Available online at www.sciencedirect.com
SCIENCE DIRECT®
Drug and Alcohol Dependence 77 (2005) 243–249
DRUG and ALCOHOL DEPENDENCE
www.elsevier.com/locate/drugalcdep

Post-traumatic stress disorder among people with heroin dependence in the Australian treatment outcome study (ATOS): prevalence and correlates

Katherine L. Mills[a,*], Michael Lynskey[b], Maree Teesson[a], Joanne Ross[a], Shane Darke[a]

[a] *National Drug and Alcohol Research Centre, University of New South Wales, NSW 2052, Australia*
[b] *Department of Psychiatry, Washington University School of Medicine, St Louis, USA*

Received 25 March 2004; received in revised form 13 August 2004; accepted 16 August 2004

Abstract

This study documents the prevalence and correlates of post-traumatic stress disorder (PTSD) among Australian individuals with heroin dependence. Data was obtained from a cohort of 615 people dependent on heroin, 535 entering treatment for their heroin dependence and 80 individuals not in treatment. Trauma exposure (92%) and lifetime PTSD (41%) were highly prevalent. PTSD was prevalent across all treatment modalities, most commonly residential rehabilitation (52%) followed by maintenance therapies (42%), and detoxification (37%). The lowest prevalence was reported among those not in treatment (30%). Although men and women were equally likely to have experienced trauma (93% vs. 89%), women were more likely to develop lifetime PTSD (61% vs. 37%). For the large majority of those with PTSD, the condition was chronic (84%), with symptoms continuing for an average of 9.5 years. Those with PTSD had more extensive polydrug use histories, poorer general physical and mental health, and more extensive health service utilisation. It is concluded that PTSD is highly prevalent among individuals with heroin dependence, presenting a significant challenge to treatment providers.

Keywords: PTSD; Heroin; Treatment; ATOS

1. Introduction

Studies of people with heroin dependence have documented high rates of psychiatric comorbidity among this group, most commonly mood disorders, anxiety disorders, and anti-social personality disorder (ASPD) (Brooner et al., 1997; Darke and Ross, 1997; Darke et al., 1994; Krausz et al., 1998). Few studies, however, have examined the prevalence of post-traumatic stress disorder (PTSD) among this group (Clark et al., 2001; Hien et al., 2000; Milby et al., 1996; Villagomez et al., 1995). This dearth of research is in spite of epidemiological evidence to suggest that people with heroin dependence may be at increased risk of PTSD (Cottler et al., 1992).

PTSD is an anxiety disorder that may develop after having experienced, witnessed, or been confronted with an event involving actual (or threatened) serious injury or death, or a threat to the physical integrity of the self or others. Such events include combat, natural disasters, life-threatening accidents, witnessing serious injury or death, rape, sexual molestation, being threatened with a weapon, tortured or the victim of terrorists. The experience of such an event is the first of several diagnostic criteria that must be met for a diagnosis of PTSD. In approximately half of all cases, a complete recovery may occur within three months. For many others, symptoms persist for longer than 12 months forming a chronic, debilitating condition (American Psychiatric Association, 1994; Turnbull, 1998; Yehuda, 2002).

The few studies that have examined the prevalence of PTSD among those in treatment for heroin dependence have found that it is a frequently co-occurring disorder. It has been estimated that 72% of those in methadone maintenance treatment (MMT) have been exposed to trauma (Clark et al., 2001) and between 14–29% and 19–31% have been diagnosed with lifetime and current PTSD respectively (Clark et al., 2001;

* Corresponding author.
E-mail address: k.mills@unsw.edu.au (K.L. Mills).

0376-8716/$ – see front matter © 2004 Elsevier Ireland Ltd. All rights reserved.
doi:10.1016/j.drugalcdep.2004.08.016

Hien et al., 2000; Milby et al., 1996; Villagomez et al., 1995). Although these studies have raised concern about the prevalence of PTSD among those with opioid dependence, their generalisability is limited as their samples are confined to those enrolled in MMT in the USA. Therefore, the extent to which these findings may be extrapolated to people with heroin dependence in other treatment modalities or those not in treatment is questionable.

Additionally, these studies have provided very little information on the impact of this comorbidity on measures of substance use (e.g., heroin and other drug use, injection related health and risk-taking, involvement in criminal activity), physical and mental health, or psychosocial functioning (e.g., employment, arrest history). However, it appears that comorbid heroin dependence and PTSD may be associated with greater drug abuse severity, and higher levels of major depression and attempted suicide compared to those with heroin dependence alone (Clark et al., 2001; Villagomez et al., 1995). Given that those with this comorbidity appear to present with a poorer clinical profile compared to those with heroin dependence alone, it is likely they are also greater users of health care services. However, this is yet to be established.

Clearly, it is important that further research be undertaken in order to develop a greater understanding of the factors associated with comorbid heroin dependence and PTSD. Knowledge of these factors would assist considerably in understanding the clinical presentation of this comorbidity and facilitate the provision of appropriate services. This is particularly important given that preliminary investigation suggests that PTSD may be associated with poor treatment outcomes among people with heroin dependence (Hien et al., 2000). As such, the present study aimed to extend upon prior research by:

- examining the prevalence of trauma exposure and PTSD among a sample of people seeking treatment for heroin dependence and a non-treatment seeking sample;
- examining the demographic, drug use, physical and mental health correlates of comorbid heroin dependence and PTSD;
- examining the impact of comorbid heroin dependence and PTSD on health service utilization; and
- identifying independent predictors of PTSD among individuals with heroin dependence.

2. Methods

2.1. Procedure

The data presented in this report were collected between February 2001 and August 2002 as part of the New South Wales (NSW) component of the Australian Treatment Outcome Study (ATOS) (Ross et al., 2002; Darke et al., 2003, 2004). ATOS is a longitudinal study of entrants to treatment for heroin dependence. Participants were recruited from 19 agencies treating heroin dependence in the greater Sydney region. Agencies were randomly selected from within-treatment modality and stratified by regional health area. The agencies represent the major treatment modalities and comprised 10 methadone/buprenorphine maintenance agencies (MT), four drug-free residential rehabilitation agencies (RR), and nine detoxification facilities (DTX). Four agencies provided both maintenance and detoxification services. People with heroin dependence not currently in treatment (NT) were recruited from needle and syringe programs in the regional health areas from which treatment entrants were recruited. Ethical approval was granted by the Human Ethics Review Committees of all participating area health services and the University of New South Wales.

Eligibility criteria were: (i) no treatment for heroin dependence in the preceding month, (ii) no imprisonment in the preceding month, (iii) aged 18 years or over, and (iv) agreed to give contact details for follow-up interviews, and (iv) not having been previously enrolled in ATOS. The non-treatment group had one additional criterion: they could not be enrolled in treatment for their heroin dependence at the time of baseline interview.

Of those entering treatment who were eligible to participate in ATOS ($n = 694$), 535 (77%) were enrolled in the study. The remainder refused to participate either directly ($n = 62$, 9%) or passively by repeatedly failing to attend the baseline interview ($n = 97$, 14%). Similarly, of the 91 people who were eligible for inclusion in the NT group, 80 were enrolled in the study (88%). Eleven people (12%) directly refused to participate.

The total sample consisted of 615 people with heroin dependence: 201 entering MT, 201 entering DTX, 133 entering RR, and 80 NT participants. All participants were paid A$ 20 for completing the baseline interview, which took approximately 1 h to complete. Written consent was obtained from all participants.

2.2. Structured interview

Participants were administered a structured interview. DSM-IV diagnoses of PTSD were obtained using a modified version of the composite international diagnostic interview (CIDI) used in the National Survey of Mental Health and Well-being (NSMHWB) (Andrews et al., 1999). The PTSD module began by asking about ‘extremely stressful or upsetting events that sometimes occur to people’. Participants were handed the questionnaire and asked to indicate whether or not they had experienced combat, natural disasters, life-threatening accidents, witnessed serious injury or death, rape, sexual molestation, being threatened with a weapon, tortured or the victim of terrorists, any other extremely stressful or upsetting event, or a great shock because one of the aforementioned events happened to someone close. If the response to either of the later two questions was yes, a description of the event was obtained. Responses were coded according to DSM-IV guidelines as to whether these