Research article

Differences in polysubstance use among youth in the child welfare system: Toward a better understanding of the highest-risk teens☆

Dorian E. Traube [a,*], Lisa M. Yarnell [b], Sheree M. Schrager [c]

[a] *School of Social Work, University of Southern California, 669 W. 34th St., Los Angeles, CA 90089-0411, USA*
[b] *American Institutes for Research, 1000 Thomas Jefferson St., NW, Washington, DC 20007-3835, USA*
[c] *Division of Hospital Medicine, Children's Hospital Los Angeles, 4650 Sunset Blvd, MS #94, Los Angeles, CA 90027, USA*

A R T I C L E   I N F O

A B S T R A C T

The current study extended limited prior work on polysubstance use among youth in the child welfare system (CWS) by addressing their potentially greater risk of engaging in polysubstance use, the causes of interpersonal variation in use, and changes in use over time, particularly at later points of involvement in the CWS. Using longitudinal data from the National Survey of Child and Adolescent Well-Being ($n = 1,178$), a series of time-invariant and time-varying demographic and contextual factors were explored to assess their role both overall and at unique points of involvement in the CWS. A series of unconditional and conditional curve-of-factor models were estimated and results indicated that time-invariant characteristics of ethnicity and gender were not related to polysubstance use. Time-variant characteristics of age and placement were associated with polysubstance use and highlighted the dynamic nature of age as a risk factor. Out-of-home placement was protective against later substance use for youth who had been removed from contexts with their original caretaker where there were higher levels of reported violence. Our results suggest that in the child welfare population, the modeling of multiple substances rather than a single substance in isolation is more informative because it yields information on the confluence of behaviors that tend to occur and evolve together.

Introduction

Studies of teen alcohol and drug use have identified a relationship between heavy alcohol use and subsequent illicit substance use (Pape, Rossow, & Storvoll, 2009). Such findings may suggest that illegal drugs tend to be used in a context of drinking (Odgers et al., 2008), consistent with studies that have shown that combined intake of alcohol and marijuana is the most widespread form of polysubstance use among youth in the United States (Midanik, Tam, & Weisner, 2007). Prior work has extended the modeling of polysubstance use among adolescents in the general population (e.g., Conway et al., 2013; Duncan, Duncan, Biglan, & Ary, 1998; Mason, Kosterman, Hawkins, Haggerty, & Spoth, 2003; Mikulich-Gilbertson, Zerbe, & Riggs, 2014; Morley, Lynskey, Moran, Borschmann, & Winstock, 2015; Odgers et al., 2008) to the unique subgroup of youth in the U.S. child welfare system (CWS; Yarnell, Traube, & Schrager, 2015). This is important given that CWS-involved youth are

potentially at greater risk of the development of substance use problems (Aarons et al., 2008; Aarons, Brown, Hough, Garland, & Wood, 2001; Courtney & Dworsky, 2006; Pilowsky & Wu, 2006; Vaughn, Ollie, McMillen, Scott, & Munson, 2007; Wall & Kohl, 2007) and also may experience differing effects of risk and protective factors than youth in the general population (Traube, James, Zhang, & Landsverk, 2012). This greater risk may be exacerbated among CWS youth who are polysubstance users, as seen among general population youth (Conway et al., 2013; Mason et al., 2003; Mikulich-Gilbertson et al., 2014; Morley et al., 2015; Odgers et al., 2008).

In the current study, we took the next vital step in this research by focusing on key risk factors associated with variation in polysubstance use among CWS youth. This line of inquiry was guided by the social development model (Hawkins & Weis, 1985), which specifies key risk factors that contribute to the development of drug use and posits that risks can be mitigated by important social supports during childhood. To address which CWS youth engage in high levels of polysubstance use and how polysubstance use changes over time in this population, we investigated a series of time-invariant and time-varying demographic and contextual factors to assess their role both overall and at unique points of involvement in the CWS.

Theoretical and Empirical Background

CWS-involved youth have been consistently found to have higher rates of diagnosable substance use disorders than youth in the general population (Aarons et al., 2001; Courtney, Terao, & Bost, 2004; Vaughn et al., 2007). Social development theory (Hawkins & Weis, 1985) offers a meaningful explanation for the increased rate of substance use disorders in this population. The central hypothesis of this theory is that an individual's behavior will be prosocial or antisocial depending on the predominant behaviors, norms, and values held by others to whom the individual is bonded. Furthermore, when children develop in a context fraught with disruption to prosocial bonds, as often occurs for youth in child welfare settings, they are at increased risk of developing antisocial behaviors like substance use, delinquency, teenage pregnancy, school misbehavior, and dropping out (Hawkins, Catalano, & Miller, 1992). For example, although the CWS is intended in part to diminish the impact of maltreatment in the home on adolescent substance use, experience in foster care or other out-of-home placement has been associated with substance abuse in adulthood (Grella & Greenwell, 2006; Gutierres, Russo, & Urbanski, 1994; Zlotnick, Tam, & Robertson, 2004).

Empirical explorations have also identified an abundance of demographic, psychosocial, and contextual risk factors for substance use among youth in CWS, including gender, age, history of abuse and exposure to violence (Aarons et al., 2008; Vaughn et al., 2007), lower levels of caregiver monitoring (Wall & Kohl, 2007), and deviant peer networks (Thompson & Auslander, 2007). Yet little is known about factors related to use of multiple substances in this population.

Variation in Estimates of Substance Use and Abuse

Although CWS-involved youth have been consistently found to have higher rates of diagnosable substance use disorders than youth in the general population, there has been considerable variation in the extent of this estimated use (Aarons et al., 2001; Courtney et al., 2004; Vaughn et al., 2007). In the general population, current rates of substance dependence or abuse for adolescents aged 12–17 years is 5% (Substance Abuse and Mental Health Administration, 2015). Aarons et al. (2001) found that 11% of teenagers involved in CWS in San Diego, California, met criteria for a substance use disorder during the previous year; that figure increased to 19.2% based on their lifetime substance use. In two different studies based in the Midwest United States, Vaughn and colleagues (2007) found that 35% of a sample of 17-year-olds in Missouri met criteria for a lifetime substance use disorder. Yet Courtney and colleagues (2004), estimating rates among former foster youth in the Midwest more widely, found that only 7.3% of a comparable age group met criteria for a substance use disorder in their lifetime.

This discrepancy in estimates of substance use among CWS-involved youth likely relates to discrepancies and deficiencies in the statistical modeling of prior studies. Duncan et al. (1998) provided a critical review of the modeling of substance use among adolescents. First, Duncan et al. (1998) emphasized that models of polysubstance use, i.e., use of multiple substances rather than one substance in isolation, may be more informative than models of use of single substances; this is because polysubstance models yield information on the confluence of behaviors that tend to occur and evolve together (Conway et al., 2013; Donovan, 2005; Jessor & Jessor, 1977; Mason et al., 2003; Mikulich-Gilbertson et al., 2014; Morley et al., 2015; Odgers et al., 2008). Additionally, Duncan et al. (1998) emphasized that these processes and models should be understood in light of social contextual factors. These factors may include not only characteristics that are stable, or time invariant (such as gender), but also those that represent dynamic, time-varying processes (such as changes in academic performance or peer deviance). Based on these recommendations, we sought to extend prior work to better account for polysubstance use, and the time-invariant and time-varying contextual factors related to this use, in the unique and understudied population of CWS youth.

Current Study

The current study extended the limited prior work on polysubstance use among CWS youth by focusing on critical topics raised by prior research: (a) the potentially greater risk of CWS youth regarding drug use, particularly marijuana, as a secondary substance to alcohol and (b) the causes of interpersonal variation in use and change in use over time, particularly at later points of involvement in the CWS. We focused on demographic and contextual risk factors that encompass not only