

Regular Article

Adolescents in private chemical dependency programs: who are most at risk for HIV?

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Abstract

Consecutive intakes ($N = 419$) between ages 13 and 18 years to chemical dependency (CD) programs in a large private health plan were interviewed. The prevalence of six HIV risk behaviors was measured and categorized into zero, one, and multiple risk groups. The relationships between both demographic characteristics and substance use with HIV risk behaviors were examined. Approximately half the sample reported at least one risk behavior, with 17% reporting multiple risk behaviors. Those most likely to report multiple risk behaviors were heavy drinking boys, as well as girls who reported using narcotic analgesics. Implications of these findings for pediatricians and CD clinicians are discussed. © 2005 Elsevier Inc. All rights reserved.

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1. Introduction

In 2001, 1,155 new HIV infections among adolescents between the ages of 13 and 19 years were reported to the Centers for Disease Control and Prevention (CDC) from areas of the United States with confidential HIV infection reporting (National Center for HIV, 2002c). Combined with previously reported cases, the cumulative number of reported HIV infections for this age group by December 2001 was 6,588. The prevalence of adolescent AIDS cases remains relatively low, with a cumulative total of 4,428 cases (National Center for HIV, 2002b), but the virus can have a lengthy incubation period. An adolescent infected with HIV

may not develop AIDS until young adulthood or slightly older (31,293 cumulative cases in people aged 13–24 years in 2000) (National Center for HIV, 2002a). Adolescents typically have less contact with health providers (Bartman, Moy, & D'Angelo, 1997; Zimmer-Gembeck, Alexander, & Nystrom, 1997), which may contribute to delayed identification and treatment of HIV. Together, the relatively high rates of infection and limited access to health providers pose a serious threat to adolescent health.

Sexual intercourse is the primary risk factor for HIV infection among adolescents (National Center for HIV, 2002c). The percentage of U.S. high school students who has ever had sexual intercourse dropped from 54% to 46% between 1991 and 2001, and condom use increased from 46% to 58% (for those who had sexual intercourse 3 months prior to the survey). However, among sexually active adolescent students, the prevalence of alcohol and drug use before intercourse has increased from 22% to 26%, emphasizing the growing link between substance use and sexual behavior (CDC, 2002).

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For female adolescents, heterosexual intercourse is the primary risk factor for HIV; for male adolescents, it is homosexual contact (National Center for HIV, 2002c). The literature suggests that young women who are sexually active with both men and women are likely to engage in high-risk sexual experimentation (Cochran & Mays, 1996) and have an increased risk for HIV (Edwards & Thin, 1990; O'Hanlan, 1995).

Needle sharing by injection drug users is the second most prevalent risk behavior for adolescents (National Center for HIV, 2002c). In a national sample of adolescent injection drug users, Williams found an HIV seroprevalence rate of 3.6% (Williams, 1993). Five percent of adolescent infections reported to the CDC in 2001 were contracted directly from injection drug use, and an additional group (2%) contracted HIV by having sexual relations with an injection drug user (National Center for HIV, 2002c).

Alcohol and drug use are associated with high-risk HIV sexual behaviors. However, most studies of this association have been conducted on adult populations. Crack smokers in particular report having multiple sex partners (Booth, Kwiatkowski, & Chitwood, 2000) or engaging in other high-risk sexual behaviors (trading sex for drugs and/or money and having multiple sexual partners) (Hoffman, Klein, Eber, & Crosby, 2000), and several studies link alcohol use to risky sexual behavior (Boscarino et al., 1995; Rees, Saitz, Horton, & Samet, 2001; Scheidt & Windle, 1995; Trocki & Leigh, 1991). Of the few studies examining HIV risk behaviors in adolescents, one compared risk behaviors and knowledge about HIV/AIDS between three groups of adolescents: one with psychiatric disorders, one with substance use disorders, and a control group. Those with substance use disorders had higher rates of HIV risk behaviors than the psychiatric disorders group or the control group, despite similar knowledge about how HIV is transmitted (Deas-Nesmith, Brady, White, & Campbell, 1999). Another study found that HIV-positive adolescents engaged in unprotected sex with casual partners, used multiple drugs, and had sex while under the influence of drugs at higher rates than HIV-negative adolescents (Hein, Dell, Futterman, Rotheram-Borus, & Shaffer, 1995).

Gender differences exist in HIV risk behaviors and route of infection among adolescents (Pugatch et al., 2000; Murphy, Rotheram-Borus, & Reid, 1998). Adolescents and young female adults entering a detoxification center in Massachusetts were more likely to report unsafe-injection drug practices and sexual practices than their male counterparts (Pugatch et al., 2000). Among a cohort of heterosexual adolescents, girls reported more unprotected vaginal and anal sexual encounters, whereas boys reported more partners (Murphy et al., 1998). The type of sexual contact also differed (homosexual vs. heterosexual) in the reported route of HIV infection among girls and boys. HIV-infected girls (whose risk factor was reported or identified) most often reported heterosexual contact, and HIV-infected boys most often reported homosexual contact. In addition, girls

comprise more than half of the reported HIV infections among adolescents (National Center for HIV, 2002b). However, it is not clear whether the relationship between substance use and risk behaviors differs by gender. For example, are there gender differences in the association between the type of substance used and risky behaviors?

Understanding the relationship between adolescent substance use and HIV risk behaviors has important public health and clinical practice implications. Few studies have examined adolescents in chemical dependency (CD) programs and their engagement in HIV risk behaviors. Prior adolescent research has only evaluated the association between overall substance use and risk behaviors, such as sexual intercourse (Strunin & Hingson, 1992), condom use, (Hingson, Strunin, Berlin, & Heeren, 1990), or both (Deas-Nesmith et al., 1999). The studies have not looked at the relationship between specific substances and specific risk behaviors, single or multiple. However, youth participating in multiple risk behaviors are at an even greater risk of contracting HIV. Demographic characteristics (ethnicity, age, and gender) and polysubstance use are also insufficiently studied in relation to adolescent HIV risk behaviors.

To examine the prevalence of HIV risk behaviors among adolescents with alcohol and drug problems, we recruited adolescents entering CD treatment in a large, integrated health maintenance organization. They were asked questions addressing their sexual and injection drug HIV risk behaviors. Specifically, we wanted to address how demographic characteristics and alcohol and drug use are related to levels of HIV risk behaviors. Furthermore, we were interested in whether these relationships are different for boys and girls.

2. Materials and methods

Kaiser Permanente (KP) is the largest health plan in Northern California, with approximately 3.9 million members, representing close to one third of the insured population in the region. The region contains 48 medical facilities. Eighty-eight percent of the membership is commercially insured, 10% is insured through Medicare, and 2% through Medicaid. In general, the membership is well-educated, working, and middle class, with 78% having at least some college education (Gordon, 2000). Sixty-one percent of the families in our sample reported annual household incomes above \$50,000. The four sites in the study were selected because of their geographic and population diversity.

2.1. Study site and program

The study sites were four KP Northern California outpatient CD Programs. Each site offers a treatment program for adolescent members with alcohol and drug problems. Both CD and psychiatry services within the health plan are “carved in” rather than contracted out. The CD programs studied are representative of the major treatment approaches in the

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