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Abstract

The present analysis was guided by a gendered pathways-based theoretical model and examined relationships between childhood victimization and current attachment, psychological distress and substance use among 406 women with histories of victimization who were on probation and parole in an urban Kentucky county. Structural equation modeling examined relationships among childhood victimization, attachment, psychological distress, and substance use. Additionally, we examined the mediational role that attachment plays in relationships between childhood victimization and both psychological distress and substance use. The data fit the models properly. Psychological distress was significantly predicted by childhood victimization, and adult attachment partially mediated this relationship. Childhood victimization did not significantly predict substance use; however, attachment did. The findings suggest that attachment may be an important factor to further understand and address in relation to psychological distress and substance use among women with histories of victimization who are involved in the criminal justice system.

Keywords

women; victimization; pathways; probation; parole

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Introduction

The number of women presently involved in the U.S. criminal justice system has grown quickly in recent years, with current data indicating involvement of 1 out of every 89 women in the country (Minton, 2013; Pew Center on the States, 2009). In 2011, almost one million women were sanctioned under community corrections, including probation and parole (Maruschak & Parks, 2012). The skyrocketing increase in women's criminal justice involvement is largely attributed to: 1) The War on Drugs; 2) mandatory minimum sentencing; and 3) the lack of programming to meet women's needs (Bloom, Owen, & Covington, 2004; Tripodi & Pettus-Davis, 2013). Research focused on women involved in the criminal justice system suggests that they often experience repeated victimization, psychological distress, mental illness, coping via self-medication with substance use, limited social support, and poor physical health (Browne, Miller, & Maguin, 1999; Covington, 2007; Hall, Golder, Conley, & Sawning, 2012; Salina, Lesondak, Razzano, & Weilbaecher, 2007; Salisbury & Van Voorhis, 2009; Widom & Ames, 1994). Although numerous studies document high prevalence of these and other adverse experiences among justice-involved women, few studies have focused on understanding relationships between them and identifying potential points of intervention. This study draws upon the gendered pathways approach to address these research and practice gaps.

Gendered Pathways Perspective

The gendered pathways approach emerged as a conceptual framework for understanding the ways in which women's paths to criminal justice involvement differ from men's paths, particularly in terms of victimization, psychological distress, and substance use (Daly, 1992; Mulvey, 2013; Salisbury & Van Voorhis, 2009). As detailed by Salisbury and Van Voorhis (2009), this perspective argues that women's lawbreaking activity is influenced by "factors either (a) not typically seen with men, (b) typically seen with men but in even greater frequency with women, or (c) seen in relatively equal frequency but with distinct personal and social effects for women" (p. 543), based upon the work of several criminal justice scholars (Belknap & Holsinger, 2006; Chesney-Lind & Shelden, 2004; Gavazzi, Yarcheck, & Chesney-Lind, 2006; Holsinger, 2000; Holtfreter & Morash, 2003; Reisig, Holtfreter, & Morash, 2006). Work in this area highlights the significance of victimization in women's criminal justice involvement (Komarovskaya, Booker Loper, Warren, & Jackson, 2011; Salisbury & Van Voorhis, 2009; Tripodi & Pettus-Davis, 2013).

Findings from several studies indicate that women involved with the criminal justice system are significantly more likely to have experienced victimization as children and adults than their male counterparts. A study with 1,030 men and 500 women incarcerated in Texas found that 26% of the women reported a history of childhood sexual abuse, in comparison to 4.5% of the men (McClellan, Farabee, & Crouch, 1997). Women were also significantly more likely to report childhood mental/emotional abuse (30% of women; 18% of men), as well as several forms of victimization in adulthood, including physical assault (53% of women; 8% of men), sexual abuse (31% of women; 1% of men), and mental/emotional abuse (44% of women; 12% of men). A more recent study with over 2,700 men and women involved in therapeutic communities in California prisons found that 27% of women

reported experiencing sexual or physical abuse as children, in comparison to 13% of their male counterparts (Messina, Burdon, Hagopian, & Prendergast, 2006). Women were also more likely to report sexual or physical abuse as adults (27% of women, 3% of men). Prior research suggests that 80% of women involved with the criminal justice system report at least one lifetime experience of victimization (Browne et al., 1999; Tripodi & Pettus-Davis, 2013). Although our literature review did not identify similar lifetime comparisons for men involved with the criminal justice system, it did identify that the lifetime prevalence of victimization among women involved with the criminal justice system exceeds the lifetime rate of 56% among women in the general population (Browne et al., 1999; Tjaden & Thoennes, 2000; Wilson & Widom, 2010). Childhood victimization, which, as noted, is highly prevalent among women involved in the criminal justice system, is associated with a 73% increase in risk of criminal justice involvement as a minor (Widom & Ames, 1994). This association continues into adulthood, with childhood victimization being associated with a 30% increase in the likelihood of arrest for violent crime among both men and women (Widom & Ames, 1994).

The gendered pathways perspective asserts that one of the dominant pathways to criminal justice involvement for women begins with childhood victimization, which results in mental health sequelae that fuel self-medicating behaviors, such as substance use, among girls and women (Daly, 1992; Golder, 2005; Salisbury & Van Voorhis, 2009). The high prevalence of mental health problems among women involved with the criminal justice system is well documented (Horowitz, Widom, McLaughlin, & White, 2001; Komarovskaya et al., 2011; Salina et al., 2007; Teplin, Abram, & McClelland, 1996; Wilsnack, Vogeltanz, Klassen, & Harris, 1997). For example, Lynch and colleagues (2012) found that among a sample of 500 incarcerated women, 50% met diagnostic criteria for posttraumatic stress disorder (PTSD) and 23% met diagnostic criteria for major depression. Highlighting distinctions in mental health concerns for justice-involved women and men, another study with 266 incarcerated women and men found that 40.2% of the women met the diagnostic criteria for PTSD compared to 12.5% of the men (Komarovskaya et al., 2011). There is limited research regarding the prevalence of mental health problems among women on probation and parole. However, findings from the same dataset used for the present analyses indicate that women with histories of victimization who are on probation or parole experience high prevalence of mental health concerns, including symptoms of general psychological distress (70%), depression (68%), anxiety (60%), and PTSD (49%; Golder, Higgins, Hall, & Logan, 2014).

Self-medicating behaviors, especially drug use, to manage intense psychological distress are considered key pathways in women's initial and ongoing criminal justice involvement (Chesney-Lind, 2002; Daly, 1992; El-Bassel et al., 1995; Salisbury & Van Voorhis, 2009; Widom, Czaja, & Dutton, 2008). Rates of substance use problems are high for women in this population. In a recent study, 83% of a national sample of women in U.S. jails reported a substance use disorder in their lifetimes and 53% met diagnostic criteria for a substance use disorder during the past year (Lynch et al., 2012). According to the pathways perspective, psychological distress leads to emotional and impulse dysregulation that increases the likelihood that women will use alcohol and drugs to manage this distress (Herman, 1992a; van der Kolk et al., 1996). The relationship is thought to be complex and multi-directional: as women use substances, their engagement in high risk behaviors,

including lawbreaking activities increases, as does their risk of exposure to further victimization (Cohen et al., 2000; Engstrom, El-Bassel, & Gilbert, 2012; White & Widom, 2008). Additional victimization exacerbates distress, substance use, and an ongoing cycle of risks, including risk of involvement in the criminal justice system (Engstrom, Shibusawa, El-Bassel, & Gilbert, 2011; Widom & Ireland, 1995; Wilson & Widom, 2009, 2010). While women's involvement in drug trade activities tends to be minimal or peripheral (e.g., selling small amounts to support personal use, living with intimate partners who sell drugs), tougher drug laws have led to increased criminal justice involvement for women involved in relatively low-level activities (Lapidus, Luthra, & Verman, 2004).

While the gendered pathways perspective describes connections between victimization, mental health problems, and substance use among justice-involved women, the perspective does not specify ongoing relational processes or psychological mechanisms that may underlie the pathway between childhood victimization and adult psychological distress and substance use. One such process, which, to the best of our knowledge, has yet to be explored with women on probation and parole, involves adult attachment and its possible role in the psychological and substance use sequelae experienced by women exposed to childhood victimization.

Adult Attachment

Attachment theory, originally formulated by John Bowlby (1969, 1973, 1980), states that secure attachment to a caregiver provides children with a secure base from which to explore their surroundings. Bowlby argued that attachment is influenced by early survival-based experiences between an infant and his/her caregivers (e.g., parent(s), grandparent(s), guardian(s), other family members, childcare providers), and evidence has accumulated to support this claim (Bowlby, 1988; Cassidy & Shaver, 1999; Rutter, 1995; Sroufe, 2005). Based on experiences with primary caregivers, children develop expectations or working models of their caregivers' availability and responsiveness (Bowlby, 1980). These models are internalized as children grow up, becoming schemas for how adults see the self and interpersonal relationships over time (Bartholomew & Pearlman, 1994; Bretherton, 1992; Cassidy, 1994; George, Kaplan, & Main, 1995; George & Solomon, 1999; Hazan & Shaver, 1987). These internal working models are especially active in times of stress, providing the child and adult with cognitive scripts that guide predictable patterns of behavior in order to maximize the child's experience of security (Cassidy & Shaver, 1999).

In response to attuned and consistent caregiving, children generally develop working models that reflect secure attachment, which supports resilience when faced with stressors (Cicchetti, Toth, & Lynch, 1995). However, in the absence of sensitive and responsive caregiving, or in response to traumatic events (e.g., childhood victimization; Cassidy & Shaver, 1999), children are more likely to develop working models that reflect insecure attachment. Insecure attachment is conceptualized as occurring along two dimensions: 1) anxiety or fear of abandonment and rejection in relationships; and 2) avoidance or discomfort with closeness and, thus, lack of interest in forming close relationships (Griffin & Bartholomew, 1994). Individuals with insecure attachment score high on at least one of

these dimensions (Minzenberg, Poole, & Vinogradov, 2008; Riggs, Cusimano, & Benson, 2011).

Tenets of attachment theory posit that attachment styles observed in infancy remain relatively consistent through childhood and into adulthood; however, research also suggests that traumatic experiences increase the likelihood that a child will develop insecure attachment, including children who displayed secure attachment prior to the traumatic event (Alexander, 1993; Cassidy & Shaver, 1999; Styron & Janoff-Bulman, 1997). By negatively affecting one's attachment style, these traumatic experiences can inhibit an individual's ability to respond to stressful experiences, including those occurring at a later phase of life (Finkelhor, Ormrod, & Turner, 2009; Herman, 1992b). Additionally, several studies have found attachment to be an important consideration in traumatic effects related to depression (Fowler, Allen, Oldham, & Frueh, 2013), posttraumatic stress disorder (Twaite & Rodriguez-Srednicki, 2004), borderline personality disorder (Minzenberg et al., 2008), substance use, and criminal justice involvement (Golder, 2005), as well as an important consideration in substance use and other high risk behaviors among pregnant and parenting adolescent women (Golder, Gillmore, Spieker, & Morrison, 2005). Despite high prevalence of risk factors for insecure attachment (e.g., victimization, childhood poverty; Chesney-Lind & Pasko, 2004; McClellan et al., 1997; Siegel & Williams, 2003), little research has examined attachment among women involved in the criminal justice system (Borelli, Goshin, Joestl, Clark, & Byrne, 2010; Michalsen, 2011; van IJzendoorn et al., 1997). To the best of our knowledge, none has examined attachment among women on probation and parole (Widom, Dutton, Czaja, & DuMont, 2005). Advancing understanding regarding the role of adult attachment in relationships between childhood victimization, adult psychological distress and substance use among women on probation and parole may provide an eventual point of intervention that can improve well-being and reduce incarceration risk.

Study Aims

The primary aim of this study is to refine and test a hypothesized model of childhood victimization, adult attachment, psychological distress, and substance use among women on probation or parole who have lifetime histories of victimization (Figure 1). We began by evaluating the measurement sufficiency for models of childhood victimization, adult attachment, psychological distress, and substance use. Next, we tested several models of relationships between these phenomena utilizing latent measures of childhood victimization, adult attachment, psychological distress, and substance use. Finally, we tested whether adult attachment mediated relationships between childhood victimization and psychological distress and between childhood victimization and substance use. Based on existing research and theory, it was predicted that childhood victimization would be positively related to insecure attachment, psychological distress, and substance use, and that insecure attachment would mediate the relationships between childhood victimization and both psychological distress and substance use.

Methods

Sample

Participants (*N*= 406) in this cross-sectional study were women on probation and parole from Jefferson County, Kentucky. Recruitment methods included face-to-face recruitment at all probation and parole offices located within the county; direct mailings to women on probation and parole in Jefferson County; advertisements on the website *craigslist*, on public access TV, and in the local newspaper; fliers posted in a variety of public locations (e.g., bus stops, convenience stores, apartment complexes), community-based organizations, government agencies, and health care facilities; and community outreach by study personnel.

Women, 18 and older, were eligible to participate in the study if they: a) were currently on state probation or parole in Jefferson County; b) reported that they had sex with either men only or with men and women (women who were recently incarcerated were asked about the year prior to their incarceration); c) reported any lifetime experience of physical or sexual victimization that was perpetrated by a caregiver, intimate partner, or non-intimate partner (i.e., stranger, acquaintance); and d) had conversational English ability. Women who had sex exclusively with other women, 4% of women who participated in screenings, were omitted from the study due to the parent study's focus on intimate partner violence in heterosexual relationships and the recognition that there would be inadequate statistical power to conduct meaningful subgroup analyses among women exclusively involved with female intimate partners. The women participated in face-to-face audio computer-assisted interviews (ACASI; Nova Research Company, 2003) administered by trained female staff. The interviews, which lasted approximately two hours, took place in public locations between October 2010 and January 2013. Women completed debriefing and were compensated $35 for their time. The University of Louisville Institutional Review Board approved the study. For a further description of the study sample and methods see Golder et al. (2013).

Measures

Childhood Victimization—Childhood victimization was measured based on frequency of childhood neglect and childhood physical, psychological, and sexual abuse. Childhood neglect was assessed with seven items from Mullings and colleagues' (2003) large scale study involving incarcerated women, which included questions such as, "While growing up, how often did you have no place to live?" Responses to each item were dichotomized into two categories: 0="never", 1="seldom" to "frequently," and then summed with a possible range of 0–7 (NEG; α = .84). Childhood physical, sexual, and psychological abuse was measured through a subset of items adapted from the widely used Revised Conflict Tactics Scale (Straus, Hambly, Boney-McCoy, & Sugarman, 1996) and revised items addressing childhood victimization (rather than adult victimization) from Tolman's Psychological Maltreatment of Women Inventory (Tolman, 1989; Tolman, 1999). Physical abuse was measured by averaging four items adapted from the Revised Conflict Tactics Scale asking participants how often they had been physically hurt on purpose, beat up, or attacked with a weapon by a parent or caretaker prior to age 18. The three sexual abuse items adapted from the Revised Conflict Tactics Scale asked respondents to describe the frequency with which

they had been forced or threatened to: do “sexual things other than sexual intercourse (e.g., petting, oral sex)”; “have sexual intercourse but it did not actually occur”; and/or “have sexual intercourse and it actually happened.” Psychological abuse was measured by averaging 8 items adapted from Tolman’s Psychological Maltreatment of Women Inventory assessing the frequency of potentially psychologically abusive experiences (e.g., “insulted, shamed or humiliated you in front of others”). Responses for all items ranged from 0=“never” to 6=“more than once most days,” and alphas with this sample of women were as follows: physical abuse (PHYS; α = .82), sexual abuse (SEX; α = .79), and psychological abuse (PSY; α = .87).

Psychological Distress—The Brief Symptom Inventory 18 (BSI 18; Derogatis, 2000), a shortened version of the Brief Symptom Inventory (Derogatis, 1993), is an 18-item self-report scale used to measure current psychological distress through three primary symptom dimensions: somatization (SOM), depression (DEP), and anxiety (ANX). Used with clinical and non-clinical populations, the BSI 18 measures the experience of symptoms in the past seven days, including the day the BSI was completed. Responses range from 0=“not at all” to 4=“extremely” on a five-point scale. High internal consistency reliability has been found in prior research with racially diverse women (somatization, α = .82; depression, α = .84; anxiety, α = .84; Wiesner et al., 2010). Means for each six-item subscale were computed (observed range: 0–4); alphas for each subscale with this sample of women were as follows: somatization (α = .84); depression (α = .91); and anxiety (α = .88).

Substance Use—Items adapted from Coyle’s Risk Behavior Assessment (RBA; Coyle, 1993) were used to measure substance use. Six dichotomous variables (0= No; 1= Yes) assessed lifetime engagement in a year or more of regular substance use (defined as an average of three times per week), including use of alcohol to intoxication (ALC), marijuana (MAR), crack/cocaine (CRA), heroin/other opiates (OPI), sedatives (SED) and/or nicotine cigarettes (CIG).

Attachment Insecurity—Collins and Read’s (1990) 18-item Revised Adult Attachment Scale (R-AAS) was used to create two attachment insecurity indicators: Anxiety, the mean of 6 items from the R-AAS (ANX; observed α = .85), and Avoidance (AVO; observed α = .71), the mean of 12 items from the R-AAS. High internal consistency reliability of these scales has been found in prior research (anxiety, α = .85; avoidance, α = .80; Collins & Read, 1990). The scores for each of the 18 items ranged from 1=“not at all” to 5=“a great deal.” Examples from the R-AAS include, “I am comfortable developing close relationships with others” and “I often wonder whether romantic partners really care about me.” The observed range for each subscale was 0–5. The established cut-off is a score of 3 or higher on either subscale for the categorization of insecure attachment (Collins & Feeney, 2004), which was used only for a descriptive understanding of the sample. Continuous raw scores were used for all other analyses.

Data Analysis

Following examination of descriptive statistics and correlations among model variables, structural equation models (SEM) were tested using Mplus Version 7.11 (Muthén &

Muthén, 1998–2012). The full information maximum likelihood procedure was used for all estimates because it is robust to violations of multivariate normality and handles model estimation with missing data by estimating variable means and intercepts (Peters & Enders, 2002). The theoretical model was tested in two stages: first, the fit of the measurement models was tested with all possible correlations between the latent constructs specified. Once a satisfactory measurement model was obtained for the latent variables, the theoretically-specified structural model was tested. The goodness of fit between the hypothesized model and the sample data was assessed by four fit indices and established critical values: 1) a non-significant ($p > .05$) chi-square statistic; 2) comparative fit index (CFI; ≥.95 indicates good fit, ≥.90 indicates adequate fit; Bentler, 1990); 3) the root mean square error of approximation (RMSEA; ≤.05 indicates good fit; .05–.08 indicates adequate fit; Browne & Cudeck, 1993; Hu & Bentler, 1999; Steiger & Lind, 1980); and 4) the standardized root mean square residual (SRMR; <.08 indicates good fit; Hu & Bentler, 1999). While non-significant chi-square values indicate good model fit ($p > .05$), this test is often too conservative to determine good model fit when examining large sample sizes. Thus, results for model fit will also be examined in the context of the CFI, RMSEA, and SRMR fit. Multivariate normality, multivariate outliers, homoskedascity, and multicolinearity were assessed prior to analysis, revealing no problematic values or violations of normality.

Results

Sample Characteristics

The average age of participants was 37.3 years (SD=10.18, Range: 19–69). Their races/ethnicities mirrored the population of women on probation and parole in the area, with most women reporting they were White (50.5%) or African American/Black (41.6%). In terms of relationship status, the majority of women reported that they were single (43.8%) or divorced, separated, or widowed (38.2%). Approximately 29% of the women worked part- or full-time. Many of the women had a high school diploma or GED (36%). Over one-third of the women considered themselves homeless (34.0%) and over half had been in a controlled environment during the past year (57%; e.g., jail/prison, alcohol/drug treatment, medical treatment, psychiatric treatment, etc.). The majority of women were on probation (75.6%), while 22.7% were on parole, and a small percentage (1.7%) reported being on both probation and parole. A more complete description of the sample is reported elsewhere (Golder et al., 2013).

Means or percentages, standard deviations, and ranges for all variables are reported in Table 1. Seventy-five percent of the women experienced some form of childhood victimization. On average, women reported being victimized as children a few times per year; the mean frequencies for childhood victimization ranged from .79 times/year for sexual victimization to 1.38 times/year for psychological victimization. Neglect was more frequent (M= 3.35 times/year). The mean level of reported psychological distress was 1.03 for somatization, 1.26 for depression, and 1.19 for anxiety, exceeding norms for women in the general population (.35, .36, .44, respectively; Derogatis, 2000). The most common regularly-used substances were marijuana (73%), tobacco (85%), and crack or cocaine (57%). Seventy-two

percent of women met the cutoff for anxious attachment and 72% for avoidant attachment. Overall, eighty-six percent of women reported insecure attachment, meeting the cutoff for anxious attachment, avoidant attachment, or both.

Measurement Model

Descriptive statistics and the correlation matrix for the indictors used in the measurement model are presented in Table 1. Examination of parameter estimates of the model and their associated critical ratio values revealed adequate fit between the hypothesized model and the data (X^2 (84) =202.06, $p < .001$; *CFI* = .94; *RMSEA* = .06; *SRMR* = .05), indicating that the proposed model adequately accounted for the observed variances, covariances, and error covariances among the indicators (Figure 2). The factor loadings were all statistically significant and were of substantial magnitude per Kline's (2011) recommendation (>.50), with the following statistically-significant exceptions: cigarette use (.17), cocaine/crack use (.40), and marijuana use (.42). Cigarette use was removed from the final model due to the low factor loading as well as concerns regarding qualitative differences between cigarette use and use of other substances. All other variables were retained for the final model. No unreasonable parameter estimates, such as factor loadings greater than one or negative error variances, were noted.

Analysis Plan

Following the measurement models, three different models were fit as steps in testing mediation: 1) a model testing the direct effects of childhood victimization on psychological distress and substance use; 2) a model testing the indirect effects of attachment insecurity on psychological distress and substance use; and 3) a final model of the direct effects of childhood victimization on attachment insecurity, psychological distress, and substance use and indirect effects of childhood victimization on psychological distress and substance use through attachment insecurity (Kline, 2011). When examining indirect effects in mediational models, prior research supports bootstrapping techniques over earlier methods presented by Baron and Kenny (1986) and Sobel (1988); bootstrapping more accurately assesses indirect effects in mediational models without assuming normal distribution of indirect effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008). Additionally, bootstrapping controls for Type I errors and frees up power to assess multiple mediation models. In the final model, direct, indirect, and total effects of childhood victimization and attachment insecurity on psychological distress and substance use were calculated using Mplus Version 7.11. Indirect effects were considered significant if the bias corrected and accelerated bootstrapping confidence intervals did not include zero (CIs set at 95% from 5000 bootstrap samples; Preacher & Hayes, 2008).

The direct effects model, presented in Figure 3a, indicated good model fit (X^2 (51) =134.88, $p < .00$; *CFI* = .96; *RMSEA* = .06; *SRMR* = .05). In this model, which tested the direct effects of childhood victimization on psychological distress and substance use, there was, as expected, a statistically-significant relationship between childhood victimization and greater psychological distress (B= .21, β = .34, $p < .001$). Contrary to expectations, the relationship between childhood victimization and substance use (B= .00, β = .00, p =.10) was not

statistically significant. Overall, childhood victimization accounted for 12% of the variance in psychological distress and none of the variance in substance use.

The indirect effects model displayed good fit with the data (X^2 (73) =190.75, p <.001; *CFI* = .94; *RMSEA* = .06; *SRMR* = .06) and is presented in Figure 3b. This model tested the effects of childhood victimization on attachment insecurity and the effects of attachment insecurity on psychological distress and substance use. Findings indicated a statistically-significant relationship between childhood victimization and greater attachment insecurity (B= .11, β = .33, p <.001). Childhood victimization accounted for 11% of the variance in attachment insecurity. As expected, pathways between insecure attachment and psychological distress (B= .94, β = .52, p <.001) and between insecure attachment and substance use (B= .15, β = .26, p =.002) were both statistically significant, indicating that greater attachment insecurity is associated with more psychological distress and substance use. Attachment insecurity alone accounted for 27% and 6% of the variance in psychological distress and substance use, respectively (full results of these preliminary models are available from the first author).

Model Results

The third and final structural model, testing if attachment insecurity mediates relationships between childhood victimization, psychological distress and substance use, displayed good fit (X^2 (71) =168.95, p <.001; *CFI* = .95; *RMSEA* = .06; *SRMR* = .05) and is presented in Figure 3c. In examining psychological distress, both the direct (B= .14, β = .24, p <.001) and the indirect (B= .06, β = .10, p =.002) relationships between childhood victimization and psychological distress were statistically significant, with the direct effect being twice as large as the indirect effect. Compared to the direct effects model, the direct effect of childhood victimization on psychological distress in this final model was reduced substantially (from B=.21 to B= .14) with the addition of attachment insecurity as an indirect effect in the model. As expected, childhood victimization was associated with greater insecure attachment (B= .08, β = .25, p =.006), which was associated with more psychological distress (B= .74, β = .41, p <.001). Compared to the indirect effects model, the effect of childhood victimization on attachment insecurity was slightly muted (from B=.11 to B= .08, respectively) in this final model, while the effect of attachment insecurity on psychological distress was greatly reduced (from B= .94 to B= .74). Overall, these findings indicate that adult attachment mediates 21% of the total effect of childhood victimization on psychological distress, reflecting partial mediation. Findings from the bootstrapping analysis revealed that attachment insecurity significantly mediated the relationship between childhood victimization and psychological distress, as the confidence interval did not include zero (95% bootstrap CI of .03 to .10).

In the final model, the findings related to the direct relationship between childhood victimization and substance use were unexpected and not statistically significant (B= −.01, β = −.07, p =273); however, pathways between childhood victimization and insecure attachment (B= .08, β = .25, p = 006) and between insecure attachment and substance use (B= .17, β = .28, p =.001) were both statistically significant. Interestingly, compared to the indirect effects model, the direct effects of attachment insecurity on substance use were

slightly amplified (from B=.15 to B= .17) in this final model. Review of the squared multiple correlations indicated that 27% (R^2=271) of the variance in psychological distress and 7% (R^2=.073) of the variance in substance use was explained by the variables in the model.

Discussion

Guided by the gendered pathways perspective, this study is the first known to use structural equation modeling to explore relationships among childhood victimization, insecure adult attachment, psychological distress, and substance use with a sample of women on probation and parole who have histories of victimization. It finds that insecure adult attachment, reflected in ways women see themselves and their relationships, may be a key consideration in understanding and addressing psychological distress and substance use among this group of women. In light of earlier research that identifies the important roles of psychological distress and substance use in women's pathways from childhood victimization to involvement with the criminal justice system (Mulvey, 2013; Salisbury & Van Voorhis, 2009), the current findings suggest that addressing attachment insecurity may not only hold promise for improvements related to psychological distress and substance use, but also related to criminal justice involvement.

Prior research on attachment with incarcerated women has focused largely on incarcerated mothers and children, with considerable emphasis on implications of maternal incarceration and attachment for parenting and children's well-being (for discussion and examples see Baradon, Fonagy, Bland, Lenard, & Sleed, 2008; Borelli et al., 2010; Murray & Murray, 2010; Poehlmann, 2005). Recent quantitative findings with 69 women incarcerated for felonies who were involved in a prison nursery program in New York indicate that the majority of women, 65%, experienced insecure attachment based on the two-way classification system (insecure or secure; Borelli et al., 2010). In the current study, we also found elevated rates of insecure attachment among participants, with an estimated 86% of women experiencing insecure attachment. In comparison to 3- way classifications of attachment (autonomous, dismissing and pre-occupied) in large meta-analytic studies, women in nonclinical samples and women with low socioeconomic resources have higher rates of secure attachment (58% and 48%, respectively), but women in clinical samples (13% with women only; 27% with men and women) have rates of secure attachment that are comparable to the women in the current study (14%) and the study conducted by Borelli and colleagues (35%; Bakermans-Kranenburg & van IJzendoorn, 2009; van IJzendoorn & Bakermans-Kranenburg, 1996).

Given the high prevalence of insecure attachment among women involved in the criminal justice system and its implications for psychological distress, substance use, parenting difficulties (Khantzian, 1997; Luthar & Suchman, 2000; Suchman, Pajulo, DeCoste, & Mayes, 2006) and, potentially, ongoing criminal justice involvement, it is critical that programming for women in this context attend to attachment considerations. To the best of our knowledge, this is an area which is not systematically addressed in current programming. In fact, despite well-documented need, many women involved in the criminal justice system receive no substance use or mental health treatment while incarcerated or

upon community re-entry, let alone treatment with an attachment focus (Beck & Maruschak, 2001; Freudenberg, Daniels, Crum, Perkins, & Richie, 2005; Trestman, Ford, Zhang, & Wiesbrock, 2007).

Key beginning steps in attachment-oriented treatment involve emphasizing the development of a positive therapeutic alliance, which is particularly important with women who have experienced victimization (Ilardi & Kaslow, 2009; Massey, Compton, & Kaslow, 2014), and assessing women's current attachment and relational experiences. Readily available tools to assess attachment include the Revised Adult Attachment Scale (Collins & Read, 1990) and the Experiences in Close Relationships Scale (Brennan, Clark, & Shaver, 1998). Reviewing this assessment information can provide a platform for additional discussion of past and current attachment and relational experiences. Such discussion is thought to activate attachment schemas and to encourage the person to experience and address negative affect surrounding existing patterns of response to attachment-driven situations (Fonagy & Bateman, 2006).

As might be expected, evidence-supported strategies to enhance attachment security for women tend to be relationally focused and have included group and individual therapies (Baradon et al., 2008; Marmarosh & Tasca, 2013; Suchman et al., 2010). Of particular importance is the ability for women to experience stable environments and emotional connections that provide a secure base for strengthening capacity to regulate emotions (Marmarosh & Tasca, 2013). These environments provide safe places for emotional regulation that can reduce the need to manage emotions though substance use or other high-risk behaviors, including lawbreaking activities. Additionally, strengthening the capacity to regulate emotions may yield important gains in women's parenting (for discussion see Suchman et al., 2010) and in women's resilience (Caldwell & Shaver, 2012). Prior research suggests that as secure attachment experiences increase, so does an individual's capacity for a curious, optimistic and positive approach to adversity, which, in turn, can strengthen cognitive, emotional, and behavioral responses to stressful situations (Shaver & Mikulincer, 2007). Finally, while not all settings may be positioned to offer specific evidence-supported strategies (for examples see Baradon et al., 2008; Marmarosh & Tasca, 2013; Suchman et al., 2010), most can strive to engage in consistent, respectful, collaborative, trusting and empowering relationships that women experience as just; these qualities are salient elements in relationally-focused approaches and in healing from victimization (Baradon et al., 2008; Finfgeld-Connett & Johnson, 2011; Herman, 1992b; Miller & Stiver, 1991; Pearlman & Courtois, 2005).

The current findings highlight the importance of early intervention to strengthen secure attachment and effective coping strategies among girls who have experienced victimization and are at high risk for polysubstance use, gang involvement, running away from home, and engagement in illegal activity (Acoca & Dedel, 1998; Mullis, Cornille, Mullis, & Huber, 2004). A key strategy to support the development of girls' secure attachment involves assisting primary caregivers in strengthening their responsiveness and sensitivity to the children in their care, which may also involve addressing the caregivers' attachment styles (for discussion see Baradon et al., 2008; Borelli et al., 2010). The power of warm, supportive relationships with adults in numerous positive outcomes and resilience among

children has been well documented (see discussion in Murray Nettles & Pleck, 1994). Additionally, several programs to support families experiencing high risk of negative outcomes for children have been found to be cost-effective strategies that can reduce youths' alcohol and drug use and criminal justice involvement; such programs include home visitation, early parent-training, and daycare/school-based services (see Cohen, Piquero, & Jennings, 2010 for a review).

In addition to supporting secure attachment in general, it is critically important that girls who experience victimization receive evidence-supported assistance to strengthen coping and to support resilience. When traumatic exposure has just occurred, it is generally recommended that interventions focus on establishing a sense of safety, offering psychoeducation regarding trauma and coping, connecting with natural support systems, and offering non-directive, supportive counseling. Psychological First Aid is a research-supported approach to guide these efforts (for discussion see Engstrom, 2012). Because prior traumatic experiences affect many children and can have multifaceted consequences, the American Academy of Child and Adolescent Psychiatry (AACAP, 2010) recommends routine screening for exposure to traumatic events in all mental health assessments with children and adolescents, and, in the presence of traumatic exposure, screening for PTSD. For children and adolescents experiencing ongoing distress related to trauma, evidence-supported treatments include attachment, psychoanalytic and cognitive-behavioral approaches that emphasize attention to the traumatic exposure, caregiver involvement, and resilience as well as reduced difficulties. Some children and adolescents may benefit from a combination of psychotherapy and medication (for additional information see AACAP, 2010).

While our findings suggest that insecure attachment mediates pathways between childhood victimization and current psychological distress and predicts substance use among women on probation and parole with lifetime histories of victimization, there are additional factors that warrant further consideration in a gendered pathways understanding of women's criminal justice involvement. Most notably, a premise of the gendered pathways perspective involves recognizing links between childhood victimization, psychological distress, substance use, and women's subsequent criminal justice involvement. This premise is driven, in large part, by the current legal climate which links substance use and legal consequences (for discussion see Engstrom, 2008; Tripodi & Pettus-Davis, 2013). When considering this gendered pathway perspective, the current legal response to substance use in the U.S. cannot be overlooked. Strategies to alter women's pathways from childhood victimization to involvement in the justice system must consider public health and public policy responses that address underlying factors, including access to evidence-supported treatment for trauma, substance use and mental health problems; reduce stigma regarding mental health and substance use problems and treatment; eliminate barriers to treatment; decouple substance use and criminal consequences; and yield alternative pathways for women.

There are numerous additional contextual factors that were not addressed in this study but are associated with women's risk of involvement in the justice system. These factors include relational problems and limited social and human capital, including several dimensions of

economic insecurity (i.e., housing, employment, health insurance, material resources; Golder et al., 2014; Salisbury & Van Voorhis, 2009). This study's contribution to understanding attachment in women' pathways between childhood victimization and later psychological distress and substance use is valuable in terms of both knowledge and practice development. However, it is also important to consider the findings in the context of prior research, which suggests that practice strategies may benefit from attending to security in multidimensional ways, including security not only related to attachment, and formal and informal social relationships, but also related to economics. Future research in this area would benefit from: 1) testing conceptual models that examine relationships among these multiple forms of security and involvement in the justice system for women; 2) drawing upon longitudinal data; and 3) designing and evaluating practice approaches that facilitate gains in these areas.

The present study elucidates relationships among childhood victimization, attachment, psychological distress, and substance use among women on probation and parole with lifetime histories of victimization; however, several important limitations should be noted and may provide the foundation for future research. The current study involved approximately 20% of the total population of women on probation and parole in the county; however, the sample was non-random and only included women with reported lifetime histories of victimization, which makes comparisons to women without such histories impossible. However, given the high prevalence of victimization among justice-involved women (Browne et al., 1999; Tripodi & Pettus-Davis, 2013), it is critically important to focus explicitly on victimization, its heterogeneity, and its multifaceted sequelae in order to advance knowledge, practice and policy that can effectively address this pivotal, multidimensional experience among women involved in the justice system. Additionally, because of the primary study's focus on intimate partner violence in heterosexual relationships in adulthood, women who had sex only with female partners were excluded from the analysis, which resulted in an exclusion of 4% of women screened for the study. Future research would benefit from replicating this study with this population of women. Measures used in this study were self-reported, making them subject to possible response and recall bias. However, research on self-report measures of substance use indicates that validity and reliability are generally high (Darke, 1998). Further, findings on the use of retrospective designs indicate moderate reliability between prospective and retrospective measures of childhood victimization (Tajima, Herrenkohl, Huang, & Whitney, 2004); childhood victimization is more likely to be underreported than overreported by adults for numerous reasons, including the sensitive nature of such disclosure (Brown, Cohen, Johnson, & Salzinger, 1998; Femina, Yeager, & Lewis, 1990). The use of ACASI technology attenuates some of this risk given its association with improvements in disclosure of sensitive information (Wolff & Shi, 2012). Finally, these data are cross-sectional and do not support causal inferences. As noted earlier, future research would benefit from longitudinal designs, as well as random sampling and ongoing model building to understand and address childhood victimization sequelae among women involved in the criminal justice system.

Consistent with the gendered pathways perspective, women in this study heavily endorsed experiences of childhood victimization, insecure attachment, psychological distress, and substance use. Prior research supports utilizing integrated, evidence-based treatment

approaches that address trauma, mental health concerns, and substance use problems to improve overall well-being and to prevent re-arrest and re-incarceration for women (Clark & Power, 2005; Cocozza et al., 2005; Morrissey et al., 2005). The current findings suggest that augmenting these approaches with attention to attachment may be a critical component in the treatment process. Supporting women's sense of relational and financial security (Freudenberg et al., 2005; Golder et al., 2014) offers potential for improved pathways for women with histories of victimization who are involved in the justice system.

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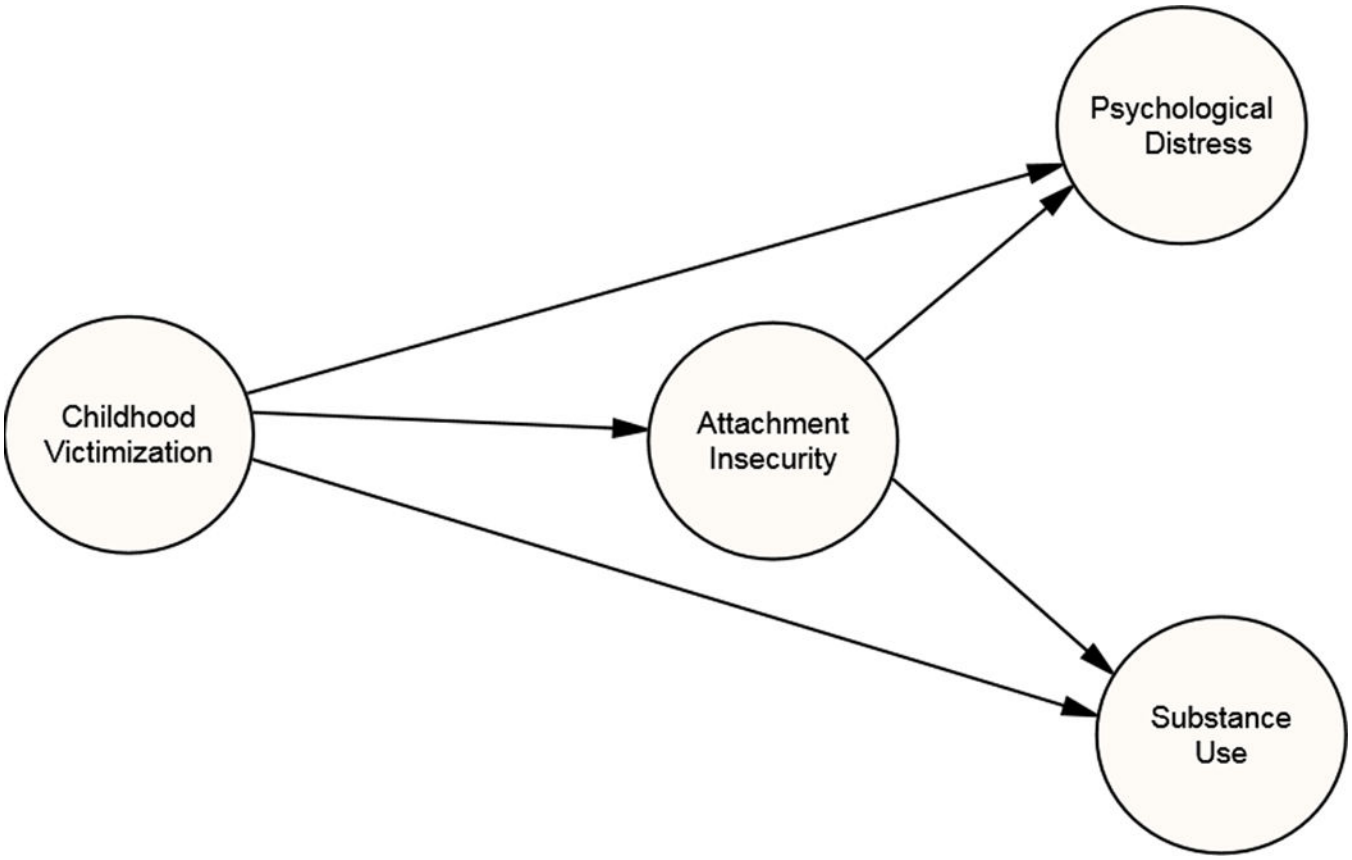


FIGURE 1.

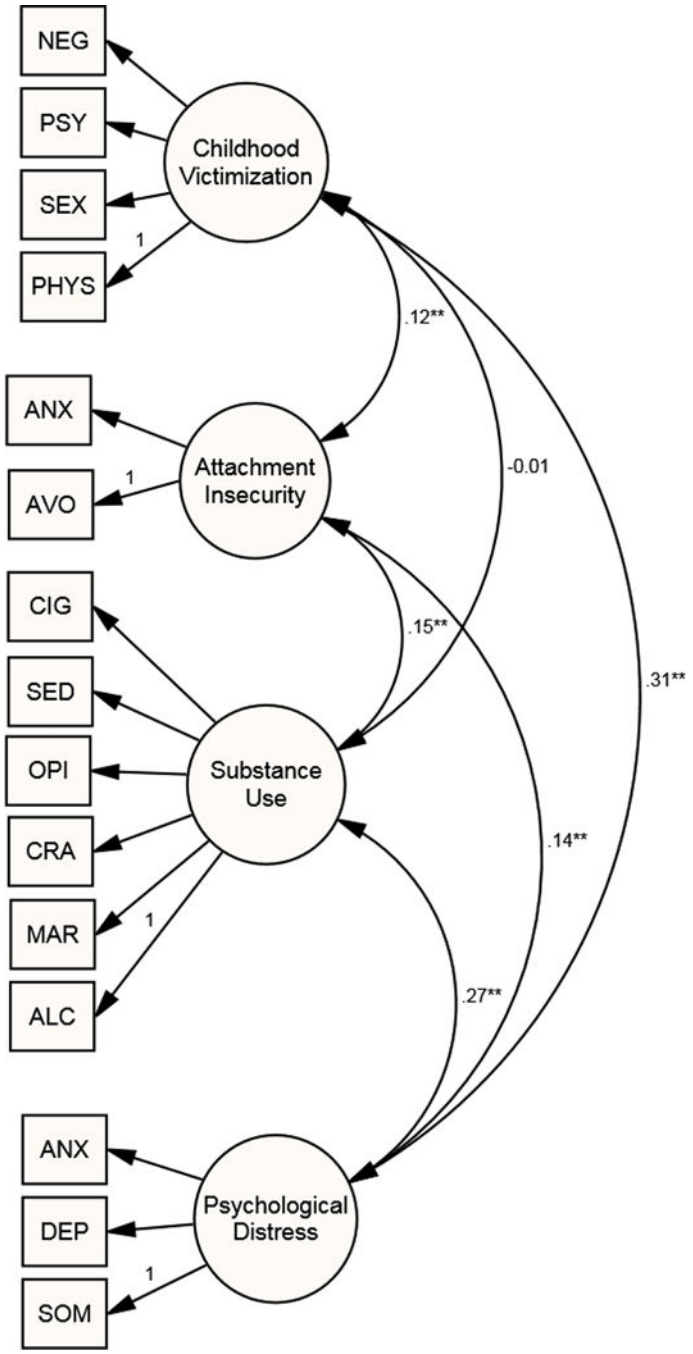
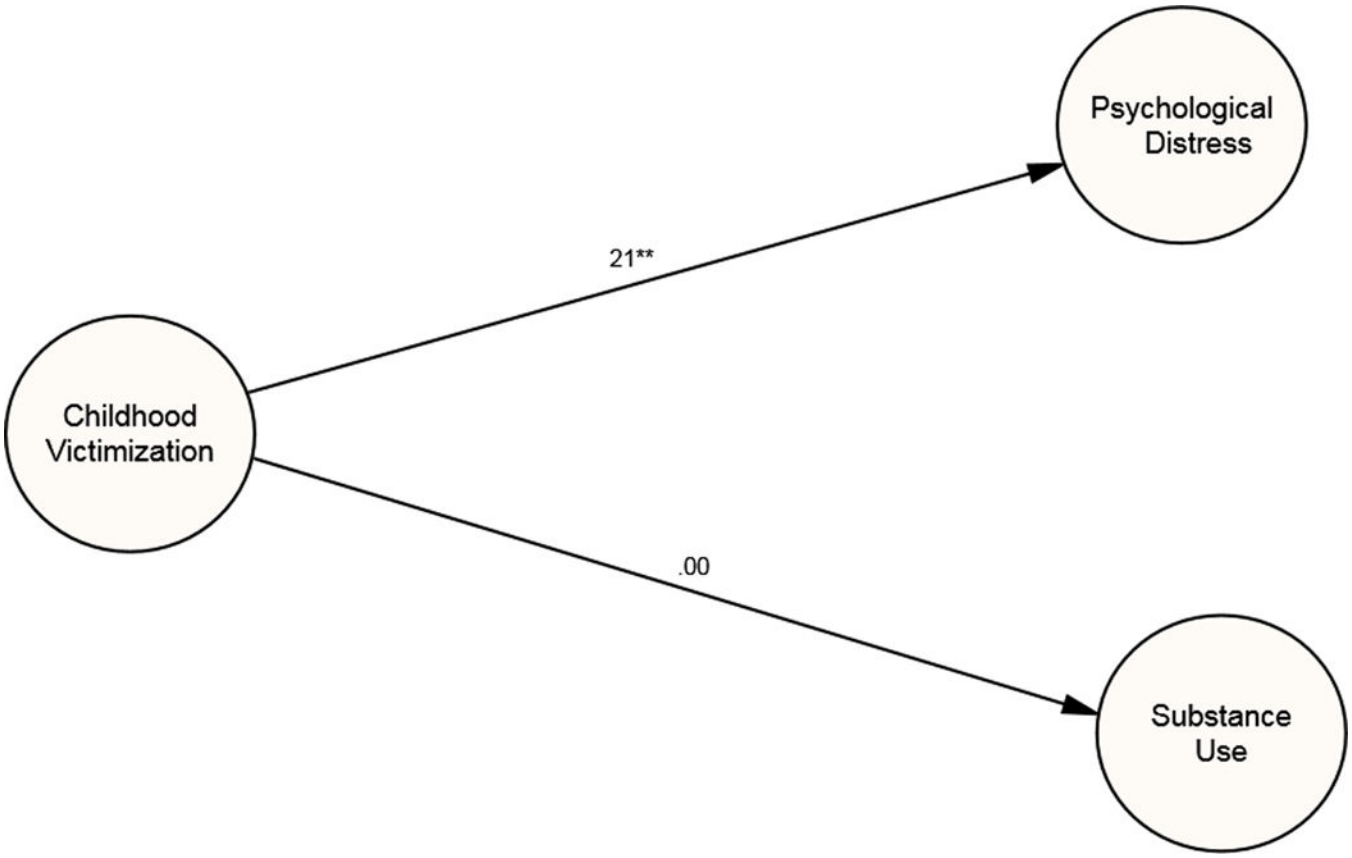
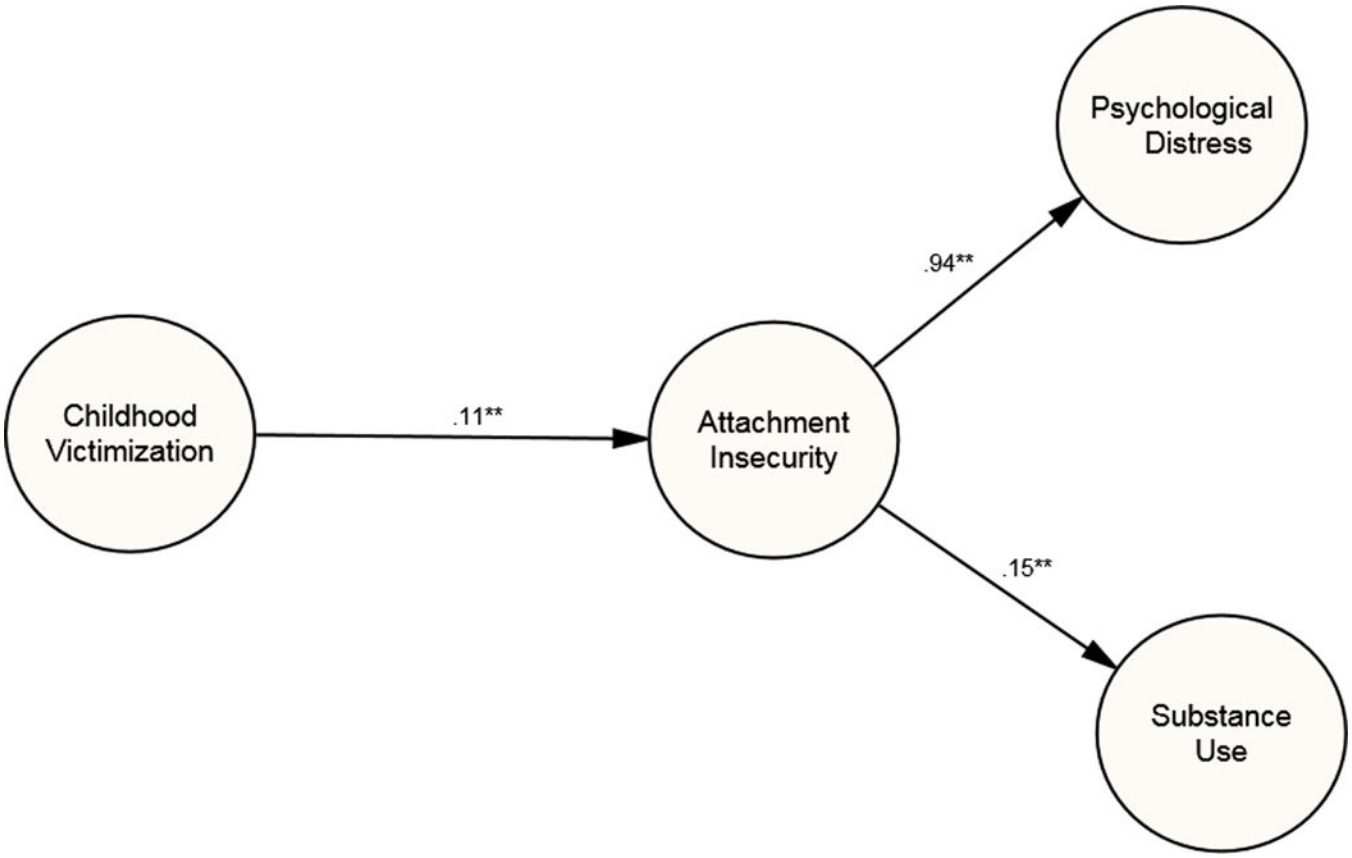


FIGURE 2.





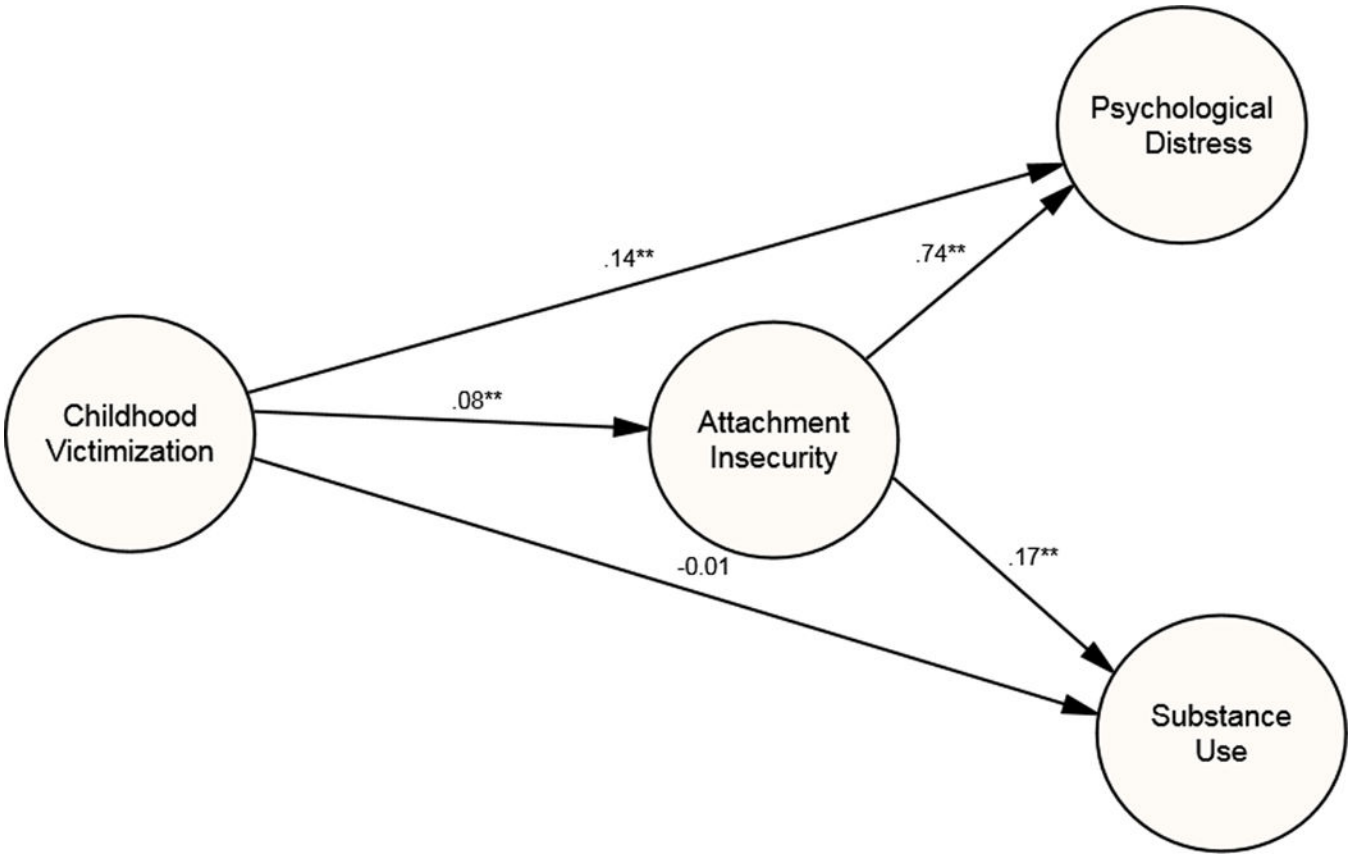


FIGURE 3.

Table 1

Descriptive statistics for observed variables (*N*=406)

Latent Construct	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Childhood Victimization	1. Physical Abuse	–														
	2. Sexual Abuse	.49**	–													
	3. Psych. Abuse	.80**	.54**	–												
	4. Neglect	.51**	.38**	.56**	–											
Psychological Distress	5. Somatization	.22**	.09	.28**	.17**	–										
	6. Depression	.25**	.09	.26**	.18**	.69**	–									
	7. Anxiety	.26**	.15**	.31**	.21**	.77**	.77**	–								
Substance Use	8. Alcohol	.09	.06	.05	.12*	.07	.11*	.06	–							
	9. Marijuana	−.30	−.01	−.03	.06	−.01	.04	.03	.30**	–						
	10. Crack/Cocaine	−.02	.13*	−.02	−.05	.06	.05	.07	.39**	.37**	–					
	11. Opiates	−.02	−.03	−.01	.08	.17**	.17**	.21**	.34**	.23**	.18**	–				
	12. Sedatives	−.01	−.04	.00	.06	.14**	.19**	.20**	.26**	.23**	.20**	.55**	–			
	13. Tobacco	.02	.05	.04	.00	.00	.01	.10*	.07	.19**	.21**	.12*	.04	–		
Attachment Insecurity	14. Avoidance	.19**	.12*	.19**	.21**	.19**	.30**	.23**	.08	.05	−.04	.13**	.17**	.00	–	
	15. Anxiety	.11*	.03	.12*	.14**	.24**	.36**	.31**	.05	.02	.02	.13**	.14**	.03	.44**	–
Descriptive Statistics																
	Mean	1.17	.79	1.38	3.35	1.03	1.26	1.19	.56	.73	.57	.36	.32	.85	3.33	3.50
	SD	1.43	1.35	1.47	2.41	.90	1.05	.99	.50	.44	.50	.48	.47	.35	.67	1.08
	Min	0	0	0	0	0	0	0	0	0	0	0	0	0	1.25	1
	Max	6	6	6	7	4	4	4	1	1	1	1	1	1	5	5
	Skew	1.32	1.01	.97	.15	.80	.61	.79	−.22	−1.05	−.30	.58	.79	−2.00	−.13	−.38
	Kurtosis	1.01	2.55	.04	−1.27	−.19	−.67	−.14	−1.96	−.91	−1.92	−1.67	−1.38	2.01	−.21	−.74

** p <.01 level

* p <.05