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Original Research

Cost-effective way to reduce stimulant-abuse among gay/bisexual men and transgender women: a randomized clinical trial with a cost comparison☆

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ABSTRACT

Objectives: A randomized controlled study was conducted with 422 homeless, stimulant-using gay/bisexual (G/B) men and 29 transgender women (n = 451) to assess two community-based interventions to reduce substance abuse and improve health: (a) a nurse case-managed program combined with contingency management (NCM + CM) versus (b) standard education plus contingency management (SE + CM).

Study design: Hypotheses tested included: a) completion of hepatitis A/B vaccination series; b) reduction in stimulant use; and c) reduction in number of sexual partners.

Methods: A deconstructive cost analysis approach was utilized to capture direct costs associated with the delivery of both interventions. Based on an analysis of activity logs and staff interviews, specific activities and the time required to complete each were analyzed as follows: a) NCM + CM only; b) SE + CM only; c) time to administer/record vaccines; and d) time to receive and record CM visits. Cost comparison of the interventions included only staffing costs and direct cash expenditures.

Results: The study outcomes showed significant over time reductions in all measures of drug use and multiple sex partners, compared to baseline, although no significant between-group differences were detected. Cost analysis favored the simpler SE + CM intervention over the more labor-intensive NCM + CM approach. Because of the high levels of staffing required for the NCM relative to SE, costs associated with it were significantly higher.

Conclusions: Findings suggest that while both intervention strategies were equally effective in achieving desired health outcomes, the brief SE + CM appeared less expensive to deliver.

☆ This study is registered with the Clinical Trials protocol registration system: NCT00926146.

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Introduction

Homeless gay and bisexual (G/B) men and transgender women (GBT) represent a highly vulnerable population in the United States (US) because of their unstable living arrangements, unprotected sexual behaviors, and engagement in drug use.[1–3] It is estimated that 30–45% of GBT young adults may be homeless.[4] In one study among homeless men who have sex with men (n = 20), 25% have reported engaging in unprotected receptive anal intercourse, less than a quarter (20%) reported unprotected insertive anal intercourse, 15% reported unprotected vaginal intercourse, and over half (65%) reported a positive urine drug test.[1] GBT populations in the US have unique risk factors for homelessness which include running away from their families and/or the foster care system due to experiencing stigma related to their sexual orientation[4,5] or early abuse in the home.[6]

Once on the streets, challenges to meet necessities lead many to engage in street currency (e.g. survival sex).[2,3] As a result, one of the main public health concerns for this group is the risk of contracting hepatitis B virus (HBV), a disease which is vaccine preventable.[7,8] Yet, the rate of infection remains high, resulting in high costs in treating hepatitis-related liver diseases.

According to the Centers for Disease Control and Prevention,[9] the leading causes of HBV infections among adults in the US include homosexual activity, injection drug use, and having two or more sexual partners. The presence of other behavioral and health problems such as alcohol abuse, non-injection drug use, or HIV/AIDS often contribute to the aggravation of the liver disease.[10,11]

There are many barriers to improve healthcare services to these 'hidden' populations in the US.[12,13] In recent years, however, researchers and service providers have begun to investigate different strategies to overcome these barriers and reach out to these populations. For instance, two strategies which have been explored in reducing drug use among G/B men include contingency management (CM) and cognitive behavioral therapy (CBT).[14–17] CM often includes different forms of incentives such as vouchers, goods, or services that are intended to reinforce positive behavior and has been found to be effective in reducing substance abuse.[18] CM was also found to be more effective in reducing methamphetamine use and protected receptive anal intercourse among G/B men in comparison to CBT.[16] After a 24-week intervention with substance-dependent homeless men who have sex with men, Reback et al.[14] revealed that participants in CM provided significant more urine samples that were free of stimulant metabolites than the control group.

Nyamathi et al.[19,20] have also been investigating various nurse-led community intervention programs that tailor to the needs of the homeless population who are often involved in drug use and at risk for HBV. These programs included nurse-peer teams which were designed to incorporate protective strategies, improve coping, provide linkages with community resources, and increase the hepatitis vaccination completion rates and knowledge levels.[21,22]

The main purpose of the present study was to conduct a cost analysis of two community-based intervention strategies: (a) nurse case management plus contingency management (NCM + CM); and (b) the standard education plus contingency management (SE + CM) designed to: a) complete hepatitis A virus (HAV)/HBV vaccination; b) reduce stimulant use; and c) reduce number of sexual partners at 4- and 8-month evaluation post intervention. For this article, the goal was to calculate costs associated with the delivery of each intervention model relative to their respective treatment outcomes. We hypothesized that greater personal attention through nurse case management, coupled with contingency management, i.e. NCM + CM, compared with SE + CM, would also lead to higher costs in service delivery for the anticipated intervention outcomes.

Methods

Design

This study was based on the results of a randomized controlled trial (RCT) conducted with gay and bisexual men and transgender women to assess the impact of two community-based intervention strategies on the following intervention outcomes: a) completion of HAV/HBV vaccination; b) reduction in stimulant use; and c) reduction in number of sexual partners at 4- and 8-month evaluation post intervention. In this article, costs associated with the delivery of each intervention model relative to their respective treatment outcomes were calculated. This study was approved by UCLA's and Friend's Research Institute's Institutional Review Boards (IRB) and registered with the Clinical Trials protocol registration system: NCT00926146.

Sample and setting

Our study targeted non-heterosexual populations, which are typically neglected in mainstream public health programs. The resulting sample included 451 homeless, stimulant-using G/B men and transgender women. The purpose of this study was to explore how historically discriminated and neglected populations may respond to rather mainstream public health interventions.

Eligibility criteria included: a) age 18–46 years; b) self-reported being homeless; c) G/B man or transgender woman; d) used stimulants within the previous 3 months (confirmed by urinalysis or by hair analysis if the urine screening could not detect a stimulant metabolite); and e) no self-reported participation in drug treatment in the last 30 days. Exclusion criteria included: a) monolingual speakers of languages other than English or Spanish; and b) persons judged to be cognitively impaired by the research staff. This was assessed by asking the individual to repeat critical aspects of the design and procedures of the study as reported during the consenting process.

In our study, 997 individuals were assessed for eligibility. Ninety-one declined to participate in the study. In total, 455 were excluded from the study because they were not between 18 and 46 years old (n = 120), not gay or bisexual (n = 90), not male to female transgender (n = 29), had a negative hair sample (n = 86), reported no stimulant use within last 3 months (n = 63),