

Regular article

Predictors of opiate agonist treatment retention among injection drug users referred from a needle exchange program

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Received 11 March 2008; received in revised form 24 June 2008; accepted 17 July 2008

Abstract

Aims: The aim of this study was to examine the effect of a case management intervention on retention in opiate agonist therapy among injection drug users (IDUs) referred from a needle exchange program (NEP). **Design, intervention, participants, and setting:** A randomized trial of a strengths-based case management intervention versus passive referral (control) was conducted among NEP attendees requesting and receiving referrals to subsidized, publicly funded opiate agonist treatment programs in Baltimore, MD. **Measurements:** Multivariable Cox regression models were used to identify predictors of treatment retention using an ecological model approach, taking into account factors at the individual, social, and environmental level. **Findings:** Of 245 IDUs, 127 (51.8%) entered opiate agonist treatment, for whom median retention was 7.9 months. The intervention was not associated with longer retention ($p = .91$). Individual-level factors predictive of shorter retention included being employed and greater levels of psychiatric distress. Participants who had prior treatment experience and multiple treatment requests were retained significantly longer. Social factors adversely affecting treatment retention included unstable housing and buying drugs for others. Living further away from the treatment site was an environmental barrier that negatively affected treatment retention. **Conclusions:** Multilevel interventions that address individual, social, and environmental factors are necessary to improve substance abuse treatment retention and treatment outcomes among IDUs referred from NEP. © 2009 Published by Elsevier Inc.

Keywords: Treatment retention; Opioid agonist therapy; Needle exchange; Injection drug use; Strengths-based case management

1. Introduction

In the United States, it is estimated that only 15% to 20% of all active injection drug users (IDUs) are actively engaged in drug abuse treatment at any given time (Haverkos, 1998; Metzger, Navaline, & Woody, 1998). According to UNAIDS (UNAIDS, 2007), 13 million IDUs are in need of drug abuse treatment worldwide. Although several studies have focused

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on identifying factors associated with treatment entry among IDUs (Booth, Corsi, & Mikulich, 2003; Strathdee et al., 2006), fewer have focused on treatment retention.

Longer retention in opiate agonist treatment is one of the most important predictors of reductions in opiate use (Darke et al., 2005; Gossop, Marsden, Stewart, & Treacy, 2002) and improved overall functioning (Flynn, Joe, Broome, Simpson, & Brown, 2003). In particular, retention in methadone maintenance treatment (MMT) has been shown to effectively reduce illicit opiate use among IDUs with subsequent reductions in high-risk behaviors associated with transmission of HIV and other blood-borne pathogens (Esteban et al., 2003; Metzger et al., 1993; Sorensen & Copeland, 2000). Reports suggest that the minimum effective treatment “dose” for substance abuse treatment in reducing opiate use ranges from 3 months to 1 year (Joe, Simpson, & Broome, 1999; Simpson, Joe, & Brown, 1997). However, retention in MMT among IDUs is often poor. Among street-recruited IDUs in Denver, CO, only 60% were retained for at least 3 months (Booth et al., 2003). Among needle exchange program (NEP) users in Seattle, WA, the proportion that were retained in treatment ranged from 45% to 68% at 12 months (Hagan et al., 2000). Among heroin users followed in the Australian Treatment Outcome Study, past-month heroin abstinence at 36 months was reported by most of those receiving methadone maintenance; however, the mean number of treatment episodes in the 36-month follow-up was three (Teesson et al., 2008).

Participation in NEPs has also been positively associated with reductions in high-risk practices such as needle sharing among IDUs (Bastos & Strathdee, 2000; Wodak & Cooney, 2006). Passive referrals from NEPs can serve as an effective bridge to drug abuse treatment (Brooner et al., 1998; Heimer, 1998; Shah et al., 2000; Strathdee et al., 1999). In a randomized controlled trial of a case management intervention offered through the NEP in Baltimore, MD, we observed significantly higher rates of entry into opiate substitution therapy associated with the intervention (Strathdee et al., 2006). We therefore sought to determine the effect of this case management intervention on retention in opiate agonist treatment among IDUs enrolled in the Baltimore NEP, based on an ecological model that considered individual, social, and environmental characteristics that may promote or impede retention.

2. Methods

Between April 2002 and January 2004, IDUs that utilized the Baltimore NEP and were granted a guaranteed referral to one of seven publicly funded opiate agonist treatment slots through the NEP were eligible to participate in a randomized trial to evaluate the effect of a Strengths-Based Case Management (SBCM) intervention on treatment outcomes, including retention. Eligibility criteria included being aged 18 or older, having been enrolled in

the NEP for a minimum of 30 days, and exhibiting symptoms of opiate dependence according to *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* criteria. Methods are described in greater detail elsewhere (Cornelius et al., 2006).

Of the 247 eligible IDUs who requested and were granted an available drug treatment slot by the NEP program staff, 245 (99%) subsequently enrolled in the study. For IDUs who agreed to participate, a signed consent was obtained, and the baseline interview was conducted prior to the treatment intake appointment. HIV testing was conducted using the OraQuick Rapid HIV-1 Antibody Test (OraSure Technologies, Inc., Bethlehem, PA) since we previously showed differences in drug abuse treatment utilization for HIV-infected and uninfected IDUs (Shah et al., 2000). Pre- and posttest counseling was provided in accordance with Centers for Disease Control and Prevention guidelines (Centers for Disease Control and Prevention, 1999).

To limit possible contamination of the intervention condition, participants were randomized to the intervention (case management) or control condition (passive referral) according to the location of the NEP sites. During the first year of recruitment, participants receiving treatment referrals from the NEP sites in West Baltimore were randomized to receive case management, whereas those receiving referrals at East Baltimore NEP sites were randomized to the standard passive referral. Prior to beginning the second year of recruitment, a 1-month washout period took place when no participants were recruited. After the washout period, participants receiving referrals from the East Baltimore NEP sites were randomized to the case management intervention and those in West Baltimore to the standard referral for the remainder of the enrollment period.

IDUs randomized at a NEP site that was assigned to the intervention arm were offered free case management services immediately following their baseline interview. The case management intervention was based on the SBCM model (Rapp, Siegal & Fisher, 1992), whereby case managers assisted the clients in setting treatment goals and helped the clients manage their needs to achieve those goals. SBCM differs from other models in that it is a client-oriented approach, in which the clients are actively involved in formulating their own goals (Rapp et al., 1992).

Compared with earlier studies in which substance users did not receive case management, SBCM has been associated with improved treatment outcomes (Rapp, Siegal, Li, & Saha, 1998; Siegal et al., 1996; Siegal, Li, & Rapp, 2002). Persons being treated for psychiatric disorders have also been shown to benefit from the SBCM approach (Rapp & Chamberlain, 1985). The SBCM model was chosen over other case management models given that NEP participants are already practicing harm reduction, which would be considered a building block, or strength, in the SBCM model.

In this study, case managers assisted clients in handling problems that may have arisen in response to completion of the treatment goals, such as transportation to the treatment

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