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Smoking Behaviors among Adolescents in Foster Care: A Gender-Based Analysis

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Abstract

Background and Objectives—Adolescents in foster care are at high risk for cigarette smoking. However, it is not clear how their smoking behaviors vary by gender. The present study examined lifetime and current smoking among males and females, and explored gender-specific risk factors for engagement in smoking behaviors.

Method—Data from the Multi Site Evaluation of Foster Youth Programs was used to evaluate patterns of smoking among adolescents aged 12–18 years (*N*=1,121; 489 males, 632 females).

Results—Males and females did not differ significantly in rates of lifetime and current smoking, or in the age of smoking initiation and number of cigarettes smoked on a typical day. Gender-based analyses revealed that older age and placement in group homes or residential treatment facilities were associated with heightened risk of smoking among males. In contrast, sexual minority status (i.e. non-heterosexual orientation) and increased childhood victimization were associated with heightened risk of smoking among females. A history of running away was linked to smoking in both genders.

Conflict of Interests: The authors report no conflicts of interest.

Conclusion—Gender should be considered when designing intervention programs to address cigarette smoking among foster youth, as the stressors associated with smoking may differ for males and females.

Keywords

cigarette smoking; adolescents; foster care; child welfare; gender differences

Introduction

Tobacco use is associated with over 450,000 deaths annually in the United States, as well as direct medical costs of over 50 billion dollars per year (Fettes & Aarons, 2011). Smoking initiation occurs primarily in adolescence, making this period critical for primary prevention and cessation intervention efforts (Hayatbakhsh, Mamun, Williams, O'Callaghan, & Najman, 2013; Nelson et al., 2008). Although the prevalence of adolescent smoking declined substantially in recent years, some vulnerable populations have not exhibited the same decline (Braciszewski & Colby, 2015). Smoking rates remain high among emotionally and behaviorally disturbed youths (Sussman, Arriaza, & Grigsby, 2014), homeless adolescents (Baggett & Rigotti, 2010), and those with non-traditional sexual orientation (Lee, Griffin, & Melvin, 2009).

Adolescents in foster care are considered a unique vulnerable population, as they possess multiple risk factors known to increase the likelihood of smoking (Braciszewski & Colby, 2015). Youths placed in foster care generally come from disadvantaged backgrounds, characterized by exposure to child maltreatment, parental psychopathology and substance use, and chronic poverty (Courtney, 2009; Fettes & Aarons, 2011; Shpiegel, 2016). Following their removal from biological families, these youth may experience additional risks, such as placement instability, frequent school transitions and insensitive caregiving on the part of their foster parents (Shpiegel, 2016). Such negative experiences during childhood were found to increase the risk of smoking initiation (Iakunchykova et al., 2015; McFarlane et al., 2005; Siegel, Benbenishty & Astor, 2016; Zahn, Smith, Warner, North & Wilhelm, 2016). Consequently, foster youth tend to exhibit higher rates of smoking compared to youths in the general population, with 30%–60% reporting lifetime smoking, and 10%–40% reporting current smoking (Braciszewski & Colby, 2015; Coleman-Cowger, Green, & Clark, 2011; Fettes & Aarons, 2011; Scott, Munson, McMillen, & Ollie, 2006; Siegel et al., 2016; Snyder & Medeiros, 2013). The rates of smoking may be even higher among certain vulnerable subgroups within the foster care population, such as youths who have experienced homelessness, residential placements, or criminal justice involvement (Hudson & Nandy, 2012; Smith, Chamberlain, & Eddy, 2010; Strack, Anderson, Graham, & Tomoyasu, 2007). Adolescents who “age-out” of foster care without a permanent living arrangement may also be more vulnerable for engagement in risky behaviors, including substance use (Braciszewski & Colby, 2015; Kohlenberg, 2002; Pilowsky & Wu, 2006).

Regarding sociodemographic determinants of smoking, a strong association of gender has been well documented in the literature (Fettes & Aarons, 2011; Mermelstein, 1999; Johnston, O’Malley, Miech, Bachman, & Schulenberg, 2015; O’Loughlin, Paradis, Renaud,

& Gomez, 1998; Stott, 2012; Wang, Herting, & Tung, 2008; World Health Organization, 2007). In recent years, males and females have been reporting comparable smoking rates in early adolescence, however, males tend to smoke more frequently as they approach young adulthood (Fettes & Aarons, 2011; Miech et al., 2015). To our knowledge, the extent to which gender differences apply to youths in foster care has not been previously evaluated, as research on this population has been scant (Braciszewski & Colby, 2015; Siegel et al., 2016; Zahn et al., 2016). In studies of child welfare-involved youth (i.e. those placed in foster care, as well as those remaining with biological families following a maltreatment investigation), lifetime and current cigarette smoking rates were roughly similar for males and females (Fettes & Aarons, 2011; Heneghan et al., 2015). However, these studies did not focus exclusively on foster youth, and did not evaluate gender-specific risk factors for engagement in smoking behaviors.

Understanding how risk factors for smoking may vary by gender is critical for designing effective screening and intervention procedures (Mermelstein, 1999; Robinson & Klesges, 1997). Recent studies suggest that gender is a critical factor when assessing the reasons for smoking, and gender-specific content should be incorporated in prevention and intervention programs (Ausems, Mesters, Van Breukelen, & De Vries, 2009; Chung & Joung, 2014; Sekulic, Ostojic, Vasilj, Coric, & Zenic, 2014). The social-ecology theory provides a useful framework for understanding the potential impact of gender on youths` behavioral outcomes (Bronfenbrenner, 1994; Dishion, Capaldi, & Yoerger, 1999). When applied to foster youth, this theory suggests that the social environment (e.g. cultural norms associated with gender, race/ethnicity, sexual orientation), along with community systems (e.g. child welfare factors, such placement type and stability) and family-related risks (e.g. exposure to child maltreatment) collectively influence substance use behaviors (Braciszewski & Colby, 2015; Fettes & Aarons, 2011; Lo & Cheng, 2007; Stott, 2012). Gender exerts an influence at many levels of the social ecology, as certain risk factors appear more frequently among males (e.g. placement in group homes and other residential settings; see U.S. Department of Health and Human Services, 2015), whereas others appear more frequently among females (e.g., sexual abuse; see Sedlak et al., 2010). However, existing studies have not focused on gender-specific risk factors for cigarette smoking among adolescents in foster care. Thus, the purpose of the present study is to address the aforementioned gaps by (1) examining gender differences in smoking behaviors among adolescents in the foster care system; and (2) exploring whether demographic indicators, childhood victimization experiences and child welfare factors differentially impact male and female smoking.

Method

Dataset and Procedure

This research is based on a secondary analysis of data from the Multi-Site Evaluation of Foster Youth Programs, a study designed to assess the effectiveness of four independent living programs in California and Massachusetts. Each program provides independent living services to eligible foster youth, including life skills instruction, case management, employment preparation, and tutoring and/or mentoring services. Participants were interviewed three times – a baseline interview, conducted shortly after being referred to the

program, and two follow-up interviews, conducted approximately one and two years later. The sample was accumulated between years 2003 and 2006 (sites varied on the start and end date of the evaluation). Detailed information about the design and procedures of the evaluation can be found in previously published work (Courtney, Zinn, Johnson, & Malm, 2011; U.S. Department of Health and Human Services, 2008a, 2008b). The current analysis uses data from *three* participating sites in California – two in Los Angeles county and one in Kern county. Data from the Massachusetts site was excluded, because it was obtained from youths residing in *therapeutic foster care*, who represent a somewhat different population as compared to youths in the other sites (i.e. likely to have greater mental, emotional or physical needs, leading to school failure and/or externalizing behaviors, including substance use) (Courtney et al., 2011).

Sample

The present study is based on a cross-sectional analysis of baseline wave of data collection across the three sites (N=1,195). Only youths with complete information on all variables of interest were included in the analysis. Following the implementation of list wise deletion, 74 youth with missing data were excluded, and a final sample of 1,121 was obtained (94% of the original sample). To examine possible bias resulting from list wise deletion, the final sample (n=1,121) and the excluded cases (n=74) were compared on gender, age, race/ethnicity and sexual orientation. The two groups were not significantly different on any of these indicators. The characteristics of the final sample are presented in Table 1.

Measures

In addition to youths` demographic indicators (i.e. gender, age, race/ethnicity, sexual orientation), three sets of variables were included in the analysis: (1) childhood victimization; (2) child welfare factors; and (3) smoking behaviors.

Childhood victimization—Two childhood victimization variables have been examined: non-sexual victimization by caregivers (e.g. physical, emotional, neglect), and lifetime sexual abuse by adults or peers. *Non-sexual victimization* was measured as a continuous variable by using a sum of 16 dichotomous (yes/no) items ($\alpha = .83$) asking about ways in which caregivers may have mistreated the youth *before* their first entry into foster care. Examples included “Did your caregivers often fail to provide regular meals for you so that you had to go hungry or ask other people for food”; “Did any of your caregivers ever throw or push you, for example, push you down a staircase or push you into a wall”; and “Did any of your caregivers ever lock you in a room or closet for several hours or longer”. Higher summative scores on this scale were indicative of increased victimization. To measure lifetime *sexual abuse*, youth were asked if anyone had ever touched or kissed them against their will, or attempted to do so; and if anyone ever had intercourse, oral sex or anal sex with them against their will, or attempted to do so. Youth who responded “yes” to *any* of these questions were designated as having a history of sexual abuse.

Child welfare factors—Three child welfare factors were included in the analysis: placement type at the time of the interview, placement instability, and a history of running away.

Placement type was coded as: (1) non-relative foster home; (2) with relatives (3) group home/residential treatment facility; and (4) other setting (e.g. with a friend or roommate, friend's family, homeless shelter). *Placement instability* was measured by two variables: a total number of foster homes youth lived in since first entering foster care, and a total number of group homes/residential treatment facilities youth lived in during the same time period. Finally, *a history of running away* was determined by asking if youth had ever ran away from a foster home or a group home (defined by staying away for at least one night).

Smoking behaviors—To assess *lifetime smoking*, participants were asked if they had ever smoked a cigarette (yes/no). Those who responded "yes" were asked to indicate how old they were when they first smoked an entire cigarette. To assess *current smoking*, participants were asked on how many days they smoked a cigarette during past 30 days. Youth who reported smoking on at least one day in the past month were asked to indicate how many cigarettes they smoked on a typical day during this period.

Analytic Strategy

Univariate analyses were performed to describe the characteristics of the sample. Bivariate analyses (i.e. chi-square tests and t-tests) were conducted to compare males` and females` smoking behaviors and to examine the relationships between demographics, victimization experiences, child welfare factors and rates of lifetime and current smoking. Finally, binary logistic regression analyses were performed to assess the contribution of the above mentioned variables to males` and females` lifetime and current smoking. All analyses were performed in SPSS version 21.0.

Results

Sample Description

Approximately 55% of youths were female and over 85% were racial or ethnic minority (i.e. Black, Hispanic or Other). About 16% of males and 23% of females identified as sexual minority. On average, participants reported two non-sexual victimization experiences prior to entering foster care, and nearly 1 in 3 reported a history of sexual abuse. Both sexual and non-sexual victimization were higher among females. At the time of the baseline interview, most participants lived with relatives (43%) or in non-relative foster homes (41%), though a sizable proportion were placed in group homes or residential treatment facilities (15%). Group home or residential placements were more frequently reported among males. The typical participant reported living in three different foster homes and one residential facility within their lifetime experience in foster care. In addition, approximately 1 in 4 youth reported ever running away from a placement. With regards to smoking behavior, about 42% of youths identified as lifetime smokers and 17% identified as current smokers. The average age of smoking initiation was approximately 12.5 years. Youths reporting *current smoking* consumed an average of 3.5 cigarettes on days in which they smoked. Further details are presented in Table 1.

Bivariate Analyses

Males and females reported similar rates of lifetime (42.7% vs. 41.0%; χ^2=.28, p=.59) and current smoking (18.8% vs. 16.3%; χ^2=1.04, p=.30), as well as similar ages of smoking initiation (M=12.44 vs. M=12.89; t=−1.72, p=.08). The number of cigarettes smoked on a typical day was also similar for both genders (M=3.78 vs. M=3.34; t=.52, p=.60).

Gender-specific relationships between demographics, victimization histories, child welfare factors and smoking behaviors are presented in Tables 2 (males) and 3 (females). Being older was associated with higher rates of smoking among males (*lifetime*: t=−5.89, p<.001; *current*: t=−5.54, p<.001) and females (*lifetime*: t=−2.63, p=.009; *current*: t=−2.81, p=.005). Racial/ethnic differences in *lifetime* smoking were significant for males (χ^2=31.47, p<.001) and females (χ^2=20.24, p<.001), however, differences in *current* smoking were significant for females only (χ^2=17.62, p=.001). Overall, non-Hispanic Whites of both genders reported highest rates of lifetime and current smoking, while African-Americans reported lowest rates. Sexual minority females reported higher rates of *current* smoking than heterosexual females (χ^2=14.89, p<.001), though this trend was not present for males.

Increased non-sexual victimization was associated with higher rates of lifetime and current smoking for males (*lifetime*: t=−2.88, p=.004; *current*: t=−2.14, p=.034) and females (*lifetime*: t= −6.77, p<.001; *current*: t=−5.37, p<.001). Similarly, a history of sexual abuse was linked to higher rates of lifetime and current smoking for both genders (*males*: χ^2=3.91, p=.048 and χ^2=5.86, p=.015 respectively; *females*: χ^2=47.84, p<.001 and χ^2=39.64, p<.001 respectively).

The majority of child welfare factors also contributed significantly to smoking behaviors. Among males and females alike, rates of lifetime and current smoking differed by current placement type (*males*: χ^2=45.30, p<.001 and χ^2=27.62, p<.001; *females*: χ^2=11.36, p=.010 and χ^2=22.71, p<.001). Adolescents of both genders placed in group homes or residential treatment facilities reported higher rates of smoking compared to those placed in relative or non-relative foster homes. Placement instability also contributed significantly to smoking behaviors. Males and females residing in more congregate care placements had higher rates of lifetime (*males*: t=−4.79, p<.001; *females*: t=−4.06, p<.001) and current smoking (*males*: t=−3.01, p=.003; *females*: t=−3.60, p<.001). Males residing in more foster homes reported higher rates of current smoking only (t= −1.90, p=.029), while females residing in more foster homes reported higher rates of both lifetime (t=−3.71, p<.001) and current smoking (t=−3.47, p=.001). Finally, a history of running away was associated with higher rates of lifetime and current smoking for both genders (*males*: χ^2=22.14, p<.001 and χ^2=20.46, p<.001; *females*: χ^2=51.71, p=.010 and χ^2=55.59, p<.001)

Multivariate Analyses

Table 4 summarizes the results of binary logistic regression analyses examining the impact of demographics, victimization histories, and child welfare factors on male and female lifetime and current smoking. Among males, the risk of lifetime smoking increased 33% for every year of increase in their age (OR=1.33, p=.001). Moreover, residence in group homes or residential treatment facilities was associated with over 200% increase in the risk of

lifetime smoking as compared to residence in non-relative foster homes (OR= 2.18, p=.019). Conversely, African-American race lowered the risk of lifetime smoking by over 70% as compared to non-Hispanic White race (OR=.26, p<.001). When current smoking was examined, older age remained a significant predictor in the analysis (OR=1.46, p<.001), while placement type and race/ethnicity became non-significant. Furthermore, a history of running away increased the risk of current smoking by more than 80% (OR=1.82, p=.045).

Among females, African-American race lowered the risk of lifetime smoking by nearly 60% (OR=.41, p=.002), while sexual victimization increased such risk by over 90% (OR=1.92, p=.001). Non-sexual victimization also heightened the risk of lifetime smoking, such that each additional victimization experience has resulted in approximately 13% risk increase (OR=1.13, p<.001). Moreover, a history of running away increased the lifetime smoking risk by over 200% (OR=2.67, p<.001). For current smoking, African-American race (OR=.28, p=.001), sexual and non-sexual victimization (OR=2.04, p=.008 and OR=1.10, p=.004 respectively), and a history of running away (OR=3.24, p<.001) remained significant predictors in the analysis. Additionally, sexual minority orientation was associated with over 200% increase in current smoking risk, even when the other factors were controlled (OR=2.52, p<.001).

Discussion

Foster youth were previously found to exhibit high rates of cigarette smoking, putting them at risk for adverse health consequences later in life (Braciszewski & Colby, 2015; Siegel et al., 2016). In the present study, slightly over 40% identified as lifetime smokers, while about 17% identified as current (i.e. past 30 days) smokers. Examination of gender differences revealed that males and females had similar rates of lifetime and current smoking, as well as similar ages of smoking initiation and number of cigarettes smoked on a typical day. Nevertheless, important differences emerged in risk factors associated with smoking among males and females.

Cigarette smoking rates in the current sample were within the lower range reported in the literature. Other studies reported higher rates - for instance, among foster youth in New England, 62% identified as lifetime smokers, and 46% smoked in the past three months (Braciszewski & Colby, 2015). The lower rates of smoking reported in the current sample might be due to the fact that the majority of youths were African-American or Hispanic, with less than 15% identifying as non-Hispanic White. According to Monitoring the Future Survey, both African-American and Hispanic youth consistently report less smoking compared to Whites (Johnston et al., 2015). The influence or race and ethnicity is further suggested, as among White youth included in this study, lifetime smoking rates were close to 60%, and past-month smoking rates were about 27%.

Interestingly, the smoking rates reported in the present study were roughly similar to those of same-aged peers in the general population. During the years in which this data was collected (i.e. 2003–2006), lifetime smoking rates among tenth graders were about 39%, while past month smoking rates were about 15% (Johnston et al., 2015). Nevertheless, while smoking rates for the general population youth declined substantially in recent years

(Johnston et al., 2015), smoking rates for foster youth appear to remain relatively stable. In a sample of foster youth from California collected in 2012, 49% identified as lifetime smokers and 25% identified as current smokers (Siegel et al., 2016). In a sample of foster youth from Connecticut collected in 2015, rates of lifetime smoking were 45%, while rates of current smoking were 18% (Zhan et al., 2016). The similarity of these newer rates to ones reported in the current sample illustrates that prevention and intervention programs targeting foster youth may be needed.

Consistent with the social-ecology framework, risk factors at different levels of the system (e.g. family, community) significantly influenced youths` smoking behaviors. Furthermore, in multivariate analyses, the impact of several risk factors varied by gender. Sexual and non-sexual victimization were more prevalent among females, and these experiences were associated with female smoking only. In contrast, residential settings were more prevalent among males, and placement in such settings was associated with male smoking only. A possible explanation for these findings is that females who experience various forms of victimization are likely to develop internalizing problems, such as depression, anxiety and posttraumatic stress disorder (Keyes et al., 2012). These difficulties may, in turn, lead to increased likelihood of smoking, as a way to alleviate internal distress. Among males, stressful circumstances may translate to externalizing problems, which may result in residential placements that promote smoking initiation through negative peer influences or other factors. Overall, smoking behaviors among foster youth appear to be influenced by a complex interplay among various situational, familial and individual factors, as suggested by the social-ecology perspective (Stokols, 1996).

Noteworthy, both males and females reporting a history of running away presented heightened risk of smoking in the current sample. Running away may serve as proxy for delinquent behavior, which was previously reported to increase the risk for smoking among child welfare-involved youths (Fettes & Aarons, 2011). Running away may also increase the risk for sexual victimization (Thompson, Bender, Lewis, & Watkins, 2008), which could subsequently be associated with cigarette smoking initiation.

This study provides valuable practice implications. First, our findings reveal that smoking is fairly common among foster youth - even those belonging to racial and ethnic minority groups. In this regard, child-welfare agencies should increase screenings of smoking behaviors when working with these youth, and provide appropriate interventions when necessary. Prevention and treatment programs specifically targeting this population are warranted, preferably in settings easily accessible by foster youth. Traditional behavioral health services may be difficult to access for some foster youth, either due to system-related barriers (e.g. lack of attention on the part of foster parents, lack of funding), or because of unwillingness on the part of the youths themselves (Braciszewski & Colby, 2015). School-based programs may also be difficult to access due to frequent school transitions experienced by these youth (Shpiegel, 2016). Since foster youth may live in environments characterized by tolerance for smoking and less support for quitting smoking (Fettes & Aarons, 2011), targeted service provision for this population is greatly needed. Consistent with the social-ecology perspective, effective interventions should incorporate cultural,

psychological, and environmental factors associated with smoking behaviors, while accounting for interdependencies that exist among various risks (Stokols, 1996).

Particular attention should be given to gender when designing prevention and intervention programs for youths in foster care. Adolescent males residing in congregate care settings, as well as those with histories of running away, may require frequent screenings of smoking behavior and provision of cessation interventions when necessary. Among females, sexual minority orientation, increased childhood victimization (especially sexual), and a history of running away may warrant screenings to detect smoking behaviors.

Limitations

The findings of the present study should be interpreted in light of its limitations. First, the sample is restricted to several counties in one state, and may not be representative of all youths in foster care. The current sample is particularly limited in the number of non-Hispanic White youth, which should be accounted for in future studies. Second, findings are limited by the cross-sectional nature of the analysis. Causal inferences about the impact of various risk factors on male and female smoking cannot be made from this investigation. Relatedly, unexamined factors may have contributed to variations in smoking behaviors among males and females. For instance, we did not directly examine factors such as mental health, delinquency or associations with deviant peers, all of which were found to be associated with smoking in past investigations (Siegel et al., 2016). Future research should examine these characteristics to better understand the relationships between youths` gender and various smoking behaviors. Finally, there was no assessment of the use of other tobacco and nicotine containing products in this study. Thus, researchers should explore their use among adolescents involved with foster care. Currently, virtually no information exists on the use of smokeless tobacco, e-cigarettes, cigars and hookah (i.e. waterpipe). These forms of consuming tobacco are common among youths in the general population (Chapman & Wu, 2014; Fielder, Carey, & Carey, 2012), and their use should be evaluated among adolescents in foster care.

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Table 1

Descriptive Statistics for the Study Sample (N=1,121)

Variable	Males (n=489) % or Mean (SD)	Females (n=632) % or Mean (SD)	Overall % or Mean (SD)
Demographics			
Age (years)	15.7 (1.24)	15.9 (1.19)	15.8 (1.22)
Non-Hispanic White	12.5	14.2	13.5
African-American	40.1	37.3	38.5
Hispanic	36.2	39.4	38.0
Other race	11.2	9.0	10.0
Sexual minority *	15.7	22.8	19.7
Childhood Victimization			
Non-sexual ^	1.64 (2.68)	2.27 (3.17)	1.99 (2.98)
Sexual	14.3	41.5	29.6
Child Welfare Factors			
Non-relative foster home	42.5	39.7	40.9
With relatives	38.4	46.0	42.7
Group home/residential	17.4	12.3	14.5
Placed in other setting	1.6	1.9	1.8
# of foster homes	3.22 (3.43)	3.19 (3.07)	3.20 (3.23)
# of group/residential	1.12 (2.22)	.96 (2.15)	1.03 (2.18)
Ever ran away	22.9	27.7	25.6
Smoking Behaviors			
Lifetime smoking	42.7	41.0	41.7
Past 30 day smoking	18.8	16.3	17.4
Age of smoking initiation	12.44 (2.83)	12.89 (2.85)	12.69 (2.85)
# of cigarettes ^^	3.78 (7.18)	3.34 (4.31)	3.55 (5.84)

* Sexual minority youth included those who self-identified as homosexual, bisexual or “something else”.

^ Average number of non-sexual victimization experiences prior to entering foster care.

^^ Average number of cigarettes on days in which smoking has occurred.

Table 2

Bivariate Relationships between Demographics, Victimization Histories, Child Welfare Factors and Lifetime and Current Smoking: Males (n=489)

Variable	Lifetime Smoking		Current Smoking	
	Yes (%)	*No (%)*	*Yes (%)*	*No (%)*
Demographics				
Age (*M*)	**16.10**	**15.47**	**16.28**	**15.61**
Race/ethnicity				
Non-Hispanic White	**65.6**	**34.4**	27.9	72.1
African-American	**29.1**	**70.9**	15.3	84.7
Hispanic	**49.7**	**50.3**	19.2	80.8
Other race	**43.6**	**56.4**	20.0	80.0
Sexual orientation				
Heterosexual	43.2	56.8	18.4	81.6
Sexual minority	40.3	59.7	20.8	79.2
Childhood Victimization				
Non-sexual (*M*)	**2.04**	**1.33**	**2.26**	**1.49**
Sexual victimization				
No	**40.8**	**59.2**	**16.9**	**83.1**
Yes	**54.3**	**45.7**	**30.0**	**70.0**
Child Welfare Factors				
Placement type				
Non-relative foster home	**38.9**	**61.1**	**14.9**	**85.1**
With relatives	**31.9**	**68.1**	**13.8**	**86.2**
In group/residential	**72.9**	**27.1**	**38.8**	**61.2**
In other settings	**75.0**	**25.0**	**25.0**	**75.2**
# of foster homes (*M*)	**3.51**	**3.00**	3.92	3.05
# of group/residential (*M*)	**1.71**	**.68**	**1.91**	**.94**
Ever ran away				
No	**36.9**	**63.1**	**14.3**	**85.7**
Yes	**62.5**	**37.5**	**33.9**	**66.1**

Significant findings (p<.05 or below) are bolded.

Table 3

Bivariate Relationships between Demographics, Victimization Histories, Child Welfare Factors and Lifetime and Current Smoking: Females (n=632)

Variable	Lifetime Smoking		Current Smoking	
	Yes	*No*	*Yes*	*No*
Demographics				
Age (*M*)	**16.09**	**15.8**	**16.1**	**15.8**
Race/ethnicity				
Non-Hispanic White	**53.3**	**46.7**	**26.7**	**73.3**
African-American	**30.1**	**69.9**	**9.3**	**90.7**
Hispanic	**46.2**	**53.8**	**17.7**	**82.3**
Other race	**43.9**	**56.1**	**22.8**	**77.2**
Sexual orientation				
Heterosexual	39.5	60.7	**13.1**	**86.9**
Sexual minority	46.5	53.5	**27.1**	**72.9**
Childhood Victimization				
Non-sexual (*M)*	**3.32**	**1.54**	**4.07**	**1.92**
Sexual victimization				
No	**29.5**	**70.5**	**8.4**	**91.6**
Yes	**57.3**	**42.7**	**27.5**	**72.5**
Child Welfare Factors				
Placement type				
Non-relative foster home	**40.2**	**59.8**	**17.1**	**82.9**
With relatives	**36.8**	**63.2**	**11.0**	**89.0**
In group/residential	**56.4**	**43.6**	**33.3**	**66.7**
In other settings	**58.3**	**41.7**	**16.7**	**83.3**
# of foster homes (*M*)	**3.75**	**2.79**	**4.31**	**2.97**
# of group/residential (*M*)	**1.48**	**.61**	**1.97**	**.77**
Ever ran away				
No	**32.2**	**67.8**	**9.4**	**90.6**
Yes	**64.0**	**36.0**	**34.3**	**65.7**

Significant findings (p<.05 or below) are bolded.

Table 4

Contribution of Demographics, Victimization Histories and Child Welfare Factors to Males` and Females` Lifetime and Current Smoking: Binary Logistic Regression Analysis (N=1,121)

	Lifetime smoking		Current Smoking	
Males (n=489)	**OR**	**CI**	**OR**	**CI**
Age	**1.33** **	1.12–1.59	**1.46** **	1.16–1.84
African-American	**.26** ***	.13–.50	.58	.28–1.20
Hispanic	.57	.30–1.09	.63	.30–1.29
Other race	.45	.20–1.01	.65	.25–1.65
Sexual minority	.95	.54–1.68	1.09	.56–2.13
Non-sexual victimization	1.03	.95–1.11	1.00	.92–1.10
Sexual victimization	1.42	.77–2.61	1.59	.81–3.10
Placed with relatives	.75	.47–1.18	.88	.48–1.61
Placed in group/resident.	**2.18** *	1.13–4.19	1.78	.90–3.54
Placed in other setting	4.76	.83–27.23	1.40	.24–7.96
# of foster homes	.96	.90–1.02	1.00	.94–1.08
# of group/resident.	1.10	.97–1.24	1.02	.92–1.14
Ever ran away	1.56	.92–2.66	**1.82** *	1.01–3.28
Females (n=632)	**OR**	**CI**	**OR**	**CI**
Age	1.02	.87–1.20	1.12	.89–1.40
African-American	**.41** **	.23–.71	**.28** **	.13–.58
Hispanic	.88	.51–1.50	.61	.32–1.17
Other race	.67	.31–1.42	.68	.28–1.67
Sexual minority	1.28	.84–1.96	**2.52** ***	1.50–4.24
Non-sexual victimization	**1.13** ***	1.06–1.20	**1.10** **	1.03–1.18
Sexual victimization	**1.92** **	1.31–2.82	**2.04** **	1.20–3.47
Placed with relatives	1.33	.89–2.00	.90	.51–1.57
Placed in group/resident.	1.05	.56–1.98	1.34	.66–2.73
Placed in other setting	2.13	.59–7.61	.90	.16–4.86
# of foster homes	.96	.89–1.03	.95	.88–1.03
# of group/resident.	1.11	.99–1.26	1.04	.94–1.16
Ever ran away	**2.67** ***	1.69–4.24	**3.24** ***	1.86–5.63

Non-Hispanic White serves as a reference category for race/ethnicity comparisons; non-relative foster home serves as a reference category for placement type comparisons.

Significant results are bolded;

* $p<.05$;

** $p<.01$;

*** $p<.001$