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Prevalence and Predictors of Service Utilization Among Racially and Ethnically Diverse Adolescents in Foster Care Diagnosed With Mental Health and Substance Abuse Disorders

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Abstract

This study examined the prevalence of mental health and substance abuse disorders and service utilization among a racially and ethnically diverse group of foster youth. Self-report data on symptoms and service receipt were used to identify whether groups of adolescents defined by their race and ethnicity were equally likely to receive services given the presence of a mental health or substance use disorder. Study findings showed that Caucasians are more likely to receive mental health services than African Americans. Race was not a significant predictor of accessing substance abuse services. Hispanic ethnicity was not a predictor of receipt of mental health or substance abuse treatment services. Implications for future research, practice, and policy are discussed.

Keywords

foster care; teens; adolescents; disparities; mental health; substance abuse; service utilization

In 2010, 21% ($n = 82,372$) of the 408,425 children placed in foster care were age 16 years and older (United States Department of Health and Human Services [US DHHS], 2011). During that same year, approximately 23,983 young adults age 18 to 20 years exited the foster care system at risk for experiencing poor mental health, education, and employment outcomes (US DHHS, 2011). For many children in foster care, however, poor behavioral and mental health outcomes begin before they reach adolescence (National Institute of Mental Health [NIMH], 2005). A significant body of research documents elevated levels of behavioral and emotional difficulties among children in out of home care relative to socio-demographically similar non-child welfare recipient child populations (Hurlburt et al., 2004; Tremblay, 1999). In fact, estimates of the prevalence of developmental and mental health problems for children in foster care vary from approximately 40% to more than 80% (Burns et al., 2004; Landsverk & Garland, 1999; Hurlburt et al., 2004; Pecora et al., 2005), which is higher than the rates for community samples of children that range from 14 to 25% (Leslie

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et al., 2000; Shin, 2005; Kerker & Dore, 2006). Despite these alarming rates, Hurlburt and colleagues (2004) report that only 28.3% of foster youth with mental health disorders receive specialty mental health services, even when a high percentage (42.4%) meet criteria for clinical-level behavior and emotional difficulties.

However, only recently has much attention been paid to examining the experiences of teens aging out of the foster care system (Massinga & Pecora, 2004; Courtney et al., 2001, 2005). It is imperative to address the numerous challenges and barriers these youth face before mental health symptoms persist and potentially get worse as they transition into adulthood. The current study contributes to the existing body of knowledge relative to this at-risk population by looking into the prevalence of mental health and substance abuse disorders among Caucasian, Hispanic, and African American teens about to age out of the foster care system in the Midwest. Efforts are also dedicated to determining the extent to which they access services to address their disorders. Finally, implications for future research, practice, and policy are discussed.

LITERATURE REVIEW

Adolescents encounter one of the most challenging developmental stages of life. During adolescence, they begin to develop an adult identity and a sense of independence and personal efficacy. Moreover, they are faced with the challenges and rewards of gaining the capacity for intimate relationships and caring for others (Erickson, 1980), as well as taking on the added responsibilities of maintaining self-sufficiency, developing ties to community and social supports, and providing and caring for their own immediate family members (Gore, Aseltine, & Schilling, 2007). Dealing with these developmental milestones is often taxing for foster youth due to increased mental health problems that stem from a chronic history of child abuse and neglect, termination of relationships with birth parents and relatives, multiple placement experiences, and lack of preparation for independent living (Shin, 2005). Consequently, youth transitioning from foster care experience difficulty establishing viable relationships and are more likely to be involved in the criminal justice system and drop out of high school, compared with sociodemographically similar populations with no foster care history (Massinga & Pecora, 2004; Courtney et al., 2001). As a whole, their circumstances are further exacerbated, given that they are at higher risk for teen pregnancy and parenting (Courtney et al., 2005; Furstenberg, 2007). Moreover, studies suggest that these negative outcomes have deleterious effects on their life chances and opportunities as adults (Stein, 2006). In fact, foster care alumni tend to experience higher rates of homelessness, poverty, unemployment, poor mental health outcomes, and drug and alcohol abuse than those who are not placed in foster care during their childhood (Massinga & Pecora, 2004; Macomber et al., 2008; Pecora et al., 2006).

While it is well documented that these outcomes place undue hardship on foster youth as well as their caseworkers and foster parents, no research to date has disaggregated analysis and outcomes by race/ethnicity. That is, it is unknown whether teens of color about to age out of the foster care system are at increased risk for mental health and substance abuse problems relative to their Caucasian counterparts or what factors predict service utilization.

Mental Health Disparities

Although research relative to youth of color aging out of care is scant, there has been increasing attention to quantifying the inequitable service outcomes predominantly experienced among younger youth of color who are still in the foster care system. These studies reveal Hispanic and African American youth in foster care are less likely than their Caucasian counterparts to receive mental health services (Garland, Landseverk, & Lau, 2003; Hurlburt, et al., 2004; Kolko, Seleyo, & Brown, 1999; McCabe et al., 1999). Leslie

and colleagues (2000) further conclude that the frequency of outpatient mental health visits, compared to Caucasians and African Americans, is lower for Hispanics and Asian American youth. Moreover, compared with Hispanic (61%) and African American children (46%), a significantly higher proportion of Caucasian children (71%) receive court ordered referrals for counseling and psychotherapy while placed in out-of-home care (Garland & Bassinger, 1997). Research further suggests that even when Caucasian children report lower externalizing and internalizing symptoms, they are more likely than their Hispanic and African American counterparts to receive mental health services, even after controlling for age, gender, type of maltreatment, and severity of emotional/behavioral problems (Garland et al., 2000).

Kataoka, Zhang, and Wells (2002) report that the rate of unmet mental health needs of Hispanic children in the general population are also greater than that for white, non-Hispanic children. This finding is alarming given the fact that Hispanic adolescents, regardless of child welfare history, experience higher rates of suicidal thoughts, depression, and anxiety symptoms (Institute for Hispanic Health [IHH], 2005; Delgado, 2007). Focusing their analysis particularly on African American children, Kolko and colleagues (1999) concur that they are less likely to receive services than their Caucasian counterparts. Even when African American and Hispanic youth begin treatment, they are more likely than Caucasians to leave treatment prematurely (Sue, Fujino, Hu, Takeuchi, & Zane, 1991).

Substance Abuse Disparities

Untreated mental health disorders only serve to increase the risk of co-occurring disorders among adolescents. Research documents, for example, that depression, conduct disorder and posttraumatic stress disorder (PTSD) all increase substance use and abuse (Birmaher et al., 1996; Wall & Kohl, 2007; Vaughn, Ollie, McMillen, Scott, & Munson, 2007). The prevalence rates are alarming. In the 2003 National Survey on Drug Use and Health (NSDUH), 10.6% of adolescents reported binge drinking, 21.8% had used illicit drugs and 34.3% had used alcohol within the past year, with 8.9% using substances at a level severe enough to be classified as abuse of or dependence on alcohol or illicit drugs (SAMHSA, 2004).

Alarming, maltreated youth may be at even greater risk of substance abuse than youth who were not maltreated due to the additional challenges they often face, as described previously (Wall & Kohl, 2007). In fact, prior research documents that 19.2% of youth in the child welfare system meet abuse/dependence criteria (Aarons, Brown, Hough, Garland, & Woods, 2001). Findings from the National Survey of Child and Adolescent Well-being (NSCAW) also reveal concerning rates of lifetime use, with 38% of children age 11 to 15 years reporting drinking alcohol at some time in their life, 17% reporting marijuana use, 10% reporting inhalant use, and 6% reporting crack, cocaine, or heroin use (USDHHS-ACF, 2005).

Only a few studies have examined rates and predictors of substance abuse and service utilization among adolescents of color in foster care. Aarons, McCabe, Gearity, and Hough (2003) examined ethnic variation in the prevalence of substance use disorders among 936 adolescents, between the ages of 13 and 18 years, who received services in one or more public sectors of care: alcohol and drug treatment, juvenile justice, mental health, public school based services for youth with serious emotional disturbance, and child welfare services in San Diego county, California. Overall, approximately 40% of the sample met criteria for at least one substance use disorder. However, significant racial/ethnic differences in prevalence rates were found in all sectors of care, except in the child welfare system.

In a follow-up study, Aarons, Brown, Garland, and Hough (2004) concluded that youth of color were less likely to receive the least restrictive services (e.g., drug/alcohol outpatient services) and more likely, instead, to end up in juvenile settings, where the prevalence of disparities is most evident. That is, relative to Caucasians, African American, Hispanic and Asian/Pacific Islander youth in the juvenile justice system were significantly less likely to be diagnosed with a lifetime and past year substance abuse disorder (Aarons et al., 2003). Focusing specifically on the foster care population, Vaughn and colleagues (2007) found that 45% of children age 17 years in Missouri reported using alcohol or illicit drugs within the past 6 months; 49% had tried drugs sometime during their lifetime, and 35% met criteria for a substance use disorder.

Heflinger, Chatman, and Saunders (2006) suggest racial/ethnic disparities in the utilization of substance abuse service in the general population are pervasive as well. Specifically, they found that among those enrolled in Medicaid in Tennessee, more Caucasians than African Americans age 12 to 17 years utilized at least one substance abuse service in a given year, despite level of need. However, no studies to date have specifically focused on examining rates and predictors of substance abuse and service utilization among youth from different racial/ethnic backgrounds aging out of foster care.

STUDY OBJECTIVES

Addressing potential gaps in service utilization associated with race or ethnicity is relevant and timely, given the fact that the US DHHS identified racial/ethnic disparities in mental health service use as a major public health problem in its report, *Healthy People 2010* (US DHHS, 2000). The current study, in its attempt to contribute to the mission and goals of eliminating health related disparities, focused on examining the rates and predictors of service utilization to address mental health and drug/alcohol use among youth about to age out of foster care. Specifically, the objectives were: (a) determine rates of selected mental health and substance abuse disorders among racially and ethnically diverse youth aging out of foster care, and (b) examine rates of mental health and drug/alcohol service utilization among this population focusing on disparities in the likelihood of service receipt given the presence of a diagnosable disorder. In light of these objectives, two research questions guided this study:

1. Does the presence of selected mental health and substance use disorders among youth in foster care approaching the transition to adulthood vary by race and/or ethnicity?
2. Are disparities associated with race and/or ethnicity in the likelihood that foster youth will receive mental health or substance abuse services given the need for such services?

METHODOLOGY

Study Design

The current study employed a descriptive analysis based on data collected from the Midwest Evaluation of the Adult Functioning of Former Foster Youth (Midwest Study), a longitudinal study of 732 youth making the transition to adulthood from foster care in Illinois ($n = 474$), Iowa ($n = 63$), and Wisconsin ($n = 195$) (Courtney, Terao, & Bost, 2004). The focal point of this analysis was on data collected through in-person interviews with the young people age 17 to 18 years when still under the jurisdiction of the state child welfare system.

Sample

Before going into the field to conduct interviews, all adolescents in out-of-home care supervised by the public child welfare agency who were between age 17 and 17.5 years and had been in state care for at least 1 year prior to their seventeenth birthday were identified for sampling purposes. The only youth excluded from this population were those who could not participate in the study because of developmental disability, incarceration, or psychiatric hospitalization at the time of the interview or because of severe mental illness that made the interview impossible. Additional reasons for youth being deemed ineligible for the study included runaway or missing person status during the entire field period and current placement out of state. In Iowa and Wisconsin, all youth who fit the sample selection criteria were included in the survey sample; in Illinois, due to size of the population and available funds, a random sample was drawn of approximately 67% of the overall population of eligible youth. Interviews were conducted between May 2002 and March 2003. Of the 758 adolescents eligible for participation in the study, 732 consented to participate and completed an in-person or telephone interview, for an overall response rate of 96.6% (Courtney et al., 2004).

Measures

The Midwest study assesses how well the adolescents are adjusting across several domains, including family history and current family relations, experiences while in out-of-home care, current living arrangements, social support, receipt of independent living services, education, employment, economic hardship, receipt of governmental benefits, health and mental health status and service utilization, sexual behaviors, pregnancy, marriage and cohabitation, children and parenting, delinquency and criminal justice system involvement (Courtney et al., 2004). Data for the study were collected via Computer Assisted Personal Interviewing (CAPI). The in-person CAPI interviews took approximately 90 minutes. Specific to the current study, interviewers were trained to gather mental health diagnostic information using the Composite International Diagnostic Interview (CIDI; World Health Organization, 1998). Designed for use by nonclinicians, the CIDI is a highly structured interview that renders both lifetime and current psychiatric diagnoses according to definitions and criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV). The CIDI subscales used in the Midwest Study are: major depression, panic disorder, social phobia, generalized anxiety disorder, post-traumatic stress disorder, alcohol abuse, alcohol dependence, and substance abuse and dependence. It is important to note that some other disorders found to be prevalent among this population, most notably conduct disorders, were not assessed during the Midwest Study using the CIDI and neither were disorders that are much less common (e.g., schizophrenia). Nevertheless, it is important to identify whether youth with the disorders assessed in this study receive appropriate services and whether service receipt is associated with race or ethnicity. Previous studies (Wittchen, 1994; Wittchen et al., 1991) confirm that the CIDI has good test-retest and interrater reliability, and is appropriate for use in different settings and countries. Courtney and colleagues (2004) provide a full description of how CIDI data were obtained during baseline interviews.

Data on service utilization was gathered via self-report data. Participants were asked to report whether they had received any psychological or emotional counseling and/or if they went to a substance abuse program within the past year. Other Midwest Study self-report data were used to identify potential disparities in service provision by race and/or ethnicity. Race was categorized as: Caucasian, African American, and other race. Also used were answers to a question asked of respondents regarding whether they considered themselves to be of Hispanic ancestry. This question allowed independent assessment of disparities in service provision by race and by Hispanic ethnicity versus other ethnicity. Gender was

included as a covariate, given that the prevalence of the disorders assessed vary by gender. Lastly, the type of care the youth resided in at the time of the interview was included (family foster care; relative foster care; group care; other setting). This inclusion was in recognition of the fact that placement type, in particular group care, may be considered by child welfare authorities to be a form of treatment for mental and behavioral health problems.

Analytic Approach

First of all, descriptive analyses were completed to quantify rates of mental health and substance abuse disorders and service receipt among the racially and ethnically diverse youth in the sample. Chi-square tests were completed to identify associations between selected independent variables (gender, race/ethnicity, and living arrangements) and mental health and substance abuse disorders and service utilization within the past twelve months. Prior to multivariate analyses, dummy variables were created for each of the different ethnic and racial groups. Binary logistic regression was then conducted to determine which factors (i.e., race, ethnicity, gender, living situation, diagnosis of a mental health disorder, and diagnosis of a substance abuse disorder) were predictive of utilization of mental health and substance abuse services.

RESULTS

This section provides a description of the sample, followed by a reporting of significant chi-square findings showing the relationship between respective independent variables noted above and dependent variables (i.e., mental health and substance abuse disorders and service utilization). While significant bivariate and multivariate findings were reported, the reader is encouraged to refer to the tables for other results of interest.

Sample Description

A near equal distribution of male ($n = 356$, 48.6%) and female ($n = 376$, 51.4%) subjects participated in the study. Among those who participated, 432 were age 17 years, 298 were age 18 years, and one was age 19 years. The sample included 226 Caucasians (30.9%), 417 African Americans (57%), and 89 adolescents from mixed racial backgrounds or who identified as Asian/ pacific islander or other (12.2%). This group is referred to as the *other race* group in the analyses. Of the sample, 63 (8.6%) self-identified as Hispanic. Most of the sample ($n = 262$, 35.8%) resided in family foster care, 30.5% ($n = 223$) resided in foster care with relatives, 18% ($n = 132$) were in group care or residential treatment, 9% ($n = 63$) had an independent living arrangement, and less than 1% ($n = 5$) resided in an adoptive home. For purposes of analyses, those placed in an adoptive home, living independently or in other living arrangements were combined, which collectively were 15.6% of the sample ($n = 114$).

Lifetime Prevalence of Mental Health and Substance Abuse Disorders

Participants were assessed to determine if they met diagnostic criteria for depression, dysthymia, generalized anxiety disorder, social phobia, and/or PTSD. The diagnoses were tabulated into one categorical variable (i.e., met or did not meet criteria for at least one diagnosis). As documented in Table 1, a total of 24.8% ($n = 168$) of the sample met lifetime criteria for at least one of these mental health disorders. The percentage of teens identified as having had a mental health disorder varied between those placed in foster homes ($n = 65$, 26.4%), group care ($n = 41$, 33.9%), relative care ($n = 37$, 17.6%), and those residing in other living arrangements ($n = 25$, 25%), ($\chi^2(3) = 11.5$, $p < .01$). With respect to the first research question, data suggest significant racial differences relative to who among this population is diagnosed with a mental health disorder ($\chi^2(2) = 15.44$, $p < .001$). Caucasians were mostly likely to meet the criteria for one of the mental health disorders assessed ($n = 70$, 33.3%), followed by those in other racial categories ($n = 23$, 28.4%) and African

Americans ($n = 73$, 19.1%). Approximately 23% of Hispanics ($n = 14$) met criteria for a mental health disorder, which was not a statistically significant difference from the percentage of non-Hispanics who received services. Furthermore, results suggest significant gender differences relative to who were not diagnosed with a psychiatric disorder, with female participants being more likely than male participants to be diagnosed ($\chi^2(1) = 37.5$, $p < .001$). Finally, a higher percentage of participants with mental health disorders (42.4%) than those without disorders (15%) utilized services ($\chi^2(1) = 62.97$, $p < .001$).

Table 2 shows the prevalence of lifetime drug/alcohol disorders. Of the entire sample, 21.8% ($n = 144$) met criteria for at least one substance abuse disorder (i.e., either marijuana, stimulants, sedatives, opiates, cocaine, PCP, inhalants and/or some other drug). Once again, with respect to the first research question, data suggest that race, but not ethnicity, is associated with the prevalence of the disorders assessed. Caucasians were most likely to have experienced a drug/alcohol disorder ($n = 72$, 34.1%), followed by those in other racial categories ($n = 25$, 31.2%) and African Americans ($n = 47$, 12.8%), ($\chi^2(2) = 40.51$, $p < .001$). Fourteen Hispanics (23%) were diagnosed with a drug or alcohol disorder, but the rate of diagnosis did not vary by Hispanic ethnicity. Male participants ($n = 82$, 25.9%) were more likely than female participants ($n = 62$, 17.9%) to be diagnosed with a substance abuse disorder ($\chi^2(1) = 6.35$, $p < .01$). Moreover, participants residing in other living arrangements and in group care were more likely than those residing in foster care and relative care to be diagnosed with a substance abuse disorder ($\chi^2(3) = 33.03$, $p < .001$). The co-occurrence of mental health and substance abuse was another challenge facing adolescents in this sample. In fact, of the 168 adolescents in this sample diagnosed with a mental health disorder, 25% ($n = 43$) also met criteria for an alcohol or substance abuse disorder.

Service Utilization

During initial interviews, the adolescents were also asked if they received psychosocial counseling or medications for emotional problems (i.e., services that might be considered an appropriate service response) within the past year. The data do not allow assessment of whether a youth who had a particular mental health disorder received services targeting that disorder or that the service was effective, only that the youth reported that some form of mental health service in the past year was provided. As reported in Table 3, 36% ($n = 243$) of the overall sample utilized mental health services. With respect to the second research question, the descriptive findings suggest that race, but not Hispanic ethnicity, is associated with receipt of mental health services among this population. Caucasians and youth in the racial category of other were more likely to receive mental health services (52.4% and 51.8%, respectively) than African Americans (24.8%) ($\chi^2(2) = 57.62$, $p < .001$). Approximately two-fifths of Hispanics (39.7%) reported receiving mental health services, but this number did not differ significantly from the percentage of non-Hispanics who received services. In addition, male participants were no more likely than female participants to utilize services. Reflecting group care use as a treatment-oriented setting, more than 50% of the respondents in group care reported receiving mental health services, a significantly higher percentage than those who resided in foster care, relative care, or other living arrangements ($\chi^2(3) = 32.9$, $p < .001$). More than three-fifths ($n = 103$, 61.3%) of those utilizing mental health services met diagnostic criteria for one of the mental health disorders, in contrast to just more than 25% ($n = 140$, 27.6%) of those who did not meet the diagnostic criteria used in this study ($\chi^2(1) = 62.19$, $p < .001$). It is important to keep in mind that many of the youth who did not meet the diagnostic criteria used in this study who reported receiving mental health services may have suffered from disorders not assessed by the study (e.g., conduct disorder).

Table 4 provides the proportion of youth who were and were not receiving substance abuse services. Nearly 13 percent ($n = 85$) of the entire sample received substance abuse treatment services within the past year. However, with respect to the second research question, significant differences were noted by race in service utilization between the different racial groups ($\chi^2(2) = 8.96, p < .01$). Participants in the racial category of other were most likely to receive substance abuse treatment services (22.4%), followed by Caucasians (15.5%) and African Americans (10.8%). While 15.9% of Hispanics reported receiving services, no significant differences were detected between them and their non-Hispanic counterparts. Bivariate results also suggest male participants ($n = 65, 18.3\%$) are twice as likely as female participants ($n = 35, 9.3\%$) to utilize substance abuse services ($\chi^2(1) = 12.53, p < .001$). Moreover, those residing in group care ($n = 38, 28.8\%$) were more likely than those residing in foster care, relative care, or other living arrangements to utilize these services ($\chi^2(3) = 37.49, p < .001$). Finally, while only 36.8% ($n = 53$) of those diagnosed with a substance abuse disorder were receiving services to treat their symptoms, very few ($n = 32, 6.2\%$) of those who did not meet diagnostic criteria received such services.

Results of Logistic Regression

While bivariate analyses suggest the presence of racial disparities in receipt of mental health and substance abuse services, it is possible that these disparities reflect differences by race in the need for services or in the likelihood that youth will be placed in treatment-oriented settings, such as group care. As shown in Tables 5 and 6, logistic regression analyses attempt to address this possibility by controlling for both the need for services, as assessed by the presence of a CIDI disorder and the type of placement in which each youth resided at the time of the interview. The odds ratios in these tables represent the effects of the independent variables on the dichotomous outcomes (i.e., utilized or did not utilize mental health and substance abuse services).

Mental health service utilization—In the first logistic regression model (Table 5), the independent variables were entered as predictors to determine whether race or ethnicity were associated with mental health service utilization after controlling for other potential confounding factors. A test of the full model with the set of predictors against the null model with no predictors was significant ($\chi^2(8) = 115.6, p < .001$), indicating that the set of predictors distinguishes between adolescents who utilized mental health services and those who did not. Even after controlling for mental health diagnosis, gender and type of placement, results showed that compared with African Americans, Caucasians ($b = 1.11$, Wald (1) = 29.82, $p < .001$) and the Other group ($b = 1.23$, Wald (1) = 16.75, $p < .001$) of adolescents were more than three times more likely to receive mental health services. Results showed that when compared to residing in foster care, placement in a group home facility significantly increased the odds of receiving services, ($b = .917$, Wald (1) = 13.11, $p < .001$). Findings also suggest that adolescents with a mental health disorder were approximately four times more likely to receive mental health services, compared with those who were not diagnosed ($b = 1.28$, Wald (1) = 39.13, $p < .001$). Hispanic ethnicity and gender did not predict utilization of mental health services.

Substance abuse service utilization—The same model was applied to determine if any of the factors predict utilization of substance abuse services. A test of the full model with the set of predictors against the null model with no predictors was significant, $\chi^2(8) = 104, p < .001$, indicating that the set of predictors distinguishes between adolescents who utilized substance abuse services and those who did not. As reported in Table 6, race and Hispanic ethnicity were not significant predictors of utilizing substance abuse services after controlling for the other covariates. Gender, however, was found to be a significant predictor, with males being almost two times more likely to utilize substance abuse services

than females ($b = .645$, Wald (1) = 5.58, $p < .05$). Finally, adolescents' with a substance abuse disorder were nine times more likely to access services than those who were not diagnosed with a disorder ($b = 2.20$, Wald (1) = 60.91, $p < .001$).

The logistic regression analyses were completed again to determine whether the effect of race changes as a result of place of residency in Illinois, Iowa, and Wisconsin. With place of residency entered as a covariate in both the mental health and substance abuse service utilization models, the effect of race did not change. That is, place of residency did not account for racial disparities in mental health service utilization.

DISCUSSION

The purpose of this study was to determine the prevalence of mental health and substance abuse disorders and service utilization among racially and ethnically diverse youth who were about to age out of the foster care system and to identify if there are racial and ethnic disparities in service receipt. It is well documented that compared with non-foster youth in the general population, foster youth are more likely to experience mental health problems (Shin, 2005; Farmer et al., 2001). Approximately 25% of the adolescents in the current sample met criteria for at least one mental health disorder even though the study did not assess externalizing behavioral disorders. Caucasians were more likely than African Americans and the *other* group of adolescents to be diagnosed with a mental health disorder. This finding contrasts with previous findings that suggest mental health disorder prevalence rates may be similar across racial/ethnic groups (McCabe et al., 1999). While studies document that Hispanic children in the general population are at greater risk for PTSD, anxiety, and depression than non-Hispanic and African American children (National Alliance for Hispanic Health, 2001), the current study found that Hispanic adolescents in out-of-home care were no more likely than their non-Hispanic counterparts to be diagnosed with a mental health disorder.

This study found that approximately one-fifth of foster youth approaching the transition to adulthood suffer from one or more substance use disorders. Caucasian and youth of *other* races were more likely than African Americans to suffer from one of these disorders, but we found no association between Hispanic ethnicity and substance use disorders. Given that prior research suggests African American and Latino youth in the juvenile justice system are significantly less likely to have lifetime and past year substance abuse disorders (Aarons et al., 2003), more research is needed to confirm the prevalence of substance abuse disorders among adolescents who receive services across systems of care.

Mental Health Service Utilization

Scholars posit that disparities in the service sector may stem from varying use of these mental health services and resources among communities of color, as well as different beliefs about mental health, etiology, and effective ways to intervene (McCabe et al., 1999; IHH, 2005). Bureaucratic and complicated intake procedures, long waits for appointments, language barriers, and limited operating hours may also contribute to service underutilization (González-Ramos & González, 2005). Study findings showed that African Americans adolescents were three times less likely to receive mental health services than Caucasians and adolescents of *other* races, even after controlling for the presence of a mental health disorder. These findings add to the findings of previous research on racial disparities in mental health service receipt. While Leslie and colleagues (2000) found that Caucasian and African American children in foster care have comparable rates of outpatient mental health service utilization, Garland and Bassinger (1997) report that a significantly higher proportion of Caucasian children receive counseling and psychotherapy than do Hispanic and African American children while in care. Future research is needed to better

clarify the rate and magnitude of racial disparities in mental health service provision for adolescents in foster care. The finding that non-Hispanics were no more likely than their Hispanic counterparts to access mental health services is surprising. Prior research suggests that even when Caucasian children report lower externalizing and internalizing symptomology, they are more likely than Latino children to receive mental health services (Garland et al., 2000). Future research is needed to determine if indeed there are no disparities in service utilization among Latino teens approaching age 18 years. The small number of adolescents identified as Hispanic in this study may have limited the statistical power available to pick up ethnic differences in service receipt.

In the meantime, routine assessment of mental health for foster youths using standardized diagnostic tools that are informed and enriched by their input on how “mental health” is operationalized could reduce racial disparities in service receipt. Linking caseworkers and human services providers with the organizational, systemic, and monetary supports to ensure adolescents in foster care obtain needed services and supports while in care and as they transition into adulthood is also necessary. Services to prepare adolescents in foster care for independent living funded through the Foster Care Independence Act of 1999 can support caseworkers in efforts to help decrease disparate outcomes.

Substance Abuse Service Utilization

Bivariate findings suggest that a higher percentage of Caucasians and adolescents in the *other* category received substance abuse services than did African Americans. However, after controlling for other factors including lifetime experience of a substance use disorder, race was not a significant predictor of substance abuse service utilization. Findings also suggest there were no differences in substance abuse disorders and service utilization rates between Hispanics and non-Hispanics. Previous research assessing the risk and prevalence of substance abuse disorders among youth in foster care is scant. One study, focusing on Medicaid recipients, reported that more Caucasians than African Americans aged 12 to 17 years utilized at least one substance abuse service in a given year, despite level of need (Heflinger et al., 2006). While the current study findings provide no evidence of racial or ethnic disparities in provision of substance abuse services to foster youth, clearly collaboration between child welfare workers and community service providers is necessary to ensure that all youth who are in need of substance abuse services are able to access and utilize them.

Gender and Type of Placement

As indicated in the results, while a higher proportion of female participants were likely to be diagnosed with mental health disorders, male participants, in contrast, were significantly more likely to experience a substance abuse disorder. Multivariate findings showed gender differences relative to utilizing drug/alcohol services, but not mental health services. This finding confirms previous research, suggesting males are more likely than females to utilize at least one substance abuse service in a given year (Heflinger et al., 2006).

Relative to type of placement, the analyses showed adolescents' placed in-group care experienced higher proportions of mental health and substance abuse problems and service utilization relative to those placed in foster care or relative care. Previous findings regarding the relationship between type of placement and substance abuse and service utilization vary. While Wall and Kohl (2007) found no association existed between placement type and adolescent substance abuse, other studies reported that placement in an independent living situation significantly increased the likelihood of current and lifetime substance use and disorder (Vaughn et al., 2007). Furthermore, Leslie and colleagues (2000) reported that rates of mental health service use are lower among those placed with family members than those

placed with non-family members. Shin (2005), on the other hand, found “no significant difference in mental health service use among four different placement types: non-kinship care, kinship care, supervised independent living, and other placement settings” (p. 1079). These inconsistent findings highlight the need to conduct studies that explore the contextual reasons why children and adolescents in foster care are more or less likely to access services while placed in different settings. For example, do certain care providers (i.e., foster parents, relative providers, and/or group home providers) have more or less accessibility to culturally appropriate resources and services? Do they lack monetary supports or benefits, and/or are they more likely to encounter systemic barriers? Do relative placements buffer the negative impacts of mental health and substance abuse disorders and subsequent access to needed and appropriate services? Research should also take into account the ways in which placement settings themselves, including treatment oriented group care and therapeutic foster care, are aspects of mental health treatment.

Study Limitations and Implications for Future Research on Racial and Ethnic Disparities

While examining the findings in the current study, it is important to take note of several limitations. Most importantly, not all mental health disorders were assessed via the study interview. In particular, the study did not assess externalizing disorders (e.g., conduct disorder). The use of lifetime diagnosis rather than current diagnosis probably decreases the strength of association between diagnosis and recent service utilization. Moreover, data on diagnosis do not reveal the full scope of the problems adolescents encounter. Many adolescents have clusters of symptoms severe enough to be distressing (Angold, Costello, Farmer, Burns, & Erkanli, 1999; Stiffman et al., 2000). Therefore, relying solely upon strict diagnostic criteria can be misleading and undermine the assessment of the severity of symptoms. Moreover, data on quantity and quality of culturally appropriate mental health and substance abuse services were not collected. Future research should be devoted to examining how *quantity and quality* of services buffer the effects of negative mental health outcomes as foster youth transition into adulthood.

Missing data, noted in the study tables, on some of the survey items that lead to some of the diagnoses assessed in the study also call for caution in interpreting study findings. The relatively small sample size for some subgroups of interest, particularly Hispanics and youth in the *other* race/ethnicity category, means that the analyses might have missed some between-group differences due to limited statistical power.

To better illuminate the experiences of the Hispanic subsample it would have been advantageous to know how long they resided in the United States. Ebin and colleagues (2001) documented that American-born Latino adolescents are more likely to exhibit “problematic risk behaviors” (e.g., sexual activity, arrest history, alcohol/drug use) than their foreign born and less acculturated Latino counterparts. Other studies suggest Caucasians and American-born Latino adolescents have higher lifetime and past year prevalence rates of substance abuse than their recently immigrated counterparts (Vega & Gil, 1999). Curtis (1990) explained that failure to take into account the consequences of acculturation among Hispanics might actually exacerbate the underutilization of mental health services by Hispanic families. Future research warrants an empirically rigorous, theoretically driven analysis of the ways in which immigration, migration patterns, and acculturative stressors might serve as precursors and pathways to Hispanic mental health and child welfare involvement (Garcia, 2009). Moreover, given the fact that Mexicans, Cubans, El Salvadoreans, and Puerto Ricans may express and manifest symptomatology differently, it is important to collect data relative and specific to each subgroup and disaggregate analyses accordingly. Future research might be devoted to over-sampling and reaching out to Spanish-speaking adolescents and their parents. Along with Hispanics, African Americans are more likely to turn to the religious community for support (Delgado, 2007; Heflinger et

al., 2006). Careful analyses of the distinct and culturally specific ways mental health problems are manifested among adolescents and families of color in the foster care system would help practitioners, policy-makers, and researchers alike develop and implement more effective interventions.

The results of the current study underscore the need to take into account the multiple and intersecting pathways to child welfare and mental health system involvement (Garcia, 2009). Future research should be devoted to unlocking the specific contextual and cultural factors that both increase and decrease the risk and onset of mental health disorders and pathways to services among racially and ethnically diverse adolescents in foster care. For example, research should better consider geographic location and accessibility to services when examining disparate outcomes in mental health and child welfare systems of care. Howell and McFeeters (2008) found that Hispanic and African American children in urban areas receive less mental health care than their Caucasian counterparts, and that the disparity persists for Hispanic children residing in rural areas (Howell & McFeeters, 2008). In the current study, when place of residence by state was entered into the logistic regression models as a covariate, the effect of race did not change. Future studies, however, need to examine rates of disorders and service utilization by region, state, city, and community levels in order to pinpoint exactly where inequitable outcomes are more prevalent among children and adolescents in foster care. These analyses can help inform researchers, policy-makers, and practitioners alike on where to target and tailor culturally appropriate services for youth in foster care.

This study did not collect data on how youth in foster care were referred to the mental health and substance abuse services they received. Several studies (e.g., see Farmer et al., 2001; Stiffman et al., 2000) underscore that the knowledge, skills, and resources *gateway providers* possess, all play a pivotal role in connecting youth to culturally appropriate mental health services, and that the increased coordination between child serving systems of care decreases differences in rates of service use between Caucasian and African American children. Given the disparate outcomes in mental health service utilization among youth who participated in the current study, it would be worthwhile for studies to explore the reasons why these disparities remain prevalent among youth about to age out of the foster care system. For example, are certain groups of youth more concerned about the stigma associated with accessing mental health services? Do they have the knowledge, resources, and personal agency to navigate systems of care? Are adequate resources and sufficient training accessible to caseworkers and foster parents to ensure all children aging out of foster care, regardless of race/ethnicity, are capable of thriving as young adults?

CONCLUSION

Despite these limitations, this study contributes to the existing child welfare literature by assessing prevalence and predictors of service utilization among a diverse sample of adolescents about to age out of the foster care system. Study findings add to concerns raised regarding racial disparities in receipt of mental health services and call for better ongoing assessment of the mental health of youth in foster care and more focused attention by child welfare and mental health service providers to the need for mental health services of African Americans. Clearly, “additional research is needed to clarify the mechanisms underlying disparities in unmet need for mental health care among children because these different mechanisms have unique intervention and policy implications” (Kataoka et al., 2002, p. 1552). Additional research is also needed to shed more light on whether racial and ethnic disparities exist in receipt of substance abuse treatment services and the causes of any observed disparities.

Overall it is clear that adolescents aging out of the foster care system “often miss out on the critical preparation stage, transition itself that gives young people an opportunity to ‘space out’, provides a time for freedom, exploration, reflection, risk taking and identity search” (Stein, 2006, p. 427). In many respects, they miss out on life opportunities and advantages of full citizenship. Moreover, compared to other adolescents, adolescents with untreated mental illness are 14 times more likely to not receive a high school education; four times more likely to not attend college, vocational school, or be employed; three times more likely to engage in illegal activities, and six times more likely to become pregnant (Clark & Davis, 2000). Failure to address the mental health and behavioral health needs of foster youth is adding insult to injury. For adolescents in the foster care system, these risk factors also place great demands on caseworkers and foster parents—serving as one of the many factors that lead to burnout and high turnover (Kerker & Dore, 2006). Identifying and addressing racial and ethnic disparities in service provision to adolescents in foster care should be a top priority for child welfare researchers, practitioners, and policymakers.

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TABLE 1

Foster Youth Diagnosed With Mental Health (MH) Disorders

Characteristics	With MH disorder, <i>n</i> (%)	Without MH disorder, <i>n</i> (%)	Total (<i>n</i>)	Chi-Square
Race				15.44**
African American	73 (19.1)	309 (80.9)	382 (56.8)	
Caucasian	70 (33.3)	140 (66.7)	210 (31.2)	
Asian, Native, or Other	23 (28.4)	58 (71.6)	81 (12)	
Missing			59	
Hispanic ethnicity				N.S.
Yes	14 (23.0)	47 (77.0)	61 (91.1)	
No	154 (25.1)	459 (74.0)	613 (90.9)	
Missing			58	
Gender				37.50**
Male	47 (14.3)	281 (85.7)	328 (48.4)	
Female	121 (34.7)	228 (65.3)	349 (51.6)	
Missing			55	
Living arrangements				11.5*
Foster care	65 (26.4)	181 (73.6)	246 (36.3)	
Relative care	37 (17.6)	173 (82.4)	210 (31)	
Group care	41 (33.9)	80 (66.1)	121 (17.9)	
Other ^I	25 (25)	75 (75)	100 (14.8)	
Missing			55	
MH service utilization				62.97**
Yes	103 (42.4)	140 (57.6)	243 (36)	
No	65 (15)	367 (85)	432 (64)	
Missing			57	
Total (Valid)	168 (24.8)	509 (76.2)	677 (100) ²	

* $p < .01$;

** $p < .001$.

^I“Other” includes adoption, independent living, or other living arrangements.

²Table totals differ from the overall sample size of 732 due to missing data on key variables. Only valid percentages are reported.

TABLE 2

Foster Youth Diagnosed With Substance Abuse Disorders

Characteristics	With D/A disorder, <i>n</i> (%)	Without D/A disorder, <i>n</i> (%)	Total (<i>n</i>)	Chi-Square
Race				40.51**
African American	47 (12.8)	321 (87.2)	368 (55.8)	
Caucasian	72 (34.1)	139 (65.9)	211 (32)	
Asian, Native, or Other	25 (31.2)	55 (68.8)	80 (12.1)	
Missing			73	
Hispanic ethnicity				N.S.
Yes	14 (23)	47 (77.0)	61 (9.2)	
No	128 (21.4)	471 (78.6)	599 (90.8)	
Missing			72	
Gender				6.35*
Male	82 (25.9)	234 (74.1)	316 (47.7)	
Female	62 (17.9)	285 (82.1)	347 (52.3)	
Missing			69	
Living arrangements				33.03**
Foster care	45 (18.4)	200 (81.6)	245 (37)	
Relative care	26 (13.2)	171 (86.8)	197 (29.8)	
Group care	32 (26.9)	87 (73.1)	119 (18)	
Other ¹	41 (40.6)	60 (59.4)	101 (15.3)	
Missing			70	
D/A service utilization				94.45**
Yes	53 (62.4)	32 (37.6)	85 (12.8)	
No	91 (15.8)	486 (84.2)	577 (87.2)	
Missing			70	
Total (Valid)	144 (21.8)	518 (78.2)	662 (100) ²	

Note. D/A = drug/alcohol.

* $p < .01$;

** $p < .001$.

¹“Other” includes adoption, independent living, or other living arrangements.

²Table totals differ from the overall sample size of 732 due to missing data on key variables. Only valid percentages are reported.

TABLE 3

Foster Youth Receiving Mental Health (MH) Services

Characteristics	MH services, <i>n</i> (%)	No MH services, <i>n</i> (%)	Total (<i>n</i>)	Chi-Square
Race				57.62 [*]
African American	103 (24.8)	312 (75.2)	415 (57.2)	
Caucasian	118 (52.4)	107 (47.6)	225 (31.1)	
Asian, Native, or Other	44 (51.8)	41 (48.2)	85 (11.7)	
Missing			7	
Hispanic ethnicity				N.S.
Yes	25 (39.7)	38 (60.3)	63 (8.7)	
No	240 (32)	423 (38)	663 (91.3)	
Missing			6	
Gender				N.S.
Male	123 (34.7)	231 (65.3)	354 (48.6)	
Female	144 (38.4)	231 (61.6)	375 (51.4)	
Missing			3	
Living arrangements				32.9 [*]
Foster care	94 (35.9)	168 (64.1)	262 (35.9)	
Relative care	58 (26.1)	164 (73.9)	222 (30.5)	
Group care	74 (56.5)	57 (43.5)	131 (18)	
Other ^I	41 (36)	73 (64)	114 (15.6)	
Missing			3	
MH disorder				62.19 [*]
Yes	103 (61.3)	65 (38.7)	168 (24.9)	
No	140 (27.6)	367 (72.4)	507 (75.1)	
Missing			57	
Total (Valid)	243 (36)	432 (64)	675 (100.0) ²	

^{*}
 $p < .001$.

^I“Other” includes adoption, independent living, or other living arrangements.

²Table totals differ from the overall sample size of 732 due to missing data on key variables. Only valid percentages are reported.

TABLE 4

Foster Youth Receiving Substance Abuse Services

Characteristics	D/A services, <i>n</i> (%)	No D/A services, <i>n</i> (%)	Total (<i>n</i>)	Chi-Square
Race				8.96 [*]
African American	45 (10.8)	371 (89.2)	416 (57.2)	
Caucasian	35 (15.5)	191 (84.5)	226 (31.1)	
Asian, Native, or Other	19 (22.4)	66 (77.6)	85 (11.7)	
Missing			5	
Hispanic ethnicity				N.S.
Yes	10 (15.9)	53 (84.1)	63 (8.7)	
No	88 (13.2)	577 (86.8)	665 (91.3)	
Missing			4	
Gender				12.53 ^{**}
Male	65 (18.3)	290 (81.7)	355 (48.6)	
Female	35 (9.3)	341 (90.7)	376 (51.4)	
Missing			1	
Living arrangements				37.49 ^{**}
Foster Care	28 (10.7)	234 (89.3)	262 (35.8)	
Relative Care	15 (6.7)	208 (93.3)	223 (30.5)	
Group Care	38 (28.8)	94 (71.2)	132 (18.1)	
Other ¹	19 (16.7)	95 (83.3)	114 (15.6)	
Missing			1	
D/A disorder				94.45 ^{**}
Yes	53 (36.8)	91 (63.2)	144 (21.8)	
No	32 (6.2)	486 (93.8)	518 (78.2)	
Missing			70	
Total	85 (12.8)	577 (87.2)	662 (100.0) ²	

Note. D/A = drug/alcohol.

^{*}*p* < .01;

^{**}*p* < .001.

¹“Other” includes adoption, independent living, or other living arrangements.

²Table totals differ from the overall sample size of 732 due to missing data on key variables. Only valid percentages are reported.

TABLE 5

Predictors of Mental Health (MH) Service Receipt

Characteristics	B	Wald	df	p	Odds ratio
Race					
African American (reference group)	—	—	—	—	—
Caucasian	1.11	29.82	1	*	3.04
Other race	1.23	16.75	1	*	3.43
Hispanic ethnicity					
Yes	-.337	.979	1	N.S.	.714
No (reference group)	—	—	—	—	—
Gender					
Male	-.064	.121	1	N.S.	.938
Female (reference group)	—	—	—	—	—
Living arrangements					
Foster home (reference group)	—	—	—	—	—
Relative care	.042	.033	1	N.S.	1.043
Group care	.917	13.11	1	*	2.50
Other ^I	.170	.406	1	N.S.	1.19
MH disorder					
Yes	1.28	39.13	1	*	3.59
No (reference group)	—	—	—	—	—

* $p < .001$.

^I "Other" includes adoption, independent living, or other living arrangements.

TABLE 6

Predictors of Substance Abuse Service Receipt

Characteristics	B	Wald	df	p	Odds ratio
Race					
African American (reference group)	—	—	—	—	—
Caucasian	-.212	.446	1	N.S.	.809
Other race	.502	1.31	1	N.S.	1.65
Hispanic ethnicity					
Yes	-.248	.239	1	N.S.	.780
No (reference group)	—	—	—	—	—
Gender					
Male	.645	5.58	1	*	1.91
Female (reference group)	—	—	—	—	—
Living arrangements					
Foster home (reference group)	—	—	—	—	—
Relative care	-.456	1.25	1	N.S.	.634
Group care	.996	8.65	1	**	2.71
Other ^I	.007	.000	1	N.S.	1.01
D/A disorder					
Yes	2.20	60.91	1	***	9.03
No (reference group)	—	—	—	—	—

Note. D/A = drug/alcohol.

* $p < .05$;

** $p < .01$;

*** $p < .001$.

^I "Other" includes adoption, independent living, or other living arrangements.