substances. For example: "I can't fall asleep," "I have scary feelings," "I have terrible memories." Chronbach's Alphas for the two parts of the SAFS were .89 and .83, and the test-retest reliabilities were .87 and .84 ($p < .0001$, for all reliability calculations).

Dissociative Experiences Scale–Hebrew Version (H-DES)

The Dissociative Experiences Scale (DES) was developed in the United States (Bernstein & Putnam, 1986; Carlson & Putnam, 1993) and is used to measure the frequency of 28 dissociative experiences that are considered important aspects of the dissociation construct (Putnam, 1991). The instrument was shown to be a valid and reliable screening instrument (Frischholtz et al., 1990; Waller, 1995). The Hebrew translation of the DES (H-DES) was shown to have high reliability and validity (Somer, Dolgin, & Saadon, 2001). The instruments' total score test-retest reliability coefficient was .87 ($p < 0.0001$, $N = 141$). Split-half reliability coefficient (calculated using the Spearman Brown formula) was .86 ($p < 0.0001$, $N = 584$). Cronbach's alpha coefficient for the H-DES was 0.91 ($N = 584$). Convergent validity was calculated by comparing scores of the H-DES with scores of the Phillips Dissociation Scale (PDS), a 20-item instrument derived from the MMPI-2. There is no item overlap between the H-DES and the PDS. A Spearman Correlation between the H-DES and the PDS scores for 284 patients $r = 0.59$ ($p < 0.0001$). Divergent validity was calculated by comparing the scores of the H-DES and the Male/Female scale of the MMPI- 2. As expected, there was no correlation between dissociative experiences and scores on a scale measuring masculinity/femininity [$r = -.03$ ($p < 0.28$)] (Somer, Dolgin, & Saadon, 2001).

Traumatic Experiences Questionnaire–Hebrew Version (H-TEQ)

The original instrument was developed by Nijenhuis, van der Hart and Vanderlinden (Nijenhuis et al., 1998) and later slightly modified and relabeled *Traumatic Experiences Checklist* (Nijenhuis, 1999). The TEQ is a self-report questionnaire inquiring about 25 types of interpersonal and non-interpersonal life events that could be potentially traumatic. When interpersonal violence was explored, subjects were asked

to indicate whether immediate family members, relatives, or others hurt them. TEQ items inquire whether respondents had suffered from the following stressors: parentification (a child needing to act in a parental role), major loss, such as a death of a loved one, life-threats, traumatic life events, emotional neglect, emotional abuse, physical abuse, sexual harassment, or sexual abuse. The TEQ specifically addresses the subjective impact of the event (i.e., how traumatic it was for the respondent), and also requests information about the number of perpetrators of emotional, physical, and sexual abuse. The questions contain short descriptions that intend to define the events of concern. All items are preceded by the phrase: "Did this happen to you?" An example of sexual harassment is: "Sexual harassment (acts of a sexual nature that DO NOT involve physical contact) by your parents, brothers, or sisters." A sexual abuse item is: "Sexual abuse (unwanted sexual acts involving physical contact) by your parents, brothers, or sisters."

Moderate to strong associations of the TEQ total score and composite scores, in particular physical and sexual abuse, with current psychological and somatoform dissociation, supports the construct validity of the TEQ. These associations were found when studying psychiatric outpatients with dissociative disorders and other mental disorders and gynecology patients with chronic pelvic pain (Nijenhuis et al., 1999).

Among the key factors that determine what makes an event traumatic are: the perception of the event as having highly negative valence (e.g., Carlson, 1997), multiple perpetrators (e.g., Peters, 1988), duration and frequency of the abuse (e.g., Elliott & Briere, 1992), and abuse at an earlier age (e.g., Zivney, Nash, & Hulsey, 1988). The TEQ composite trauma score reflects these relevant traumatogenic factors. Each experience identified as a trauma item was given one point. Subjects could score 0-3 trauma points, depending on the number of perpetrating sources. Additional points were given to each personal trauma score if the subject was younger than age 10 when traumatized, if the trauma lasted more than one year, and if the impact of the traumatic event was rated as 4 or 5 on a 5-point subjective severity scale. Personal trauma scores in each of the nine categories ranged from 0-7. The TEQ was translated into Hebrew by the first author (a native Hebrew speaker) and later was blindly backtranslated into English by a native English speaker. The backtranslation was compared to the original version and differences were reconciled. The final Hebrew version of the TEQ (H-TEQ) was used in this study.

RESULTS

The respondents' average composite trauma score on the H-TEQ was 17.3 (SD = 11.6). This result reflected higher traumatization history compared to that measured in an Israeli outpatient sample (M = 14.14; SD = 16.35; Somer, Dolgin, & Saadon, 2001). The trauma categories receiving the highest mean scores in this study (reflecting frequency of endorsement, early age onset, duration of exposure and subjective effect) were Emotional Neglect (M = 2.87; SD = 2.30) and Emotional Abuse (M = 2.84; SD = 2.22). Physical Abuse received a mean trauma score of 1.95 (SD = 2.13). Average scores were 1.18 (SD = 1.72) for Sexual Harassment and 1.10 (SD = 1.72) for Sexual Abuse. This sample of former substance abusers appeared to be more traumatized emotionally, physically and sexually than an Israeli clinical sample (Somer, Dolgin, and Saadon, 2001).

The average total H-DES score for the detoxified substance abusers investigated in this study was 21.27 (SD = 15.02). In comparison, Somer, Dolgin, & Saadon (2001) reported mean H-DES scores for two relevant groups as follows: Posttraumatic Stress Disorder and Acute Stress Disorder–20.36, Dissociative Disorders–29.45. We predicted a relationship between the intensity of past traumata and chemically induced experiences of depersonalization and derealization (chemical dissociation). A one-tail Pearson correlation between past trauma (TEQ) and past reported drug-induced (chemical) dissociation (SAFS-CD) was significant ($r = .22$, $p < .05$), thus confirming the first research hypothesis. We also hypothesized a relationship between experiences of chemical dissociation and psychological dissociation during abstinence from illicit drug use. A one-tail Pearson correlation also revealed a modest but significant relationship between psychological dissociation (H-DES) and chemical dissociation (SAFS-CD) ($r = .17$; $p < .05$) indicating a higher likelihood for non-using high-dissociators to report depersonalizing and derealizing experiences while using illicit drugs, thus confirming our second research hypothesis. In the third hypothesis we assumed a relationship exists between dissociative experiences during illicit drug use (chemical dissociation) and psychological distress during inter-use craving. Data showed a significant relationship between SAFS-CD (chemical dissociation) and SAFS-PD (psychological distress during inter-use craving) ($r = .33$, $p < .0001$), thereby confirming our third research hypothesis. In the fourth hypothesis we posited a relationship between psychological distress during inter-use craving (SAFS-PD) and psychological dissociation measured in a

drug-free state. A one-tail Pearson correlation revealed a significant relationship between these two variables ($r = .27$, $p < .005$). We also predicted that childhood trauma, dissociation and length of psychosocial treatment would be significant predictors of the duration of abstinence from illicit drugs. To predict the duration of abstinence from substance abuse, from childhood trauma history and current psychological dissociation, we performed a regression analysis (see Table 1).

We entered the independent variables as a first step and found that higher composite trauma scores and lower current dissociation scores were associated with longer durations of abstinence regardless of the level of retention in psychosocial treatment, $R = .30$, $R^2 = .09$, $F\,(2,90) = 4.45$, $p < .05$. Because we suspected that childhood trauma history did not affect positive treatment outcome directly, but rather through its relationship with the patients' commitment to psychosocial treatment we entered the duration of received psychosocial treatment as a second step. After accounting for severity of trauma and current dissociation, the duration of psychosocial treatment independently added a significant contribution to the regression equation, $\Delta R^2 = .18$, $R = .52$, $R^2 = .27$, $F(3, 92) = 10.82$, $p < .01$ and rendered the contribution of past trauma to the prediction of treatment outcome statistically insignificant.

DISCUSSION

Spontaneous feedback offered during data collection by many respondents conveyed a strong interest in this research project and its instruments. This impression was strengthened by the 91% response rate achieved in the present study. Many participants communicated their appreciation of this project because they thought chemical and psychological dissociation and trauma were key factors in understanding their difficulties. The findings presented in this research article should be considered with caution. They are subject to methodological limitations restricting casual inferences between reported trauma, reported chemical dissociation, dissociation measured during abstinence and duration of abstinence from illicit drug abuse. Limitations of the present study also include the retrospective self-report nature of past trauma and the experiences during the addictive phase, which may have introduced bias or error into the data. These caveats notwithstanding, the present study has important implications for the study and treatment of traumatized heroin users who are employing dissociative defenses.

TABLE 1. Explanation of Abstinence in Recovering Heroin Addicts by Trauma History, Current Dissociate Experiences and Length of Psychosocial Treatment Using Hierarchical Multiple Regression

	step 1	step 2
	B	B
	(standardized)	(standardized)
TEQ	.539*	.386
	(.216)	(.154)
H-DES	−.533**	−.568**
	(−.282)	(−.300)
Length of Psychosocial Treatment		.639**
		(.425)
R^2	9.1%	26.7%
F	F(2,90) = 4.498*	F(3,89) = 10.815**
R^2-Change		17.6%
F-Change		F(1,89) = 21.407**

*p < .05; **p < .01

Trauma Histories

Our findings indicate that former Israeli heroin-injecting patients appear not only to have trauma histories that are more severe than those measured in an Israeli outpatient sample, but that their dissociation scores resemble those obtained from patients diagnosed as suffering from PTSD or Dissociative Disorders (Somer, Dolgin & Saadon, 2001). This implies a possible overlap between these populations and emphasizes the need to incorporate routine screening for traumatic histories during initial assessment of treatment seeking heroin users. Proper resolution of traumatic experiences may be crucial for successful rehabilitation of many of these patients. Drug rehabilitation counselors should be trained in the assessment of posttraumatic symptoms and in providing treatments known to be effective in reducing PTSD. Future controlled drug rehabilitation outcome research should compare the efficacy of standard treatment programs with therapy regimens that address the identification and resolution of posttraumatic symptomatology.

Chemical Dissociation

This study demonstrated a relationship between childhood trauma, psychogenic dissociation and chemically sought dissociation. The find-

ings indicate that those who retrospectively reported more psychological distress during inter-use craving also reported more dissociative experiences during illicit drug use (chemical dissociation). Results also show that high-dissociating former heroin users were more likely to seek dissociative experiences during their substance use. These findings add to the developing understanding of patients with a dual diagnosis consisting of chemical dependency and either a dissociative disorder or a concomitant history of childhood abuse. *Chemical dissociation* could be a solution some victims opt for when substances are available and when psychological dissociation fails to dampen the effects of inescapable childhood trauma. Several studies identified the involvement of endogenous opioids in the reduction of fear, in the suppression of panic escape behaviors, and in the inhibition of the production of sounds during traumatic stress (Fanselow, 1986; Kalin, 1993; Sigfried, Frischknecht & Nunez de Soua, 1990; van der Kolk, 1994). Some people with drug use disorder may try to produce analgesic and fear calming reactions through chemical dissociation because their endogenous opioid defenses may have either reached saturation or because their endogenous opioids are inhibited when traumatic threat cues are no longer present. Further work is needed to substantiate the hypothesized link between stress-related opioid saturation and opioid inhibition and specific proneness for heroin-induced (chemical) dissociation. Another direction for future research follows directly from this study. The reliable construct of *chemical dissociation* developed in this study was derived from descriptions offered spontaneously by recovering heroin users during treatment. This underscores the scientific value inherent in spontaneously described experiences and emotions. To fully uncover the emic (relativist) constructions of heroin use, it is recommended that qualitative methodologies be employed wherein participants could describe their consciousness altering experiences in their own terms. Further research is also necessary to replicate these findings and to ascertain the applicability of this construct in drug-use disorder patients in other cultures.

Prediction of Abstinence

The present findings indicate that treatment outcome for chemically dependent persons, as measured by duration of abstinence from illicit substance abuse, is positively related to their perseverance in psychosocial treatment. This suggests that childhood traumatization is related to the proclivity of chemically dependent respondents to stay in

psychosocial treatment and that their tenacity in treatment could be a sustaining process, successfully compensating for maladaptive chemical self-medication. However, another powerful predictor that was negatively related to the elapsed time since the last abuse of drugs was the level of dissociative experiences measured during the drug-free stage. This may mean that chemically dependent persons who were low dissociators were more likely to experience longer periods of abstinence from substances, or that persons who had only recently become abstinent were more likely to compensate for the missing chemical dissociation by evoking their psychogenic dissociative defenses. Be that as it may, it is essential that psychosocial treatment for chemical dependency provided to traumatized persons should screen for dissociative defenses and pathology. Before individuals are asked to relinquish their maladaptive (psychological and chemical) analgesics, clinicians ought to provide them with adequate therapy for their original pain-producing emotional wounds. Curriculae for drug rehabilitation counselors should be expanded, accordingly, to include treatment skills training for dissociative disorders.

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