The Role of Maternal Trauma in Reciprocity of Reasoning, Verbal Aggression, and Physical Violence between Mothers Who Use Substances and Their Children

DISSERTATION

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Abstract

Understanding the complexity surrounding trauma, substance use, and conflict resolution in mother-child interactions is imperative to addressing the wide range of needs and challenges among high risk families. Yet, there is little research that focuses on the interrelationship between trauma, substance use, and conflict resolution within a systemic context. No study to date has examined trauma and conflict resolution tactics among children and mothers with a substance use disorder engaged in a family-systems intervention. Thus, the current study addressed this gap in the literature by examining three research objectives.

First, women were grouped based on the type and frequency of their trauma experience (childhood abuse, intimate partner violence, and street victimization), and predictors of these groups were investigated. Second, stability and reciprocity in conflict resolution tactics (reasoning skills, verbal aggression, and physical violence) were examined among mothers and children. Third, conflict resolution tactics were compared between a family-systems intervention and an attention control.

Findings suggested the categorization of three trauma classes, with depressive symptoms and runaway episodes predicting the classes. Although reasoning skills and verbal aggression did not significantly differ between the three classes, using the full
sample, children’s reasoning skills and verbal aggression at 12 months was predicted by their initial levels of these tactics (e.g., stability) and mothers’ verbal aggression at 12 months predicted their initial levels of this tactic (e.g., stability). Children’s use of reasoning skills and verbal aggression tended to predict their mothers’ use of these tactics. Evidence of reciprocity was not found and the model that examined physical violence used to resolve conflicts could not be estimated. Treatment effects in conflict resolution tactics were not found, but using the full sample, findings suggested reductions in verbal aggression among mothers and children regardless of treatment condition.

Overall, findings of the current study suggest that trauma experiences range in type and frequency among women, with trauma likely occurring in both childhood and adulthood. Therefore, it may be advantageous for substance use treatment programs to include components that address women’s trauma experiences in order to provide more comprehensive care. A better understanding of the factors that interrupt stability in verbal aggression among children and mothers is needed, and providers should include children in their mothers’ treatment plan given that children’s use of conflict resolution tactics may predict their mothers’ use of tactics. Similarly, research is needed on the active elements of family-systems interventions that reduce verbal aggression used to resolve conflicts. Understanding the conflict resolution process is a crucial step towards successfully intervening in high levels of family conflict, especially among vulnerable children and mothers experiencing a substance use disorder and trauma.
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Chapter 1: Introduction

Family violence and trauma among mothers who use substances has serious implications for women, children and families and is especially concerning to policy makers, researchers, and family-based clinicians. Rates of trauma experiences among women who use substances are alarmingly high, with estimates suggesting that up to 69% of these women have experienced childhood abuse and up to 64% have experienced intimate partner violence (IPV; Chase, O'Farrell, Murphy, Fals-Stewart, & Murphy, 2003; Sacks, McKendrick, & Banks, 2008). Women who experience multiple trauma events have an increased likelihood of engaging in aggressive parenting behaviors, and maternal trauma and maternal substance use are linked to aggressive behaviors among children (Cohen, Hien, & Batchelder, 2008; Kelley et al., 2010; Manchikanti Gómez, 2011).

Yet, reciprocal violence between mothers and children is vastly understudied, and no study to date has examined reciprocity in violence in the context of maternal trauma and maternal substance use. Also, substance use interventions that include both mothers and their children are scarce, and even fewer substance use interventions address trauma among adult populations. Therefore, this study will investigate multiple trauma experiences among mothers with substance use disorders and the influence of trauma on
reciprocal violence that occurs within conflicts between these mothers and their children. Moreover, this study will examine the efficacy of a family-systems intervention on aggressive behaviors perpetrated within conflicts over time. Findings from this study may elucidate the role of trauma in predicting intergenerational violence in families and yield implications for intervening with maladaptive conflict resolution tactics among families with a mother experiencing a substance use disorder.

**Cumulative Risk**

Risk factors, such as interpersonal trauma, violence, and substance use, often have a devastating impact on the family system (Department of Health and Human Services, 2009; Kelley et al., 2010; Koverola et al., 2005; Miller-Perrin et al., 2009). Although trauma, violence, and substance use are risk factors that may occur independently, these risk factors are likely to co-occur and overlap (Department of Health and Human Services, 2009; Kelley et al., 2010; Koverola et al., 2005; Miller-Perrin, Perrin, & Kocur, 2009). The combined effects of multiple risk factors may yield particularly detrimental effects on parent and child outcomes.

A cumulative risk framework has been developed to understand the interaction between multiple risk factors and the impact of this interaction on physical and psychological outcomes among family members. A cumulative risk framework posits that risk is “cumulative in that those (individuals) with more risk factors are more likely to experience negative outcomes than those (individuals) with fewer risk factors” (Rauer, Karney, Garvan, & Hou, 2008, p.1124). In other words, a cumulative risk framework
suggests that outcomes are more severe or frequent with multiple risk factors than individual risk factors.

Several types of cumulative risk models have been developed. One type of cumulative risk model commonly examined is an additive, or linear, risk model. Additive risk models suggest a linear relationship in that negative outcomes worsen with each additional risk factor (Rauer et al., 2008; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987). Another type of cumulative risk model is a saturation risk model. A saturation risk model suggests that outcomes continue to worsen with each additional risk factor until a threshold effect occurs, and after this threshold is reached, the effects of each risk factor on outcomes diminish in significance (Rauer et al., 2008; Sameroff, 1998). An exacerbation risk model is a type of cumulative risk model that occurs when outcomes become exponentially worse in the presence of other risk factors (Rauer et al., 2008; Rutter, 1979). In sum, these three cumulative risk models suggest that the pathway between risk factors and outcomes is likely influenced by multiple factors. Regardless of the differing pathways, each model shares an overarching premise that multiple risk factors that co-occur increase the prevalence of negative outcomes more than any single risk factor.

Findings from numerous studies have provided support for the cumulative risk framework. For instance, Appleyard, Egeland, Dulmen, and Alan (2005) found a linear relationship between cumulative risk factors, such as child maltreatment and IPV, and internalizing and externalizing problem behaviors among adolescents. That is, children who experienced more risk factors had worse behavior outcomes in adolescence.
Yet, the relationship between cumulative risk and problem behaviors is complex. Ethnicity and age may have a significant role in the relationship between cumulative risk and youth outcomes. A stronger link between cumulative risk and externalizing behaviors has been found among White youth than African American youth (Gerard & Buehler, 2004). Similarly, a stronger link between cumulative risk and internalizing behaviors has been found among females and White youth than males and African American and Hispanic youth (Gerard & Buehler, 2004).

The effects of cumulative risk are further complicated by familial factors such as parenting practices. Positive, attentive parenting has mediated the relationship between cumulative risk and internalizing and externalizing problems among young children (Trentacosta et al., 2008). Other studies suggest that maternal responsiveness has mediated the relationship between cumulative risk and externalizing problems, but not internalizing problems, among adolescents (Doan, Fuller-Rowell, & Evans, 2012). These studies suggest that cumulative risk has a powerful and direct impact on child outcomes, but the role of demographic factors and parenting behaviors in influencing outcomes among children experiencing cumulative risk is unclear. Identifying demographic factors that may affect cumulative risk, or the impact of the parent-child relationship quality on cumulative risk, might inform service providers of potential challenges that need to be addressed in intervention strategies. For instance, cumulative trauma may be particularly challenging, as well as critical, to address in family-based interventions.

**Cumulative trauma.** Cumulative trauma is an exceptionally pervasive theme among high risk families. While childhood abuse, IPV, and street victimization are
independently associated with a wide range of mental, physical, and social repercussions among women (Bonomi et al., 2006; Springer, Sheridan, Kuo, & Carnes, 2007; Temple, Weston, Rodriguez, & Marshall, 2007), these trauma events tend to be strongly interrelated. For instance, childhood abuse increases a woman’s risk of IPV victimization by 210%, and women with a history of childhood abuse are twice as likely to be a victim of rape or sexual assault as women with no history of childhood abuse (Manchikanti Gómez, 2011; Noll, Horowitz, Bonanno, Trickett, & Putnam, 2003). In other words, childhood abuse serves as a powerful predictor of revictimization in adulthood (Manchikanti Gómez, 2011). Moreover, cumulative trauma tends to co-occur with a myriad of other health compromising behaviors and mental health outcomes (Arata, Langhinrichsen-Rohling, Bowers, & O’Farrill-Swails, 2005), perhaps suggesting that cumulative trauma is a common link among multiple social problems. Mental health problems, sexual risk behaviors, and life threatening behaviors are more severe among women with multiple trauma experiences than women with a single type of trauma or no trauma (Arata et al., 2005). Substance use disorders are related to cumulative trauma as well. Women with substance use disorders are more likely to report experiencing cumulative trauma than non-substance using peers (Cohen et al., 2008).

Given these potentially life threatening outcomes, identifying the factors associated with trauma experiences is critical for providers seeking to intervene in the lives of vulnerable and high risk women. Some studies suggest that ethnicity may have a role in predicting trauma. Ullman and Filipas (2005) found higher rates of sexual childhood abuse among African American college students compared to Caucasian
college students. Another predictor of trauma is runaway episodes. Running away from home has been shown to predict sexual street victimization among female youth (Thrane, Yoder, & Chen, 2011). On the one hand, the literature suggests that interpersonal trauma predicts severity of depressive symptoms and depression disorders. Depression is highly correlated with trauma experiences and the relationship between trauma and depressive symptoms is not likely unidirectional, with depressive symptoms serving as a potential predictor and outcome of trauma.

However, the negative effects of cumulative trauma are not limited to women. Cumulative trauma is linked to increased parental abuse, punitive discipline strategies, psychological and physical aggression, parenting stress, and decreased confidence in parenting abilities among women (Cohen et al., 2008; Schuetze & Eiden, 2005). Therefore, children are at-risk for experiencing poorer parenting behaviors and trauma due to the indirect effects of their mothers’ trauma. In other words, cumulative trauma is likely to detrimentally affect families at the systemic level, potentially yielding harmful effects on women, children, and the parent-child relationship. However, the effects of cumulative trauma and cumulative risk should be considered in light of limitations of the literature.

**Limitations of the literature on cumulative risk and cumulative trauma**

Despite excellent work on cumulative risk and cumulative trauma, several limitations of the literature should be noted. One limitation involves the lack of studies that have examined cumulative risk in families experiencing parental substance use disorders. Also, the majority of studies utilize perspectives of mothers, teachers, or
official case reports while few studies take into account children’s perspectives. Children may have different perspectives than their mothers, and perspectives from children may highlight the impact of multiple trauma experiences on the family unit more comprehensively than just the maternal perspective. In turn, having a single perspective limits the ability to utilize dyadic data analysis. Studies vary on the measure of childhood abuse history and subsequent victimization, limiting generalizability of the results.

Finally, studies lack in examining the effects of cumulative risk on child outcomes, which is an individual-oriented approach. The effects of cumulative risk on systemic problems, such as bidirectional violence within families, are less understood.

Research is needed to clarify the role of parental cumulative trauma on the family unit. Street victimization is a form of trauma that is elevated among women using substances (Testa, VanZile-Tamsen, & Livingston, 2007), yet few studies focus on the effects of street victimization on the parent-child relationship. Many studies do not clearly differentiate between IPV and street victimization, possibly combining these two trauma experiences into a broader category of victimization experiences. Therefore, street victimization needs to be understood in a cumulative risk context with childhood abuse and IPV. Examining street victimization, IPV, and childhood abuse within a cumulative risk framework might elucidate the longitudinal effects of a higher number of trauma events on the functioning of parent-child relationships.

Prior studies have examined cumulative risk among high risk populations but women who experience trauma tend to be identified and analyzed as a homogenous group. It is not clear how different types of trauma events interact within, and uniquely
contribute to, a cumulative risk context. Given that each individual’s trauma experience varies, which in turn, may result in different outcomes, research that examines the variability of trauma among mothers is needed. Analogously, the majority of prior studies has investigated cumulative trauma using a summary or count variable for trauma. Empirically-based approaches using advanced statistical analysis, such as latent mixture modeling, are needed to investigate different patterns of trauma among women. For example, increasing support for the use of Latent Profile Analysis (LPA) in examining trauma has been found in the literature.

**Latent Profile Analysis**

LPA is a type of multivariate analysis that has been utilized in the literature to identify classes or subgroups of individuals with a history of trauma. LPA accounts for maximization of homogeneity within classes of women with respect to trauma, while accounting for heterogeneity between classes of these women. LPA can assume a person-centered approach or a variable-centered approach. According to Muthén and Muthén (2000), the goal of a variable-centered approach is to “predict outcomes, study how constructs influence their indicators, and relate independent and dependent variables in structural equations” (p.882). In contrast, the goal of a person-centered approach is to examine relationships among individuals and group these individuals based on shared characteristics. That is, the groups are identified based on qualitative characteristics.

Many studies on alcohol use require a person-centered approach due to the nature of the research questions and the heterogeneous groups of individuals. Also, longitudinal studies might benefit from utilizing a person-centered approach because of the
heterogeneity in developmental trajectories (Muthén & Muthén, 2000). In other words, a person-centered LPA is a more appropriate statistical approach to use when grouping women with shared characteristics related to trauma experiences and examining these groups over time compared to a variable-centered LPA.

One study conducted LPA to identify groups of individuals that experienced high frequency trauma events, such as childhood abuse, to low frequency trauma events, such as the exposure to a single incident (e.g., 9/11 attacks; Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013). LPA revealed a three class model, which suggested that three subgroups of individuals with a history of trauma were empirically different based on patterns of psychological and functional impairments (Cloitre et al., 2013). Results of LPA in another study that involved interpersonal trauma, including rape and physical assault, also revealed a three class model (Elklit, Hyland, & Shevlin, 2014). Similar to the findings by Cloitre et al. (2013), Elklit and colleagues (2014) found that trauma history was an important risk factor for the type of psychological diagnosis. Thus, LPA has been utilized in recent studies to group trauma-exposed individuals based on shared characteristics, but studies are scarce that utilize LPA to group women who experience multiple forms of interpersonal trauma over the lifespan. Conducting LPA might elucidate the level of variation in frequency and type of trauma experienced by high risk women, such as substance using women, and yield important implications for tailoring services to the needs of these women. Services may need to be tailored to address the frequency and type of trauma for women while also addressing violence experienced within the family.
Familial Violence

The line between being a victim of violence and perpetrating violence is not always transparent. Oftentimes causality between victimization and perpetration of violence cannot be determined because perpetration of violence can be a cause or consequence of trauma (Anderson, 2002). It is not uncommon for women who are victims of IPV to also report high rates of IPV perpetration (Stuart et al., 2006), with self-defense a common reason for engaging in violent behaviors. Other women who are victims of severe IPV may perpetrate IPV in order to prevent further victimization (Hamlett, 1988). Thus, being a victim of violence does not necessarily deter an individual from perpetrating violence, and the motivation for engaging in violence is likely to vary with each individual. While some women may learn aggressive behaviors from unhealthy relationships and violent intimate partners, other women may have learned to use aggression to resolve conflicts at young ages, perhaps as early as childhood.

Violence may not be an innate behavior, but rather, a learned behavior (Bandura, 1973). Aggressive and violent behaviors are typically learned in childhood and within the home environment (Anderson & Kras, 2006). Children may learn aggressiveness via direct experiences, such as experiencing physical abuse, or indirectly by observing the actions of parents during IPV (Bandura, 1973; Hines & Saudino, 2002). Aggressive behaviors may be perceived as an appropriate resolution to threatening situations, possibly producing positive consequences for the perpetrator (Bandura, 1973, 1986). For instance, parental IPV may suggest that aggression towards an intimate partner produces advantageous outcomes (e.g., compliance or control), and in turn, children who witness
parental IPV may increase their level of aggressiveness in interpersonal relationships (Anderson & Kras, 2006; Bandura, 1973).

Similarly, parent-to-child discipline usually results in compliance or control among children, which in turn reinforces the premise that aggressive behaviors are associated with desired outcomes (Anderson & Kras, 2006; Bandura, 1973). Aggressive behaviors, such as IPV and childhood abuse, might be viewed as the only strategy to resolving conflicts (Anderson & Kras, 2006; Bandura, 1973). Alternatively, children may learn that aggressive and violent behaviors in interpersonal relationships are acceptable and normal conflict resolution tactics in society (Anderson & Kras, 2006; Bandura, 1973). Indeed, community members and service providers might unintentionally support the use and acceptance of aggressive behaviors by minimizing the effects of violence on the family (Edenborough, Jackson, Mannix, & Wilkes, 2008).

Described as an intergenerational transmission of violence (Langhinrichsen-Rohling, 2005), the link between trauma and aggressive behaviors has been a topic of intense exploration among theorists and family-systems researchers for decades. One of the earliest studies on familial violence found that boys demonstrated higher levels of aggressiveness when their mothers and fathers approached threatening situations with aggressiveness (Bandura, 1973). Witnessing parental IPV increases the risk of bullying, aggressive behaviors, and delinquency among children (See Kelley, 2010) and yields a two-to-three times increased likelihood of perpetrating IPV in young adulthood (O'Donnell et al., 2006). Youth who witness parental IPV are likely to engage in aggressive behaviors in friendships as well. IPV perpetrated by fathers is related to
increased aggression towards friends among male adolescents, while IPV perpetrated by mothers is related to increased aggression towards friends among female adolescents (Moretti, Obsuth, Odgers, & Reebye, 2006). Moretti et al. (2006) concluded that witnessing parental IPV may have sex-specific modeling effects on aggression for youth. In other words, boys who witness the victimization of their mothers may learn aggressive behaviors from their fathers, while girls who witness their mothers perpetrate IPV may learn aggressive behaviors from their mothers. Overall, understanding how the environment and family processes foster aggression during intense conflicts might provide insight on areas that need to be addressed in interventions. For example, substance abuse treatment programs may need to address IPV between parents in conjunction with maladaptive conflict resolution tactics used by parents and children in order to change the familial culture and acceptance of violence.

Learned aggressiveness is one explanation for the link between parental IPV and aggressive behaviors among children, but it is important to note that witnessing parental IPV might also be a traumatic experience for these children. Witnessing parental IPV may be highly traumatic for children given that the home is intended to function as a safe haven for children (Kelley et al., 2010; Lang & Stover, 2008), and the overwhelming majority (95%) of these children are likely to experience sensory exposure, including hearing and seeing the violence, in their homes (Fusco & Fantuzzo, 2009). Thus, some children may respond to parental IPV exposure with aggressive behaviors, but other children may show the repercussions of IPV exposure in mental, physical, and social problems beyond aggression (Carpenter & Stacks, 2009; Kelley, 2010). Collectively,
these studies suggest a robust interdependency between trauma and violence, often yielding a disastrous impact on the family system for generations. Yet, the link between trauma and violence is convoluted and learned aggressiveness can be characterized by theoretical and methodological drawbacks in studies.

**Limitations of the literature on learned aggressive behaviors**

Although substantial support has been found for witnessing aggressive behaviors and perpetrating aggressive behaviors, limitations of the literature need to be addressed. First, some children who witness IPV or experience abuse do not show increased aggressive behaviors in adulthood, which suggests that the strength of the relationship between violence exposure and learned aggressiveness varies among subgroups (Black, Sussman, & Unger, 2010). In fact, some studies suggest that witnessing parental violence is associated with victimization among women but not men (See Franklin & Kercher, 2012). Second, contextual factors that underlie the intergenerational process of violence are not clearly known. Understanding the specific mechanisms through which intergenerational violence occurs might assist providers in tailoring services to high risk families. Third, the role of witnessed or experienced psychological aggression on physical aggression has received little attention in the literature. Findings from older studies suggest that psychological aggression yields equal or worse outcomes than physical aggression, which has significant clinical implications given that individuals who experience physical IPV also have a high likelihood of experiencing emotional IPV (Coker et al., 2002; O’Leary, 1999).
Research is needed to better understand how multiple forms of maladaptive conflict resolution tactics impact parent-child interactions. Specifically, examining aggressive behaviors among children who also experience multiple risk factors, such as abuse, parental IPV, and parental alcohol and illicit drug use disorders, is warranted. Understanding the role of multiple risk factors in influencing severity and stability of aggressive behaviors may shed light on potential challenges to maintaining safe, healthy relationships in high risk families. Also, studies are needed to investigate whether aggressive behaviors by mothers toward their children persist over time, especially when these mothers have been victims of violence. Given that different forms of victimization may co-occur, elucidation is needed on the relationship between aggressive behaviors and varying types of victimization experiences. For instance, identifying the concurrent effects of psychological, sexual, and physical violence may provide a more comprehensive understanding of the impact of maladaptive conflict resolution tactics on subsequent aggressive behaviors. Finally, the majority of studies on familial violence have been conducted on physical aggression between parents or physical discipline towards children. Verbal aggression needs to be understood within an intergenerational context and as a reciprocal interaction between mothers and children.

**Reciprocity in Parent-Child Interactions**

It is widely accepted that parents influence their children, but support is rapidly increasing that children also influence their parents (Doumen et al., 2008). Several theoretical models have suggested that parent-child interactions are not linear and unidirectional, but in fact, are bidirectional with reciprocal effects on both children and
their parents (Broderick, 1993; Doumen et al., 2008). Thus, family systems approaches are typically utilized to examine reciprocity in parent-child relationships and the impact of this reciprocity on family functioning.

Family processes, especially within a high risk context, are far from straightforward. Family members tend to interact in such a way that the experiences of one individual have an impact on other family members and the family system as a whole (Broderick, 1993). For example, maternal aggression likely has an impact on children and the mother-child relationship, while children’s aggression likely has an impact on mothers and the mother-child relationship. Reciprocity in the mother-child relationship is cumulative as well (Broderick, 1993). An aggressive act perpetrated by a mother is different depending on whether the mother has a history of abusing her child, or if the aggressive act is a rare event in the mother-child relationship (Broderick, 1993). From a family-systems perspective, children may engage in verbal aggression, physical aggression, or other maladaptive conflict resolution tactics with the aim of stopping or thwarting severe physical discipline. Equifinality refers to the concept that a common goal can be achieved by multiple pathways (von Bertalanffy, 1969). Thus, the type, frequency, and intensity of aggression perpetrated by children might be the various pathways in which children obtain the goal of protection from harmful conflict resolution tactics utilized by their mothers.

Poor conflict resolution tactics can include physical or verbal aggression, and tactics that are extremely maladaptive may result in the tragic loss of a child. In 2013, 679,000 children were victims of abuse and neglect in the United States, and 1,520 of
these children died as a result of the maltreatment (U.S. Department of Health and Human Services, 2015). Other forms of physical aggression include kicking, punching, slapping, beating-up, burning, choking, or threatening children with weapons, which may result in hospitalization and removal of these children from the home (Dubowitz & Bennett, 2007; Leslie et al., 2005; Miller-Perrin et al., 2009). In turn, children who survive physical abuse tend to engage in delinquent and hostile behaviors (Miller-Perrin et al., 2009). Children may engage in aggression targeted at their parents which results in physical injuries (e.g., bruises, cuts, or broken bones), verbal and emotional abuse, or stolen money and property (Cottrell & Monk, 2004; Edenborough et al., 2008).

Several factors likely influence children’s use of aggression to resolve conflicts with their parents. Children who live in single-parent homes and have witnessed parental IPV are more likely to be aggressive towards their parents than peers who live in two-parent homes and are not exposed to parental IPV (Cottrell & Monk, 2004; Kennedy, Edmonds, Dann, & Burnett, 2010). Also, children are more likely to perpetrate violence against their mothers than their fathers (Browne & Hamilton, 1998; Edenborough et al., 2008), and parental substance use increases the risk of children being aggressive towards their parents (Cottrell & Monk, 2004). In other words, single mothers with a history of IPV and who engage in substance use are particularly vulnerable to experiencing aggressive behaviors from their children. Also, the relationship quality between mothers and children is linked to aggression. Poor mother-child relationships are associated with higher levels of delinquency among youth, but higher levels of delinquency are also associated with poor mother-child relationships (Keijsers, Loeber, Branje, & Meeus,
Brezina (1999) conducted a similar study on aggression between parents and children. Brezina (1999) found that parental aggression fostered child aggression, and child aggression tended to deter parental aggression, which suggested a reciprocal relationship between parental and child aggression.

Bartle-Haring, Slesnick, and Carmona (2015) examined reciprocity in violence among primary caregivers and runaway youth who used substances. Findings by Bartle-Haring and colleagues (2015) suggested that verbal violence was more stable than physical violence, although physical violence became more stable over time. Female youth and White youth reported perpetrating more verbal aggression than male youth and Black youth. Also, risk factors such as substance use and history of trauma influenced the perpetration and victimization of verbal aggression, but again, significant relationships were not found with physical aggression. In addition, reciprocity in verbal aggression was found between youth and their caregivers at 12 months. The study by Bartle-Haring et al. (2015) provided valuable insight on reciprocity of different forms of aggression over time and demographic factors that may influence these relationships. Yet, the sample consisted of adolescents engaging in risk behaviors and primary caregivers including mothers, fathers, grandmothers, aunts, sisters, and cousins. Investigation of maladaptive conflict resolution tactics among children and mothers engaging in risk behaviors is especially needed. Understanding the different types of conflict resolution tactics utilized within high risk families is essential to interrupting intergenerational cycles that yield particularly dangerous and harmful outcomes. Nonetheless, limitations of the literature on reciprocity in violence should be acknowledged.
Limitations of the literature on reciprocity in violence

A significant limitation of the literature on reciprocal violence is the lack of studies on child-to-parent violence, with little attention given to child-to-mother violence over the past 20 years (Edenborough et al., 2008). Child-to-parent violence tends to be underreported because the severity of these events is often kept hidden or minimized by community members (Edenborough et al., 2008). In fact, some mothers have reported being blamed for the violence by practitioners, school teachers, school counselors, and policemen (Edenborough et al., 2008). Another limitation of the literature is the unclear boundary between acceptable forms of aggression and abuse, which contributes to the dearth of studies on child-to-mother violence (Edenborough et al., 2008). Analogously, mothers and children may underreport perpetration of violence, thus adhering to a social desirability bias. Those studies that have examined child-to-parent violence are often conducted on male youth, while fewer studies have utilized samples with female youth. In sum, more research is needed on children’s role in negative conflict resolution tactics and factors that may ultimately reduce or eliminate violence within the family system.

More research that includes diverse samples of mothers and children is needed to elucidate the complex phenomenon of reciprocal violence in a family context. Specifically, samples that include ethnically diverse male and female children may significantly enhance generalizability of studies’ findings. Examining reciprocity in violence among marginalized populations, such as families experiencing substance use disorders, may provide a more in-depth understanding of conflict resolution tactics utilized in families experiencing multiple risk factors. Also, examining reciprocal
violence in families experiencing substance use disorders is especially needed when substance use might impair judgment and escalate violence. Findings from longitudinal studies might provide important implications for successfully intervening long-term with families experiencing high conflict. For instance, in order to create long-term change at the systemic level, it might be particularly advantageous for providers to consider children and parent-child interactions as crucial to the change process. Finally, dyadic data analysis needs to be conducted in studies to capture the interaction between family members engaging in aggressive behaviors. A commonly utilized approach, the Actor-Partner Interdependence Model (APIM), has become advantageous for analyzing dyadic data.

**Actor-Partner Interdependence Model**

Historically, research in the social science field has focused on the individual as the unit of analysis. Kenny, Kashy, and Cook (2006) suggest that cultural characteristics and statistical and methodological limitations may explain individuals serving as the unit of analysis. For example, popular statistical techniques, such as ANOVA and multiple regression, assume independence of the data and may not account for interactional effects between non-independent variables (Kenny et al., 2006). However, recent research on interpersonal relationships, such as the parent-child relationship, has focused on understanding the processes in the dyadic unit, and in turn, dyadic modeling techniques have significantly increased within the past decade (Collins, Welsh, & Furman, 2009).

APIM is a specific statistical model recommended for examining different types of dyadic relationships (Gonzalez & Griffin, 2012). APIM accounts for shared variance
in independent variables while also accounts for potential error covariance in dependent variables (Kenny et al., 2006). Specifically, APIM measures the influence of an independent variable on an individual’s dependent variable (actor effect) and on the dependent variable of the partner (partner effect). Examining the relationship between a mother’s level of verbal aggression at baseline and her level of aggression at twelve months is an example of an actor effect. An example of a partner effect is examining the relationship between a mother’s level of verbal aggression at baseline and her child’s level of aggression at twelve months. Also, the sample size in APIM is the number of dyads rather than the number of individuals (Kenny et al., 2006). For example, the sample size is 183 mother-child dyads and not 366 individuals in a study using APIM. In other words, APIM assesses the bidirectional effects of partners on an outcome, which allows researchers to examine both individualistic and dyadic outcomes.

Several studies have conducted APIMs to examine interactional processes in parent-child relationships and within a high risk context. Claridge et al. (2015) conducted a longitudinal APIM and found that mothers and children reported poorer quality of the mother-child relationship when mothers had a history of trauma. Results of APIM in another study revealed that childhood abuse history had different effects on IPV perpetration and victimization among men and women (Maneta, Cohen, Schulz, & Waldinger, 2012). Similarly, APIM results suggested that alcohol use problems mediated the relationship between victimization of IPV and perpetration of IPV among men but not women, and a trend towards significance was found for anger mediating the relationship between IPV perpetration and victimization among women (Sprunger, Eckhardt, &
Parrott, 2015). That is, APIM results indicated that anger and alcohol use problems may have different functions in relationships of those experiencing trauma and violence.

Overall, these studies indicate that APIM is a widely used statistical model for analyzing dyadic data among exceptionally vulnerable populations. Conducting APIMs in a study might reveal unique differences in the perspectives and experiences among partners that otherwise may not have been captured with individual-level statistical approaches. Moreover, APIMs are especially advantageous for analyzing data from interventions that aim to improve mother-child interactions. APIMs are an essential step towards empirically identifying the effects of an intervention on interactions between mothers and children, which may provide invaluable implications for strategies that target negative reciprocity in the mother-child relationship. Families at high risk, such as families experiencing trauma, may be especially in need of interventions for negative mother-child interactions.

**Family-Systems Interventions for Trauma**

Interventions are powerful resources that may change the processes governing a family system, possibly mitigating the devastating impact of trauma on generations of family members. Family-systems interventions have been highly successful in reducing trauma-related symptoms among adults and children. Interventions that include both mothers who experience IPV and children who witness the victimization have shown stronger decreases in externalizing problems and improvements in attitudes about violence among children than child only groups and control groups (Graham-Bermann, Lynch, Banyard, DeVoe, & Halabu, 2007). Oftentimes mothers improve their parenting
skills and children improve their coping skills after completing a family-based intervention for IPV (Becker et al., 2012). One type of family-based intervention, Parent-Child Interaction Training (PCIT), has been implemented with a sample of mothers who experienced IPV and children exposed to IPV (Timmer, Ware, Urquiza, & Zebell, 2010). PCIT involves conjoint mother and child therapy with a therapist providing live coaching on positive interactions. The overarching goal of PCIT is to target maladaptive interaction patterns between mothers and children in order to improve child behavior problems. Timmer et al. (2010) found that PCIT reduced problem behaviors among IPV-exposed children and decreased psychological symptoms among mothers. In sum, the studies by Graham-Bermann et al. (2007) and Timmer et al. (2010) suggest that conjoint mother-child interventions are viable options for improving outcomes among families experiencing IPV and may be superior to individual-based modalities.

However, family-systems interventions address other forms of interpersonal trauma beyond IPV, such as childhood abuse. Cognitive behavioral family therapy and multi-systemic therapy (MST) are two types of family-based interventions that are effective for childhood abuse experiences and have decreased the risk of further childhood abuse (See Carr, 2009). Timmer, Urquiza, Zebell, & McGrath (2005) examined the effectiveness of PCIT on parent and child outcomes among young children who experienced physical abuse. Improvements in child behavior problems and parent stress were found post-treatment in addition to reduced risk of further physical child abuse. Despite these positive outcomes, children with higher levels of behavioral problems were more likely to terminate treatment early than children with lower levels of
behavior problems (Timmer et al., 2005). That is, the effectiveness of some family-systems interventions for childhood abuse may be limited for children with more severe problem behaviors.

Few systemic interventions that target childhood abuse are intended for adult populations. An exception is Emotionally Focused Therapy (EFT). MacIntosh and Johnson (2008) implemented a study on EFT that involved couples with at least one partner with a history of sexual childhood abuse. However, many of the partners in the sample reported experiencing severe and chronic childhood abuse, and over half of the couples included both partners with trauma experiences. Findings suggested that couples engaged in EFT showed clinically significant increases in relationship satisfaction and reductions in trauma symptoms (MacIntosh & Johnson, 2008). Another study tested the effectiveness of EFT with couples that included a partner who experienced physical, sexual, or emotional childhood abuse (Paivio & Nieuwenhuis, 2001). Paivio and Nieuwenhuis (2001) found improvements in symptoms associated with childhood abuse and interpersonal problems at nine months post-treatment. In other words, family-systems interventions can be particularly beneficial for reducing the adverse effects of trauma on the family, regardless of the victim’s age or type of trauma experience. Yet, it is important to note that family-systems interventions that target trauma have limitations as well.

**Limitations of family-systems interventions for trauma**

Although the primary goal of family-systems interventions is to improve the parent-child relationship, many of these interventions include measures that assess
individual-level outcomes, such as internalizing and externalizing behaviors among children, rather than systemic outcomes, such as parent-child interactions. More studies are needed to capture the effects of family-systems interventions on parent-child interactions, especially on maladaptive and reciprocal behaviors between mothers and their children. Also, the effectiveness of family-systems interventions on multiple trauma experiences is not well understood. While it is likely that some of the women in prior studies experienced cumulative trauma, it is not clear if women with cumulative trauma engaged in family-systems interventions have similar or different outcomes as women with a single trauma event or no trauma events. Given that street victimization among women is a neglected topic in the literature, interventions that address the detrimental effects of street victimization on women or their children are rarely implemented or evaluated. Therefore, interventions for addressing street victimization are in critical need of development and testing. Finally, few studies have investigated women’s engagement in risk behaviors or comorbid mental health problems, beyond post-traumatic stress disorder (PTSD), in conjunction with trauma experiences. Given the high overlap between trauma and substance use (Chase et al., 2003; Sacks et al., 2008), further research is warranted on family-systems interventions that target the concurrent effects of both these experiences.

**Family-Systems Interventions for Substance Use**

With estimates suggesting that 8.3 million children (11.9%) live with a parent who abuses or is dependent on alcohol and/or illicit drugs (Substance Abuse and Mental Health Services, 2009), systemic interventions are clearly needed to offset the profound
impact of substance use disorders on the family. Yet, relatively few substance use
treatment programs have adopted a family-systems approach or addressed the mother-
child bond in addition to the emotional, physical, and developmental needs of children.
Treatment programs tend to emphasize parent skills training in order to improve
outcomes, but parent skills training alone may not be sufficient for changing maladaptive
patterns among drug-dependent mothers or to change cycles embedded within the family
system (Suchman, Mayes, Conti, Slade, & Rounsaville, 2004). Instead, substance use
treatment programs that emphasize both parent skills training and the mother-child
relationship have been highly effective in improving individual and family outcomes
(Dakof et al., 2010). For example, the Engaging Moms Program (EMP) was developed
for substance using mothers enrolled in drug court and consisted of parent skills training
and family therapy (Dakof et al., 2010). Dakof and colleagues (2010) found that mothers
in the EMP group had greater or equal improvements on child welfare outcomes, alcohol
use, family functioning, and risk for child abuse relative to mothers in the intensive case
management services group (Dakof et al., 2010). Thus, parent skills training and family
therapy might be more effective than individual-oriented approaches that do not address
the emotional bond between children and mothers who use alcohol and illicit drugs.

Unlike adult populations, family-systems approaches are widely used in substance
use interventions for adolescents. Multidimensional Family Therapy (MDFT), Functional
Family Therapy (FFT), Family Behavior Therapy (FBT), Brief Strategic Family Therapy
(BFST), and MST are a few family-based approaches that have yielded positive
outcomes for adolescent substance use (See Austin, Macgowan, & Wagner, 2005).
Higher reductions in substance use frequency, substance use problems, delinquency, and risk in family and peer domains have been found for youth engaging in MDFT than a peer intervention group (Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009). Another study found that fourteen years post-treatment, juvenile delinquents who participated in individual therapy had a 3.33 increased risk of having a drug-related arrest than juvenile delinquents who participated in MST (Schaeffer & Borduin, 2005). That is, family-systems interventions are effective for substance use severity and violent behaviors among adolescents over time. Despite these positive outcomes, Austin and colleagues (2005) found a lack of diversity in the samples of family-based studies for adolescent substance use. With the exception of MDFT, ethnic and racial adolescents, as well as female adolescents, were underrepresented in the studies (Austin et al., 2005).

However, Ecologically-Based Family Therapy (EBFT) is a family-systems intervention that has been utilized with samples of ethnically diverse male and female runaway youth who use substances. Substance using runaway youth in EBFT have reported greater declines in family conflict during treatment and higher levels of family cohesion post-treatment than peers in other individual-based treatment modalities (Guo, Slesnick, & Feng, 2015). Results of a study by Slesnick and Prestopnik (2009) suggested that youth engaged in EBFT showed a 97% reduction in days of alcohol use and a 77% reduction in the number of alcoholic beverages consumed on drinking days at 15 months post-baseline. In comparison, peers engaged in services as usual showed a 59% decline in days of alcohol use and showed little change in the number of alcoholic beverages consumed on drinking days at 15 months post-baseline (Slesnick & Prestopnik, 2009). In
addition, internalizing and externalizing problem behaviors have improved over time among runaway youth who use substances and are engaged in EBFT (Slesnick, Guo, & Feng, 2013). Thus, EBFT is a promising intervention for exceptionally high risk families with multiple areas of functioning in need of services. Substance use severity, externalizing problem behaviors, and intense family conflict are areas that can be effectively addressed through engagement in EBFT. How EBFT may alter reciprocity in externalizing problem behaviors and conflict among substance using families is in need of investigation. Overall, family-systems interventions have strong empirical support for reducing the severity of alcohol use and the consequences associated with alcohol and illicit drug use. In other words, implementing and evaluating family-systems interventions is essential for understanding and addressing the diverse needs of marginalized, high risk families. However, some family-systems interventions for substance use are limited in scope and have shown significant drawbacks in implementation.

Limitations on family-systems interventions for substance use disorders

Although relational models are strongly recommended for families experiencing substance use (CSAT, 2009), substance use interventions for adults often lack active involvement of children or primarily focus on parent skills training. Yet, little success has been found with programs that primarily focus on parent skills training (Suchman et al., 2004). Suchman and colleagues (2004) found a lack of long-term improvements in some studies, or results did not differ between the intervention and control groups, on family conflict, family bonding, and children’s psychological functioning (Suchman et al.,
Moreover, interventions that address substance use among youth are often challenged by high drop-out and relapse rates (Austin et al., 2005). Without identification of the underlying factors for high attrition rates, it is unclear whether youth who completed treatment are better-suited for that specific treatment modality than peers who dropped out of the treatment. More studies on family-systems interventions with low attrition rates are needed in order to obtain a clearer understanding of treatment effects for youth who use substances. In general, methodological and design limitations characterize family-based interventions for adolescent substance use. Lack of random sampling procedures, treatment fidelity checks, and intent-to-treat analyses, in addition to small sample sizes, are examples of limitations (Austin et al., 2005). Rigorous methodology and longitudinal designs are needed to better understand how within-treatment processes are related to long-term outcomes. Finally, there is a paucity of literature on family-systems interventions for adolescents who use substances and experience trauma. Having family-systems interventions focus on trauma and substance use conjointly provides a more comprehensive lens of challenges and client needs that are likely to confront service providers.

**Family-Systems Interventions for Substance Use and Trauma**

Despite the inextricable link between trauma and substance use, only a small number of interventions have been developed to specifically target complex trauma among women with substance use disorders. Helping Women Recover (HWR) and Beyond Trauma (BT) are two examples of gender-responsive, trauma-informed curricula specifically targeting women who use substances (Covington, Burke, Keaton, & Norcott,
The curricula are unique by addressing the concurrent effects of trauma, addiction, and psychological development among women and can be implemented in a variety of settings. Covington et al. (2008) created Women’s Integrated Treatment (WIT) based on the HWR and BT curricula. Findings from Covington et al. (2008) suggested that women who completed WIT showed improvements in substance use, depression, and trauma symptoms (anxiety, sleep disturbances, and dissociation) post-treatment. Although interpersonal relationships were a topic explored in WIT, family members and romantic partners were not actively involved in the change process.

Romantic partners have been included in other types of systemic interventions adapted for couples experiencing substance use disorders and IPV. For example, Fals-Stewart and Clinton-Sherrod (2009) implemented behavioral couples therapy (BCT) with substance abusing men who perpetrated IPV and their female partners. Compared to individual-based treatment (IBT), couples in BCT reported less severe IPV and substance use at 12 months post-treatment than male partners in IBT. Also, couples in the BCT group experienced less severe IPV on days that the male partners used substances (Fals-Stewart & Clinton-Sherrod, 2009). Adding a parent skills training component to BCT may indirectly benefit children as well. Parent Skills with Behavioral Couples Therapy (PSBCT) is associated with significant reductions in IPV and substance use among couples that included a male partner with an alcohol use disorder (Lam, Fals-Stewart, & Kelley, 2009). In addition, PSBCT yielded improvements in parenting skills and decreased child protective services (CPS) involvement at 12 months post-treatment. Overall, PSBCT showed superior outcomes compared to IBT (Lam et al., 2009).
In sum, systemic interventions that specifically address the concurrent effects of trauma and substance use are scarce, highlighting an underserved population in crucial need of comprehensive services. Interventions that target substance use and trauma may provide a richer understanding of the underlying factors and interactions that contribute or maintain long-term, adverse outcomes. Furthermore, these types of interventions might be enhanced by adding parenting components. Addressing parenting behaviors might provide a deeper understanding of the intervention’s effects on the family system and parents’ influence on their children’s outcomes. However, interventions that address trauma and substance use conjointly often pose significant challenges and limitations in implementation.

**Limitations of the literature on interventions that address trauma and substance use**

Two significant limitations characterize the literature on interventions for substance use and trauma. First, there is a dearth of interventions and curricula that address the comorbid effects of substance use and trauma. Manualized interventions need to be developed that target children and parents with substance use disorders and a history of trauma. Findings from studies that are based on manualized curricula can be replicated in other studies with high risk families. Analogously, the efficacy of family-systems interventions for children and their substance using mothers with trauma experiences needs to be investigated, as well as the efficacy of these interventions on other outcomes, such as conflict resolution tactics.

Second, significant methodological and research design limitations are associated with the literature on family-systems interventions that target substance use and trauma.
For instance, the study by Covington et al. (2008) was not randomized, included a pre/posttest research design, did not include a control group, and adhered to an individualistic approach. Also, WIT did not actively involve children or utilize a relational approach. Similarly, the studies by Fals-Stewart and Clinton-Sherrod (2009) and Lam et al. (2009) did not involve children in the treatment process. Involving children in the treatment process might provide the opportunity to utilize a more systemic approach. Systemic interventions that address trauma, substance use, and the parent-child relationship may shed light on destructive interactions that impact the physical and emotional health of all members in the family.

The Proposed Study

The current study will address several gaps in the literature on trauma and parent-child interactions among families with a mother experiencing a substance use disorder. Specifically, this study has three research goals. First, this study will conduct a LPA to statistically create groups of women based on the type and frequency of their trauma experiences. Factors that influence the creation of these groups of women will be investigated as well. The second goal is to conduct APIMs in order to examine reciprocity in conflict resolution tactics (reasoning, verbal aggression, and physical violence) among mothers and children, and how reciprocity in conflict resolution tactics varies among the different trauma groups. Third, this study will investigate the effects of family-systems therapy on reasoning, verbal aggression, and physical violence used to resolve conflicts among the different trauma groups. Findings of the current study may
assist prevention efforts in reducing the negative individual and social consequences of maladaptive conflict resolution tactics.

Specifically, the current study has three research objectives and four hypotheses:

Research objective 1: Using LPA, identify the heterogeneous groups of maternal trauma experiences by taking a person-centered approach and explore depressive symptoms, age, ethnicity, runaway episodes, and substance use among mothers as characterizing the trauma groups.

Recent studies are using more advanced statistical approaches, such as a person-centered LPA, to empirically group individuals who have experienced trauma (Cloitre et al., 2013; Elklit et al., 2014). Groups created by LPA have been significantly different, suggesting that individuals with trauma experiences are not a homogenous group. Yet, a person-centered LPA has not been conducted with a sample of women with multiple trauma experiences and a substance use disorder. Moreover, factors that predict groups of individuals with trauma experiences are unknown. Although demographic characteristics (age and ethnicity), depressive symptoms, runaway episodes, and substance use are associated with trauma experiences (Cohen et al., 2008; Rayburn et al., 2005; Thrane et al., 2011; Ullman & Filipas, 2005), no study to date has examined whether these factors influence the grouping of substance using women who experience trauma.

Research objective 2: Using APIMs, investigate the reciprocal relationship between mothers’ and children’s reports of reasoning, verbal aggression, and physical violence used to resolve conflicts over time within each trauma group identified in research objective 1.
H1: Actor effects will be found for both mothers’ and children’s levels of reasoning, verbal aggression, and physical violence over time. For example, an actor effect is present when a mother’s level of verbal aggression at baseline predicts her level of verbal aggression at twelve months.

H2. Partner effects will be found for both mothers’ and children’s levels of reasoning, verbal aggression, and physical violence over time. For example, a partner effect is present when a mother’s level of verbal aggression at baseline predicts her child’s level of verbal aggression at twelve months.

H3. In the higher trauma group, mothers’ reasoning, verbal aggression, and physical violence at baseline will predict a higher level of reasoning, verbal aggression, and physical violence among mothers (i.e., actor effects) and children (i.e., partner effects) at 12 months compared to the lower trauma group.

Statistical models such as APIM are vital to capturing the reciprocal effects in parent-child interactions and are a superior approach to analyzing dyadic data than statistical techniques that assume independence of the data (Kenny et al., 2006). Support is strengthening for the bidirectional influence of parents and children in that parents influence their children and children influence their parents (Broderick, 1993; Doumen et al., 2008). For instance, mothers’ use of physical aggression to resolve conflicts has predicted an increase in children’s aggression over time, and children’s aggression has predicted an increase in mothers’ use of physical aggression to resolve conflicts (Sheehan & Watson, 2008). Also, children’s aggression has predicted an increase in mother’s use of
reasoning to resolve conflicts (Sheehan & Watson, 2008). However, studies that analyze dyadic data in mother-child relationships are scarce, thus limiting the use of dyadic modeling techniques including APIM. Analogously, few studies examine dyadic data on children and mothers with multiple trauma experiences, despite that mothers with multiple trauma experiences often have poor parenting behaviors (Cohen et al., 2008).

Research objective 3: Examine treatment effects for conflict resolution tactics used by the various trauma groups identified in research objective 1.

H₄. Among mothers and children in the family-systems therapy condition, reasoning, verbal aggression, and physical violence at baseline will no longer significantly predict these conflict resolution tactics at 12 months, but reasoning, verbal aggression, and physical violence will remain significant predictors of these conflict resolution tactics at 12 months among mothers in the attention control.

Family-systems therapy, such as EBFT, has yielded positive outcomes for youth and mothers experiencing high levels of conflict (Guo et al., 2015). EBFT is more effective than some individual-based treatment modalities on improving family conflict, and improvements have been maintained at 24 months (Guo et al., 2015). Another study suggested that EBFT was advantageous for reducing externalizing problem behaviors among youth who use substances (Slesnick et al., 2013). Although previous research examined reciprocity in conflict resolution tactics with substance using youth and their primary caregivers, treatment effects
of family therapy were not investigated (Bartle-Haring et al., 2015). In addition, family-systems interventions have typically shown positive outcomes for women who experience trauma (Graham-Bermann et al., 2007; Timmer et al., 2010), but the effects of EBFT on women with varying trauma experiences are unknown.
Participants

Participants included 183 mother-child dyads. Eligible mothers met criteria for a substance use disorder as measured using the computerized diagnostic interview schedule (CDIS; Shaffer, 1992); were seeking outpatient treatment for their substance use disorder; reported a single, non-cohabitating, divorced, or widowed current relationship status; and had a biological child between the ages of 8 and 16 years living at home at least 50% of the time over the prior 2 years or 100% of the time in the past 6 months. If more than one child aged 8 to 16 years old lived at home, then the child who reported using alcohol or illicit drugs was included in the study. If more than one child in the family reported using alcohol and/or illicit drugs, then the child who reported more severe substance use as indicated on the Form 90 (Miller, 1996) was included in the study. If none of the children reported using alcohol and/or illicit drugs, then the child with the greater total problem score the Youth Self-Report (Achenbach & Edelbrock, 1982) was included in the study. Exclusion criteria included unremitted psychosis or any other condition that impaired women’s ability to consent or participate in the project. Demographic characteristics of the current sample are provided in Table 1.
Measures

A demographic questionnaire was used to characterize all participants in the current study. Demographic characteristics included age, gender, education status of women and their children, and ethnicity. Ethnicity was dichotomized as minority vs. non-minority status given the limited ethnic variability in this sample. Additionally, the form queried frequency of runaway episodes and trauma experiences such as childhood abuse, IPV, and street victimization.

Trauma experiences. Childhood abuse was assessed using two questions adapted from prior studies and the literature (Bensley, Van, & Wynkoop, 2003; Bonomi, Cannon, Anderson, Rivara, & Thompson, 2008). Physical childhood abuse was measured using the question, “Has anyone ever hurt or abused you physically (enough to leave marks or bruises or burns)?” Sexual childhood abuse was determined with the question, “Has anyone ever touched you sexually in a way that made you feel uncomfortable OR that hurt you OR that was against your will?” Response items were dichotomous (i.e., “yes” or “no”). In order to prevent misclassification of childhood abuse with IPV, RAs reported who perpetrated the abuse (e.g., parents, family members, friends of the family), and also instructed women to report only those abuse experiences that occurred before the age of 18.

IPV was assessed using five questions from the Behavioral Risk Factor Surveillance Survey (BRFSS). The BRFSS has been utilized to measure the prevalence of IPV in the United States (CDCP, 1994). Sexual IPV was determined by the questions, “Has an intimate partner ever forced you to participate in a sex act (oral, vaginal or anal
penetration) against your will?” and “Has an intimate partner ever threatened, coerced or physically forced you into any sexual contact that did not include penetration or intercourse?” Physical IPV was determined by the question, “Has an intimate partner ever hit, slapped, shoved, choked, kicked, shaken or otherwise physically hurt you?” Emotional IPV was determined by the questions, “Has an intimate partner ever put you down, or called you names repeatedly, or controlled your behavior?” and “Have you ever been frightened for your safety or that of your family or friends because of anger or threats of an intimate partner?” Response items were dichotomous (i.e., “yes” or “no”).

Street victimization was assessed using five questions on crimes experienced within the past 12 months of the baseline assessment (Whitbeck & Simons, 1990). Sexual victimization experiences were determined by questions such as “Have you been raped?” and “Have you been sexually assaulted, other than rape?” Physical victimization experiences were determined by asking women whether they had been “Assaulted or physically attacked.” Women indicated whether they had been robbed (i.e., “… was something of your taken from you by someone who threatened you with violence if you didn’t give it to them?”) or burglarized (i.e., “… has someone broken into a room or apartment of yours and taken some of your property?”). Response items were dichotomous (i.e., “yes” or “no”).

**Depressive symptoms.** Depressive symptoms were assessed by the Beck Depression Inventory-II (Beck, Steer, Brown, 1996), which is the most widely utilized instrument for measuring severity of depressive symptoms. The BDI-II is a self-administered questionnaire that consists of 4 subscales (Depression, Anxiety,
Hopelessness, and Suicidal Ideation) and 21 items that reflect the cognitive, affective, and somatic symptoms of depression. The majority of items are rated on a four point scale from 0 (not at all) to 3 (extreme form of each symptom). The total score ranges from 0-63 and is calculated by summing the highest rating for each item. Severity levels for depressive symptoms include minimal (scores 0-13), mild (scores 14-19), moderate (scores 20-28), and severe (scores 29-63). The test-retest correlation has been high at .93 in prior studies (Smarr & Keefer, 2011). Overall, strong psychometric support has been found for the BDI-II (Smarr & Keefer, 2011), and the self-administered questionnaire has been successfully utilized with diverse populations including homeless youth (Slesnick, Prestopnik, Meyers, & Glassman, 2007). Internal reliability is high in the current study (cronbach alpha = .94).

**Aggression and violence.** The Conflict Tactics Scale (CTS) is designed to measure the use of reasoning, verbal aggression, and physical violence between women and their child (Straus, 1979, 1990). The reasoning subscale consists of three items and assesses the use of rational discussion, argument, and reasoning in order to resolve conflicts (Straus, 1979). The verbal aggression subscale consists of six items and assesses the use of verbal and nonverbal behaviors that symbolically hurt the other person, or the use of threats to hurt the other person, in order to resolve conflicts (Straus, 1979). The physical violence subscale consists of ten items and assesses the use of physical force in order to resolve conflicts (Straus, 1979). Behaviors, or items, that are low in coerciveness and aggressiveness are listed at the beginning of the CTS, and items gradually increase in coerciveness and aggressiveness towards the end of the list (Straus, 1979). Response
items include “Never,” “Once,” “Twice,” “3-5 times,” “6-10 times,” “11-20 times,” and “more than 20 times.” Straus and Hamby (1997) found considerable evidence for the validity of the CTS. The alpha coefficient for the verbal aggression subscale averaged .68 across 8 studies (Straus & Hamby, 1997), while Amato (1991) found test-retest reliability for the physical violence subscale of .80 over 14 weeks. For the current study, alpha coefficients for the CTS subscales are reported in Table 2.

In the current study, internal consistency is low for mothers’ perception of their reasoning skills used to resolve conflicts (alpha coefficient is .29) and mothers’ perception of their child’s reasoning skills used to resolve conflicts (alpha coefficient is .48) at baseline. Therefore, a confirmatory factor analysis (CFA) was conducted to investigate how well the three items (indicators) measured the construct underlying the reasoning subscale. For mothers’ perception of their reasoning skills at baseline, CFA results revealed that none of the factor loadings of these indicators were statistically significant. Specifically, the standardized factor loading for the first item was .067 (p=.779), while the factor loading for the second item was 1.451 (p=.768). Similarly, the standardized factor loading for the third item was .161 (p=.769). For mothers’ perception of their child’s reasoning skills at baseline, CFA results revealed that none of the factor loadings of these indicators were statistically significant. The standardized factor loading for the first item was .192 (p=.249), while the factor loading for the second item was 1.533 (p=.204). The standardized factor loading for the third item was .229 (p=.235). In sum, these three items were not good representations of the construct of reasoning skills used as a conflict resolution tactic in this study. Therefore, the current study will use the
question “got information to back up your side of things” as a face valid measure of reasoning skills.

In addition, four of the physical violence items queried experiences of beating up the other person, threatening the other person with a knife or gun, using a knife or gun, or using another form of aggression (probing). The frequency of these items was low or zero in the current study, which is similar to prior studies that found low frequencies for the items in their samples, mainly because these items are rare events (Bartle-Haring et al., 2015; Hornung, McCullough, & Sugimoto, 1981). Given that the distribution of these items are not typically normal, prior studies have removed the items in order to reduce skewness and kurtosis of the scores (Bartle-Haring et al., 2015; Rosen, Bartle-Haring, & Stith, 2001). Following prior studies, these four items were removed and six items were used to assess physical violence in this study. Despite reducing the physical violence subscale to six items, the subscale still contained a preponderance of zeros. To address the preponderance of zeros, the physical violence items were recoded so that zero indicated zero, the frequency below the mean was recoded as one, and the frequency equal or above the mean was recoded as two. This type of categorization has been utilized in prior studies and to examine reciprocal violence among families experiencing substance use (Bartle-Haring et al., 2015; Rosen et al., 2001).

**Substance use.** The Form 90 is a semi-structured interview developed for NIAAA funded Project MATCH that measures substance use using a timeline follow-back method and grid averaging (Miller, 1996). Categories of substance use include alcohol, tobacco, marijuana/cannabis, tranquilizers, sedatives/downers, steroids,
stimulants/uppers, cocaine, hallucinogens, opiates, inhalants and other drugs. Women were asked to recall the frequency and quantity of substances used within the past 90 days prior to the last day of use. Interviewers used memory aids, such as holidays or special occasions, to assist clients’ recall of substance use frequency. In addition, the Form 90 assesses the number of days of incarceration, residential treatment, health care utilization (e.g., medical, alcohol, drug, and mental health care), 12-step meeting participation, employment, education, and religious activity participation. Age of first alcohol, tobacco, and illicit drug use was recorded in addition to weeks of lifetime use of these substances. Levels of alcohol, tobacco, and illicit drug use are estimated by categorizing each substance into single use, several uses, or heavy use. Route of administration (oral ingest, smoke, nasal inhale, needle, or other) is indicated on the Form 90 as well. The measure has been shown to have good-to-excellent test-retest reliability and convergent validity for alcohol and illicit drug using populations (Slesnick & Tonigan, 2004).

**Procedure**

Staff at a substance abuse treatment facility in a large Midwestern city referred potentially eligible women to project research assistants (RAs). RAs engaged and screened women who were interested in the project and contacted women’s children to obtain their permission to participate in the study. Interested and eligible women signed a consent form and children signed an assent form before completing the baseline assessment. Urn randomization procedures were used to reduce the likelihood of non-equivalent treatment groups by randomly allocating groups on categorical and continuous
variables (Slesnick & Prestopnik, 2005). Prior clinical trials have utilized urn randomization procedures to prevent baseline differences on key variables between groups (Project MATCH, 1993). All women received treatment as usual through the substance abuse treatment facility and were assigned to in-home EBFT (n = 61), in-office EBFT (n = 61), or Women’s Health Education (WHE, mothers only; n = 61). Each condition included 12 50-minute sessions, and all therapy was completed within 6 months of the baseline assessment. Mothers and children were evaluated at 3, 6, 12, and 18 months post-baseline assessment. Women were offered a $75 gift card for each assessment and children were offered a $40 gift card. In addition, families received a $5 gift card for each treatment session attended. All procedures in this study were approved by The Ohio State University's Institutional Review Board. The design of the original randomized controlled trial is summarized in Figure 1.

**Therapist training and supervision.** Three master’s-level therapists provided EBFT, while two master’s-level therapists provided WHE. All therapists were female, trained in substance use treatment, and had backgrounds in social work, couple and family therapy, or counseling. EBFT training consisted of readings (the manual and other written materials) and a two-day didactic involving discussions, a video, and role play exercises. For instance, role play exercises enabled therapists to practice specific techniques including reframes, relabels, interrupting negative process, and relational interpretations. Therapists had ongoing, weekly supervision. All therapy sessions were audio recorded for treatment adherence checks, and selected audiotapes were reviewed by the clinical supervisor in order to provide therapists with feedback.
**Treatment fidelity.** In total, 112 therapy sessions were coded independently by three graduate students and one supervisor to ensure EBFT treatment adherence and competence. Coders evaluated ten different treatment procedures. Items determined if a procedure occurred during the therapy session (yes/no) and how well the procedure was implemented by the therapist (rated on a 7-point Likert scale). The 7-point Likert scale ranged from 1 = “very poorly” to 7 = “exceptional.” Procedures that did not occur in therapy sessions were coded as zero. If the inter-rater reliability fell below .80, coders met to discuss and resolve discrepancies in order to increase the reliability. Alternatively, therapists who needed more focused training had individual supervision sessions with the clinical supervisor in order to improve treatment fidelity.

**Treatment interventions.**

All women received the usual intensive outpatient treatment (IOP) or outpatient treatment (OP) provided at the substance abuse treatment facility. IOP offers participants a minimum of three hours of services three days a week for eight weeks. Services included assessment, crisis intervention, case management, urine drug screening, individual counseling, and group counseling. Group counseling included educational content, coping skills, relapse prevention, and encouragement to attend 12 step meetings in the community. Participants who needed less intense services were enrolled in OP. OP offered a minimum of one, two hour group counseling session and one, one hour individual session each week. Group topics could be raised by group members and included 12 Step Recovery, relapse prevention, anger management, and thinking errors. IOP and OP groups consisted of one facilitator and up to 12 participants. The outpatient
staff ranged in credentials from non-degree certified chemical dependency counselors to Masters level independently licensed counselors. Following completion of IOP or OP, participants could attend a peer lead aftercare support group weekly for an indefinite duration. Although the current study included treatment-seeking women, IOP and OP involved both men and women. In addition to treatment as usual through the substance use treatment facility, women were randomly assigned to family systems therapy, home- or office-based, or women’s health education, as described below.

Ecologically-Based Family Therapy (EBFT). EBFT is a manualized family-systems treatment that incorporates the Theory of Social Ecology (Bronfenbrenner, 1979). The goal of EBFT is to identify and change factors that influence maladaptive behaviors across the multiple systems. Specifically, maladaptive behaviors such as substance use and related individual and family problems are targeted in therapy sessions. EBFT includes family therapy sessions with the mother, child, and any other family member conjointly. Individual therapy is also provided for the mother or child and focuses on decision-making, emotion-regulation, and other interpersonal challenges that influence problem behaviors including substance use. Specifically, EBFT is organized into three distinct phases. In the first phase, therapists focus on engaging family members into the treatment process and assessing the strengths, weaknesses, needs, and resources of families. Also, therapists use techniques such as reframes to help family members become ready for change. The second phase emphasizes systemic change in intra and inter-personal issues and within the larger social system. In the last phase, therapists review the goals, accomplishments, and areas needing continued focus among family
members. As noted earlier, EBFT has been successfully utilized with runaway substance using youth and families and has shown superior outcomes to individual-based treatment modalities (Guo et al., 2015; Slesnick et al., 2013; Slesnick & Prestopnik, 2005, 2009). In the proposed study, EBFT was offered to families in a private office at the substance abuse treatment facility (office-based condition) or in the families’ homes (home-based condition).

**Women’s Health Education (WHE).** WHE is a manualized psychological treatment that focuses on a variety of topics including understanding the woman's body, human sexual behavior, pregnancy and childbirth, STD's, HIV, and AIDS. Treatment consists of 50 minute individual sessions offered at the substance abuse treatment facility led by licensed master’s level counselors. WHE does not involve family-based techniques. As an attention control in the proposed study, WHE controlled for the Hawthorne effect in order to reduce the likelihood that effects of the EBFT treatment was attributed to nonspecific features.

**Statistical Analysis Plan**

Data will be analyzed in three steps. First, univariate and bivariate analyses will be conducted to describe the characteristics of the sample and the relationships between variables. Univariate analyses (e.g., frequencies, percentages, means, and standard deviations) will assess demographic characteristics of the participants. Bivariate analyses, such as correlations, will examine the relationship between type of trauma (childhood abuse, IPV, and street victimization) and conflict resolution tactics (reasoning, verbal aggression, and physical violence).
Second, a latent profile analysis (LPA) will be conducted using Mplus 7.3 software (Muthén & Muthén, 2014) to identify subgroups of mothers based on twelve trauma indicators. The twelve indicators will include physical childhood abuse, sexual childhood abuse, physical IPV, two forms of sexual IPV, two forms of emotional IPV, physical street victimization, two forms of sexual street victimization, burglary, and robbery. LPA is an iterative process that partitions the variance and covariances within the sample so that there is little to no variation within a grouping, but the groups vary based on mean differences on the indicators. In order to determine how many classes for the data best, the analyst estimates a series of models with increasing number of classes and compares their fit. Several criteria will be used to decide the optimal numbers of classes. Fit indices such as the Bayesian Information Criterion (BIC) and adjusted Bayesian Information Criterion (ABIC) will be used to determine the best number of classes. The BIC and ABIC have performed relatively well as indicators of model fit (Nylund, Asparouhov, & Muthen, 2007) with decreasing values indicating better fit. Also, the bootstrapped likelihood ratio-test (BLRT) provides a way to compare the fit of a model with a model with one less class. The p-value provided allows the analyst to determine if the model estimated fits better (a significant p-value) than a model with one less class (Nylund et al., 2007). Entropy will be used to determine how well each mother fits within her class of trauma experiences, and entropy values closer to 1 suggest better classification (Hooper et al., 2015). All of these fit indices are used to determine which model fits best. A multinomial logistic regression will be performed to examine factors characterizing the different trauma groups. Demographic and individual level variables
such as depressive symptoms, age, minority vs. non-minority status, runaway episodes, and substance use will be included in the model as predictors of the trauma groups.

Third, Actor Partner Interdependence Models (APIMs) using Mplus 7.3 software (Muthén & Muthén, 2014) will be performed to examine the reciprocal relationship between mothers’ and children’s conflict resolution tactics across two time points. APIMs for each form of conflict resolution tactic (i.e., reasoning, verbal aggression, and physical violence) will be performed for each trauma group identified by the LPA in the first research objective. Invariance tests will be performed to test if paths (i.e., autoregressive and cross-lagged paths) are invariant across different trauma groups. Chi-square difference tests will be used to determine if significant difference exists between nested models. Specifically, a baseline structural model in which all parameters are freely estimated for the trauma groups will be compared to a nested model in which all parameters are constrained to be equal across the groups (Bollen, 1989). Several fit indices will be used to determine which model best represents the data including a root-mean-squared error of approximation (RMSEA) between .00 and .08, comparative fit index (CFI), and Tucker–Lewis index (TLI) of .90 and above, chi-square, and change in chi-square given the change in degrees of freedom between the models. A significant chi-square difference test would indicate that the trauma groups are not equivalent. In turn, path coefficients will be examined to determine if actor effects and partner effects are non-equivalent across the trauma groups by testing structural invariance. In addition, treatment effects for reasoning, verbal aggression, and physical violence among the trauma groups will be tested in the APIM models. Specifically, treatment condition will
be added as a predictor to examine whether family-systems therapy will influence the actor and partner effects for reasoning, verbal aggression, and physical violence over time.

Missing item scores will be treated with an individual mean substitution. Individual mean substitution occurs when scores of an item are missing, and the mean of the available values for the item is calculated in order to replace the missing values (Widaman, 2006). Thus, conducting an individual mean substitution is advantageous because all of the available data is used to estimate the missing values and is an appropriate and simple method for addressing missing data (Shrive, Stuart, Quan, & Ghali, 2006; Widaman, 2006). Full information maximum likelihood in the Mplus 7.3 software (Muthén & Muthén, 2014) will be used to account for missing data when performing the analyses. In the current study, .5% (n=1) of data in the reasoning subscale, verbal aggression subscale, and physical aggression subscale were missing at baseline, while 13.1% (n=24) of data in these subscales were missing at 12 months.
Chapter 3: Results

**Preliminary Analyses**

Pearson correlational analyses were conducted to test the relationship between the continuous variables in the study. These correlations can be seen in Table 3. Results of the Pearson correlational analyses suggested that child’s age was positively associated with mother’s age, mother’s substance use, and mother’s verbal aggression at baseline, suggesting that with older children, mother’s used more substances and used more verbal aggression. Depressive symptoms were positively associated with mother’s verbal aggression at baseline, child’s verbal aggression at baseline, mother’s verbal aggression at 12 months, and child’s verbal aggression at 12 months, suggesting that when mothers had more depressive symptoms she and her child were more verbally aggressive concurrently and over time.

In addition, the reasoning skills and verbal aggression scores for both mother and child were positively correlated both within person and between persons over time. This indicates that when mothers used reasoning skills more, their children used reasoning skills more as well. In addition, the correlation analysis showed that when mothers used reasoning skills more, they also used verbal aggression more, and so did their children.
The opposite was also the case, so that when children used more verbal aggression so did their mothers, which may suggest some degree of reciprocity.

Moreover, chi-square analyses were conducted to determine the relationship between the categorical variables of minority vs. non-minority status, runaway episodes, physical violence used by mothers to resolve conflicts at baseline and 12 months, and physical violence used by children to resolve conflicts at baseline and 12 months. These results can be seen in Table 4. The chi-square analyses suggested that mother’s minority status was positively associated with child’s physical violence at baseline, and mother’s runaway episodes were positively associated with mother’s physical violence at baseline. That is, non-White mothers were more likely to have children with higher levels of physical violence at baseline, and mothers who ran away before 18 years of age were more likely to have higher levels of physical violence at baseline. Furthermore, mother’s physical violence at baseline was positively associated with child’s physical violence at baseline and with mother’s physical violence at 12 months. Similarly, child’s physical violence at baseline was positively correlated with child’s physical violence at 12 months. Finally, mother’s physical violence at 12 months was positively correlated with child’s physical violence at 12 months. This provides some evidence for reciprocity in violence among the mother-child pairs.

**Research Objective 1: Exploratory Group Testing of Maternal Trauma**

It was hypothesized that using Latent Profile Analysis (LPA), the heterogeneous groups of maternal trauma experiences would be identified by taking a person-centered approach. In LPA, the analyst tests a series of models with increasing numbers of classes.
to determine which number of classes best fits the data. A number of fit indices are used to make this determination as outlined above. Table 5 provides the results of the LPA with up to 6 classes. The five class model fit the data the best, with the lowest Bayesian Information Criterion (BIC), and adjusted Bayesian Information Criterion (ABIC), along with a significantly better fit than the four-class model according to the bootstrapped likelihood ratio-test (BLRT). The five-class model also had a high entropy suggesting that it was reliable in classifying the mothers into the appropriate trauma classes.

However, the sample sizes in two of the five classes were quite low (class 3; n=5 and class 5 n=23). In order to maximize the distinction between the classes, as well as have adequate sample sizes, some of the classes were collapsed. This was accomplished by comparing the classes on the proportion of mothers who experienced various forms of trauma within each class. This can be seen in Table 6. Mothers in class 1 (n=24) had the highest proportion of childhood sexual abuse and physical abuse, with little to no street victimization, and moderate proportions of IPV.

Class 2 (n=72) included mothers who had moderate proportions of sexual and physical childhood abuse, but high proportions of all forms of IPV and moderate levels of street victimization. Class 3 (n=5) included mothers who had experienced all forms of trauma including childhood, IPV, and street victimization. Class 4 (n=59) included mothers who had experienced very little trauma in all categories. Finally, Class 5 (n=23) included mothers with high levels of childhood sexual abuse, and high levels of IPV, with very little street victimization.
Thus, classes 1 and 2 were collapsed into a single class (n = 96) in order to create a class with high proportions of both physical and sexual childhood abuse and high proportions of physical and emotional IPV. Class 4 (n = 59) was left as is and had a low proportion of any form of trauma. Classes 3 and 5 were collapsed into a single class (n = 28) in order to create a class with high proportions of childhood abuse, street victimization, and IPV. This collapsed class included the highest proportions of childhood abuse (sexual), street victimization (sexual, physical, and robbery), and IPV (sexual, physical, and emotional). The three classes were then used in the next set of analyses.

Next, depressive symptoms, age, minority vs. non-minority status, runaway episodes, and substance use (alcohol and illicit drug use) were entered into a multinomial logistic regression in order to predict membership in the trauma groups. Mplus 7.3 software (Muthén & Muthén, 2014) automatically assigns the last class as the reference group, which in this case was Class 3, the class that experienced the most trauma. Results of the multinomial logistic regression revealed that for mothers in the first class, the odds of having depressive symptoms versus the reference group were 1.06 times higher (OR = 1.06, p < .01, 95% CI: 1.02-1.09, See Table 7). Also, for mothers in the first class, the odds of having a runaway episode before 18 years of age versus the reference group tended to be 2.11 times higher (OR = 2.11, p = .05, 95% CI: 1.44). In other words, mothers in Class 1 (the no street victimization group) had a higher likelihood of having more severe depressive symptoms and tended to have a higher likelihood of running away before 18 years of age compared to mothers in Class 3 (the multiple trauma group).
In addition, findings of the multinomial logistic regression showed that for mothers in the second class, the class that experienced the least amount of trauma, the odds of having depressive symptoms versus the reference group was 1.05 times higher (OR = 1.05, p < .05, 95% CI: 1.01-1.1; See Table 7). Also, for mothers in the second class, the odds of having a runaway episode before 18 years of age versus the reference group was 4.66 times higher (OR = 4.66, p < .01, 95% CI: 1.71-12.72). That is, mothers in Class 2 (few trauma experiences) had a higher likelihood of more severe depressive symptoms and of running away before 18 years of age compared to mothers in Class 3 (multiple traumas). Finally, for mothers in the second class, the odds of being older versus the reference group were marginally significantly higher (OR = 1.07, p = .06, 95% CI: 1-1.14). In other words, mothers in Class 2 tended to be older compared to mothers in Class 3. Substance use and minority vs. non-minority status were not significantly associated with the three trauma groups (p’s > .05).

In sum, the best fitting model for the LPA was a five class model, however, the sample sizes of some of the classes were quite small. In comparing the groups, two of the classes were collapsed, resulting in a three-class model based on the cumulative risk framework. Class 1 had higher proportions of childhood abuse and IPV, Class 2 had lower proportions of any form of trauma, and Class 3 had the highest proportions of childhood abuse, street victimization, and IPV. In the next step, a multinomial logistic regression showed that mothers in Class 1 and Class 2 were more likely to have higher depressive symptoms than mothers in Class 3. Also, mothers in Class 2 were more likely to experience a runaway episode before 18 years of age than mothers in Class 3.
Similarly, mothers in Class 1 tended to have a higher likelihood of having a runaway episode before 18 years of age than mothers in Class 3, while mothers in Class 2 tended to be older in age than mothers in Class 3. No other factors were found to characterize the three trauma groups.

**Research Objective 2: Using APIMs, investigate the reciprocal relationship between mothers and children in the use of conflict resolution tactics over time within each trauma group identified in research objective 1.**

For the second research objective, it was hypothesized that actor and partner effects would be found for both mothers’ and children’s levels of reasoning, verbal aggression, and physical violence over time. In addition, it was hypothesized that in the higher trauma group, mothers’ reasoning, verbal aggression, and physical violence at baseline would predict a higher level of these conflict resolution tactics among mothers (i.e., actor effects) and children (i.e., partner effects) at 12 months compared to the lower trauma group. To test these hypotheses, a group comparison procedure was used. In this procedure, the analyst first tests a baseline structural model that allows all the paths in the model to be free to vary across the groups, while the structure of the model is the same in all the groups. Then in a series of tests, paths are set equivalent and the fit of the estimated model is compared to the baseline model with a chi-square difference test to determine loss of fit (a significant chi-square difference). If there is a loss of fit than the paths that were set equivalent cannot be considered equivalent. If there is no loss of fit, then the next model with another equality constraint is tested and its chi-square is
compared to the previous model’s to determine loss of fit. These steps continue until all the paths in the model have been tested for equivalence among the groups.

**Results for reasoning skills.** A baseline structural model where all parameters were freely estimated across trauma groups was examined for reasoning skills used to resolve conflicts between mothers and children. Results of the baseline structural model indicated a good fit to the data: CFI = 1.00, TLI = 1.02, RMSEA = .00, $\chi^2(18) = 16.14$, $p > .05$. Next, a model where all paths were constrained to be equal across the trauma groups was examined. Results of this nested model indicated a relatively good fit to the data: CFI = .99, TLI = .98, RMSEA = .04, $\chi^2(26) = 28.71$, $p > .05$. A chi-square difference test was conducted between the baseline model and the nested model, which resulted in $\Delta \chi^2(8) = 12.57$, $p > .05$. The chi-square difference test was not significant and suggested there were no differences in the magnitude of the paths of the model among the trauma groups for reasoning skills used to resolve conflicts between mothers and children.

Further model testing was conducted to compare the means for reasoning skills across each trauma group. Results of the baseline structural model indicated a good fit to the data: CFI = 1.00, TLI = 1.02, RMSEA = .00, $\chi^2(18) = 16.14$, $p > .05$. Results of the nested model indicated a relatively good fit to the data: CFI = 1.00, TLI = 1.00, RMSEA = .00, $\chi^2(34) = 33.34$, $p > .05$. A chi-square difference test was conducted between the baseline model and the nested model, which resulted in $\Delta \chi^2(16) = 17.2$, $p > .05$. Again, the chi-square difference test was not significant and there was no loss of fit when the
means were set equivalent, suggesting that the means for reasoning skills for mothers and for children were the same in all three trauma groups.

Given that the means for reasoning skills and the paths in the APIM could be considered equivalent in all three trauma groups, a model was estimated using the full sample. Results of the full model indicated a good fit to the data: CFI = 1.00, TLI = 1.01, RMSEA = .00, χ²(6) = 4.91, p > .05. Results of the APIMs in this full model indicated that children’s reasoning skills at 12 months was predicted by their reasoning skills at baseline (β = .22, p < .05, See Figure 2), but mothers’ reasoning skills at 12 months were not predicted by their reasoning skills at baseline (β = .09, p > .05). The mean frequency for reasoning skills decreased from baseline to 12 months among mothers, but the mean frequency for reasoning skills was relatively consistent from baseline to 12 months among children (See Table 8). A trend towards significance was found for children’s reasoning skills at baseline predicting their mothers’ reasoning skills at 12 months (β = .19, p = .05), but mothers’ reasoning skills at baseline did not predict their children’s reasoning skills at 12 months (β = .01, p > .05). In addition, child’s age, child’s gender, and mother’s minority vs. non-minority status were entered as control variables in the model using the full sample. However, these demographic factors were not associated with reasoning skills used to resolve conflicts among mothers and their children at baseline.

In other words, the final model for reasoning skills indicated a significant path between children’s reasoning skills at baseline and at 12 months and a trend towards significance for the path between children’s reasoning skills at baseline and their
mothers’ skills at 12 months. Actor effects suggested stability in reasoning skills for children, and may suggest change in these skills for mothers, since a significant effect was not found for the mothers. In addition, partner effects suggested that children’s reasoning skills tended to predict their mothers’ skills at 12 months, but partner effects were not found for mothers’ reasoning skills predicting their children’s skills at 12 months. Child’s age, child’s gender, and mother’s minority vs. non-minority status were control variables in the final model. However, these demographic factors were not related to reasoning skills used to resolve conflicts among mothers and their children.

**Results for verbal aggression.** A baseline structural model where all parameters were freely estimated across trauma groups was examined for verbal aggression used to resolve conflicts between mothers and children. Results of the baseline structural model indicated a good fit to the data: CFI = 1.00, TLI = .99, RMSEA = .02, $\chi^2(18) = 18.51, p > .05$. Next, a model where all paths were constrained to be equal across the trauma groups was examined. Results of this nested model indicated a relatively good fit to the data: CFI = .99, TLI = .98, RMSEA = .04, $\chi^2(26) = 28.35, p > .05$. A chi-square difference test was conducted between the baseline model and the nested model, which resulted in $\Delta \chi^2(8) = 9.84, p > .05$. The chi-square difference test was not significant, suggesting that there were no differences in the magnitude of the paths of the model among the trauma groups for verbal aggression used to resolve conflicts between mothers and children.

Further model testing was conducted to compare the means for verbal aggression across each trauma group. Results of the baseline structural model indicated a good fit to the data: CFI = 1.00, TLI = .99, RMSEA = .02, $\chi^2(18) = 18.51, p > .05$. Results of the
nested model indicated a relatively good fit to the data: CFI = 1.00, TLI = 1.00, RMSEA = .01, \( \chi^2(34) = 34.26, p > .05 \). A chi-square difference test was conducted between the baseline model and the nested model, which resulted in \( \Delta \chi^2(16) = 15.75, p > .05 \). Again, the chi-square difference test was not significant and there was no loss of fit given that the means were equivalent, which suggested that the means for verbal aggression for mothers and for children were the same in all three trauma groups.

Given that the means for verbal aggression were the same in all three trauma groups, a model was estimated using the full sample. Results of the full model indicated a good fit to the data: CFI = .99, TLI = .98, RMSEA = .04, \( \chi^2(6) = 8.07, p > .05 \). Results of the APIMs in this full model indicated that children’s verbal aggression at 12 months was predicted by their verbal aggression at baseline (\( \beta = .31, p < .001 \) See Figure 3), and mothers’ verbal aggression at 12 months was predicted by their verbal aggression at baseline (\( \beta = .28, p < .001 \)). Specifically, the mean frequency for verbal aggression decreased over time among mothers and children (See Table 8). In addition, a trend towards significance was found for children’s verbal aggression at baseline predicting their mothers’ verbal aggression at 12 months (\( \beta = .13, p = .08 \), but mothers’ verbal aggression at baseline did not predict their children’s verbal aggression at 12 months (\( \beta = .13, p > .05 \)). Child’s age, child’s gender, and mother’s minority vs. non-minority status were entered as control variables in the final model. Results suggested that child’s age (\( \beta = .79, p < .001 \)) and mothers’ minority vs. non-minority status were associated with mothers’ verbal aggression at baseline (\( \beta = -2.52, p < .05 \)). Also, mothers’ minority vs. non-minority status was associated with child’s verbal aggression at baseline (\( \beta = -4.4, p \))
child’s gender was marginally associated with child’s verbal aggression at baseline ($\beta = -2.14$, $p = .06$).

In other words, the final model for verbal aggression indicated a significant path between children’s verbal aggression at baseline and at 12 months and between mothers’ verbal aggression at baseline and at 12 months. Also, the final model for verbal aggression indicated a trend towards significance for the path between children’s verbal aggression at baseline and mothers’ verbal aggression at 12 months, but partner effects were not found for mothers’ verbal aggression at baseline and children’s verbal aggression at 12 months. Thus, actor effects indicate stability in verbal aggression for mothers and their children. Partner effects indicate that children’s verbal aggression tended to predict mothers’ verbal aggression at 12 months, but mothers’ verbal aggression did not predict children’s verbal aggression at 12 months. Moreover, child’s age, child’s gender, and mother’s minority vs. non-minority status were control variables in the final model. Results showed that mothers who identified as a minority were likely to use lower levels of verbal aggression, and to have children who used lower levels of verbal aggression, to resolve conflicts at baseline. Older children had mothers who used higher levels of verbal aggression to resolve conflicts at baseline, and male children tended to use lower levels of verbal aggression when resolving conflicts at baseline.

**Results for physical violence.** Also, model testing was conducted to assess physical violence used to resolve conflicts among mothers and their children over time. However, results of the APIMs indicated a lack of variability in mothers’ and children’s physical violence in conjunction with a low prevalence of these behaviors occurring in
the sample. Therefore, an exploratory analysis was conducted by clustering the six physical violence items into three indicators (two items per indicator) based on face value to represent a latent variable of physical violence. Results of this structural equation modeling approach suggested that, again, the variance and prevalence of physical violence was low in this sample, precluding the testing of actor and partner effects among mothers and children on the physical violence variables.

**Research objective 3: Examine treatment effects for conflict resolution tactics used by the various trauma groups identified in research objective 1.**

It was hypothesized that among mothers and children in the family-systems therapy condition, there would be significant increases in reasoning skills and significant decreases in verbal aggression between conflict resolution tactics at baseline and 12 months. In other words, there should be nonsignificant actor effects and significant partner effects in reasoning skills and verbal aggression at 12 months. Because the results of the second research objective indicated that the means for reasoning skills and verbal aggression were the same in all three trauma groups, differences in conflict resolution tactics across trauma groups were not examined when testing the hypothesis for the third research objective. Rather, this hypothesis was tested by dividing the sample into a treatment group and a control group. Specifically, a group comparison procedure was used to determine whether treatment had an effect on the actor paths and partner paths in reasoning skills and verbal aggression at 12 months. The group comparison procedure mirrored the procedure used in earlier analyses by first testing a baseline structural model in which all paths were free to vary across the groups, followed by testing a model in
which paths were set equivalent across the groups. The fit of the estimated model was compared to the baseline model with a chi-square difference test to determine loss of fit (a significant chi-square difference).

**Results for reasoning skills.** A baseline structural model where all parameters were freely estimated across the treatment group and control group was examined for reasoning skills used to resolve conflicts between mothers and children. Results of the baseline structural model indicated a good fit to the data: CFI = 1.00, TLI = 1.03, RMSEA = .00, $\chi^2(12) = 9.94, p > .05$. Next, a model where all paths were constrained to be equal across the treatment and control groups was examined. Results of this nested model indicated a relatively good fit to the data: CFI = 1.00, TLI = 1.04, RMSEA = .00, $\chi^2(16) = 11.2, p > .05$. A chi-square difference test was conducted between the baseline model and the nested model, which resulted in $\Delta \chi^2(4) = 1.26, p > .05$. The chi-square difference test was not significant and suggested that there were no differences in the magnitude of the paths of the model among the treatment group and control group for reasoning skills used to resolve conflicts between mothers and children.

Further model testing was conducted to compare the means for reasoning skills across the treatment group and the control group. Results of the baseline structural model indicated a good fit to the data: CFI = 1.00, TLI = 1.03, RMSEA = .00, $\chi^2(12) = 9.94, p > .05$. Results of the nested model indicated a relatively good fit to the data: CFI = 1.00, TLI = 1.05, RMSEA = .00, $\chi^2(20) = 13.57, p > .05$. A chi-square difference test was conducted between the baseline model and the nested model, which resulted in $\Delta \chi^2(8) = 3.63, p > .05$. Again, the chi-square difference test was not significant and there was no
loss of fit given that the means were equivalent, suggesting that the means for reasoning skills for mothers and for children were the same in the treatment group and the control group. In other words, reasoning skills used to resolve conflicts did not differ between the treatment group and the control group. This indicates that, at least for these associations, there was no treatment effect.

**Results for verbal aggression.** A baseline structural model where all parameters were freely estimated across the treatment group and the control group was examined for verbal aggression used to resolve conflicts between mothers and children. Results of the baseline structural model indicated a good fit to the data: CFI = .99, TLI = .97, RMSEA = .05, χ²(12) = 14.57, p > .05. Next, a model where all paths were constrained to be equal across the treatment group and the control group was examined. Results of this nested model indicated a relatively good fit to the data: CFI = .98, TLI = .96, RMSEA = .06, χ²(16) = 21.15, p > .05. A chi-square difference test was conducted between the baseline model and the nested model, which resulted in Δχ²(4) = 6.58, p > .05. The chi-square difference test was not significant and suggested that there were no differences in the magnitude of the paths of the model among the treatment group and the control group for verbal aggression used to resolve conflicts between mothers and children.

Further model testing was conducted to compare the means for verbal aggression at baseline and 12 months across the treatment group and the control group. Results of the baseline structural model indicated a good fit to the data: CFI = .99, TLI = .97, RMSEA = .05, χ²(12) = 14.57, p > .05. Results of the nested model indicated a relatively good fit to the data: CFI = .99, TLI = .99, RMSEA = .04, χ²(20) = 22.35, p > .05. A chi-
square difference test was conducted between the baseline model and the nested model, which resulted in $\Delta \chi^2(8) = 7.78, p > .05$. Again, the chi-square difference test was not significant and there was no loss of fit given that the means were set to be equivalent, which suggested that the means for verbal aggression for mothers and for children were the same across the treatment group and the control group. In other words, verbal aggression used to resolve conflicts did not differ between the treatment group and the control group. Again, this suggests that there was no treatment effect for these associations.
Chapter 4: Discussion

Despite the plethora of research linking trauma and substance use (Chase et al., 2003; Cohen et al., 2008; Kelley et al., 2010; Sacks et al., 2008), the examination of these concurrent experiences on conflict resolution styles for mothers and children remains unknown. The current study addressed this gap in the literature by examining three overarching objectives. The first objective explored how women with a substance use disorder were statistically and theoretically grouped based on their trauma experiences (childhood abuse, IPV, and street victimization) and the predictors of these trauma groups. The second objective examined the influence of trauma on the stability and reciprocity of reasoning, verbal aggression, and physical violence used to resolve conflicts between children and their mothers. The third objective investigated the effects of a family-systems intervention, EBFT, on conflict resolution tactics used by children and their mothers in the varying trauma groups.

First Research Objective: Identifying Groups of Women Based on Their Trauma Experiences and the Predictors of These Trauma Groups

Classifying women based on their trauma experiences. The first research objective was to determine if mothers with a substance use disorder could be further
divided into groups who had experienced varying forms of trauma. This objective was accomplished by conducting a Latent Profile Analysis to identify groups of maternal trauma experiences. Broadly, findings suggested that the best fitting model included 5 classes, but some of those classes were quite small so the classes were collapsed. Thus, the final model consisted of three classes.

Class 1 \((n = 96)\) consisted of mothers who experienced a substance use disorder, childhood abuse, and IPV. Class 1 had the highest sample size of all three classes, which suggested that in this particular sample, women engaged in substance use treatment most likely experienced trauma spanning their lifetime. That is, these women were victimized in childhood and subsequently revictimized in adulthood by an intimate partner. This finding is consistent with prior literature suggesting that childhood abuse is related to IPV victimization in adulthood (Manchikanti Gómez, 2011). In fact, Manchikanti Gómez (2011) found that childhood abuse is highly predictive of IPV victimization among women, and the cumulative trauma experiences of childhood abuse and IPV is especially prevalent among women with a substance use disorder (Schneider, Burnette, Ilgen, & Timko, 2009). Some theories suggest that childhood abuse is exceptionally detrimental to victims because the trauma fosters a negative view of their behaviors or abilities, such as feelings of loss of control and helplessness, among the victims, increasing their vulnerability to experiencing further detrimental experiences such as IPV (Peterson, Maier, & Seligman, 1993; Walker, 1977, 1978, 1983). Perhaps the experience of childhood abuse creates negative beliefs that predispose women to being revictimized by an intimate partner in adulthood, in addition to engaging in harmful behaviors such as
substance use. Therefore, some women with a substance use disorder may be challenged with overcoming their substance use and their history of past trauma (childhood abuse) or more recent trauma (IPV).

Class 2 ($n = 59$) consisted of mothers with a substance use disorder who experienced no trauma or few traumas in their lifetime. This finding suggests that not all women with a substance use disorder have experienced trauma, and while some women have experienced trauma, the trauma may not be cumulative. While trauma is pervasive among this high risk population (Cohen et al., 2008; Sacks et al., 2008; Schneider et al., 2009), the current study’s finding provides support that women with a substance use disorder range in their trauma experiences. However, having a history of few trauma experiences may still be linked to maladaptive outcomes among women given that any experience of trauma is often associated with negative effects (Bonomi et al., 2006; Springer et al., 2007; Temple et al., 2007). Moreover, outcomes may differ depending on the type of these few trauma experiences. Green and colleagues (2000) found that interpersonal trauma experiences were more distressing than noninterpersonal (life-threatening illness, accident, traumatic loss, and witnessing a death or assault) trauma experiences. Therefore, interpersonal trauma may be especially harmful even within the context of a low frequency of experiences. More research is needed to further examine the needs, outcomes, and characteristics of women with few trauma experiences.

Class 3 ($n = 28$) is distinguished from the other classes in that mothers in this class experienced the highest amount of trauma, including childhood abuse, street
victimization, and IPV. These mothers experienced multiple traumas throughout their lifespans. This finding is consistent with prior literature suggesting that women with a substance use disorder often report experiencing cumulative and multiple traumas (Cohen et al., 2008). Other studies have found that women with a history of multiple traumas are likely to experience elevated trauma symptom severity at a higher rate than women who experience no trauma or a single trauma (Green et al., 2000). Therefore, women with a substance use disorder and a history of multiple traumas may be particularly vulnerable to experiencing detrimental outcomes.

Interestingly, this study found that among the classes containing women who experienced trauma in childhood and adulthood (Classes 1 and 3), the main distinction between this class (Class 3) and Class 1 was the presence of street victimization. Many studies lack a clear differentiation between street victimization and IPV, resulting in a dearth of literature on the effects of street victimization as a single trauma event and within the context of multiple traumas. The few studies on street victimization by non-intimate partners have suggested that this trauma experience is associated with severe psychological distress, PTSD, HIV risk behaviors, and maladaptive social behavioral outcomes among some women (Gale & Coupe, 2005; Melander & Tyler, 2010; Temple et al., 2007). Although heavy alcohol use predicts sexual street victimization (Desai, Arias, Thompson, & Basile, 2002; Testa et al., 2007), street victimization within the context of multiple trauma experiences among women with a substance use disorder is highly understudied and in need of further exploration.
Factors contributing to class membership. Using multinomial logistic regression, demographic and individual-level factors predicted class membership. Age, minority vs. non-minority status, depressive symptoms, runaway episodes, and substance use were hypothesized to predict the classes given that these factors have been associated with trauma experiences (Cohen et al., 2008; Rayburn et al., 2005; Thrane et al., 2011; Ullman & Filipas, 2005). Class 3, mothers who experienced multiple traumas, served as the reference group. Broadly, the hypothesis was partially supported; depressive symptoms and runaway episodes significantly predicted class membership and age was marginally associated with class membership.

Results indicated that mothers in Class 2 were more likely to report a runaway episode before 18 years of age than mothers in Class 3, and mothers in Class 1 tended to be more likely to report a runaway episode than mothers in Class 3. That is, mothers with few trauma experiences or who experienced childhood abuse and IPV but no street victimization were more likely to have a history of running away from home before 18 years of age than mothers with multiple trauma experiences. Running away from home has been shown to predict trauma and to mediate the relationship between childhood abuse and later victimization such that childhood abuse predicts running away, and in turn, running away predicts victimization in adolescence (Min, Tajima, Herrenkohl, & Bu, 2009; Thrane et al., 2011). Thus, running away from home is linked to childhood abuse and trauma in adolescence, but more research is needed to understand runaway episodes as predictors of trauma experiences throughout women’s lifespans.
Similarly, mothers in Class 1 and in Class 2 had higher levels of depressive symptoms than mothers in Class 3. That is, mothers with few trauma experiences or who experienced childhood abuse and IPV but no street victimization had more severe depressive symptoms than mothers with multiple trauma experiences. Possibly, mothers in Class 3 perceived the severity of their depressive symptoms differently than mothers in Class 1 and mothers in Class 2. For instance, multiple and repeated traumas are linked to lower levels of emotional awareness and difficulty in accurately differentiating and identifying affective states (Cook et al., 2005; Kliethermes & Wamser, 2012). Multiple traumas that are prolonged may impair emotional expressiveness as well, resulting in dissociation, emotional numbing, avoidance of emotionally intense situations, or use of maladaptive coping strategies such as substance use (Cook et al., 2005; Kliethermes & Wamser, 2012). Mothers with a history of multiple traumas may not be as aware of the intensity of their emotional states, such as the severity of their depressive symptoms, and may experience emotional numbing which would likely result in a perception of less severe depressive symptoms. Alternatively, it is possible that mothers with multiple traumas may, in fact, experience less severe depressive symptoms than peers with fewer traumas. A deeper understanding of the severity and function of depressive symptoms among women who vary in trauma experiences is clearly warranted.

Mothers in Class 2 (few trauma experiences) tended to be older than mothers in Class 3 (multiple trauma experiences). That is, mothers in Class 2 experienced fewer traumas over a longer time span because they were older than mothers in Class 3. Mothers in Class 3 experienced more forms and a higher frequency of trauma within a
shorter time span because they were younger than mothers in Class 2. This finding suggests that mothers in Class 3 are an exceptionally high risk group that experienced repeated revictimization quicker and at younger ages than peers. Prior studies have found a similar relationship between age and trauma experiences. In their literature review, Hatch and Dohrenwend (2007) found that younger individuals (youth and young adults) were more likely to experience trauma events than older individuals, and young adults were more likely to experience sexual assaults, physical assaults, and acts of violence than older adults. Given that cumulative risk should increase over time, Hatch and Dohrenwend (2007) and Norris (1992) suggest that the surprising relationship between age and cumulative trauma may be due to imperfections in memory recall among older individuals. Increasing lengths of the recall period for trauma experiences may be more problematic among older individuals than younger individuals. Alternatively, older individuals may have more time to process, cope, or reframe their trauma experiences than younger individuals, which would influence the memory recall process as well.

Contrary to expectations, substance use did not significantly predict the three classes of trauma. It is likely that the variance in the frequency and severity of substance use in this sample was limited given the study inclusion criteria. That is, all women in the current study were seeking treatment for a substance use disorder. Substance use may have reached a ceiling effect due to the eligibility criteria for this study. Women who abuse substances tend to experience high rates of trauma in childhood and revictimization in adulthood, with estimates suggesting that up to 80% of women seeking substance use treatment have experienced a lifetime history of trauma (Hien, Cohen, & Campbell,
Although substance use disorders are strongly linked to trauma, less is known about the link between trauma and the variability in frequency and severity of substance use among women. Future studies should include samples with less severe alcohol and illicit drug use in order to elucidate the relationship between substance use and characterization of trauma groups.

Similarly, minority vs. non-minority status did not predict class membership and this finding mirrors the findings by Cloitre et al. (2013). Although other studies have found ethnic differences in the prevalence of trauma (Gerard & Buehler, 2004), the difference in findings from this sample and the findings in Gerard and Buehler (2004) may be due to the population under study. This study examined cumulative trauma among a sample of women with a substance use disorder, while Gerard and Buehler (2004) examined cumulative trauma among a sample of male and female adolescents with no history of a substance use disorder. Further research is needed on samples containing more diversity in minority status in order to examine whether varying types of minority status predict trauma classes among women who use substances.

Overall, findings on the three classes of trauma and predictors of these classes highlight the complexity and variability of trauma experiences among this sample of women. In particular, many women experienced trauma in childhood and in adulthood, with some women experiencing multiple traumas in adulthood. This finding highlights the elevated rate of revictimization and multiple forms of trauma in these women’s lives and the need for more research to use a cumulative approach to trauma. Prior studies that
examined the interrelationship between trauma and substance use disorders among women tend to focus on a single type of trauma experience rather than account for all traumas experienced over the women’s lifetimes. The focus on a single type of trauma experience may overestimate the effects of this trauma experience, neglect potential interactions between different types of trauma experiences, and may diminish the detrimental effect of cumulative and multiple trauma experiences (Saunders, 2003). Thus, future research that examines the challenges of women with a substance use disorder should identify trauma experiences over women’s lifetimes given the high likelihood that these women vary in the forms and frequencies of their experiences.

**Second Research Objective: Use APIMS to Determine Actor Effects and Partner Effects in Conflict Resolution Tactics Over Time**

Actor effects were hypothesized to be found for both mothers’ and children’s levels of reasoning, verbal aggression, and physical violence over time. Partner effects were also hypothesized to be found for these conflict resolution tactics between mothers and their children over time. Furthermore, the class with the most trauma experiences was hypothesized to have higher levels of reasoning, verbal aggression, and physical violence among mothers (i.e., actor effects) and children (i.e., partner effects) over time than classes with fewer trauma experiences. To test these hypotheses, a group comparison procedure was used. Broadly, findings suggested that reasoning skills and verbal aggression did not significantly differ between the three classes. However, using the full sample, stability (e.g., actor effects) was found in reasoning skills among children and in
verbal aggression among children and mothers. Partner effects were found such that children’s use of reasoning skills and verbal aggression tended to predict their mothers’ use of these conflict resolution tactics.

**H1: Actor effects in conflict resolution tactics over time.** The first hypothesis was partially supported in that actor effects were found for reasoning skills used by children to resolve conflicts. Children’s reasoning skills at 12 months were predicted by their past use of reasoning skills, which suggested stability in this conflict resolution tactic. In other words, those children who used reasoning skills to resolve conflicts with their mothers continued to use this healthy and non-aggressive tactic over time. Reasoning skills are one of several prominent tactics often used by children to resolve conflicts with their mothers and fathers (Anupama, 1997). Children who did not use reasoning skills may have used other tactics, such as aggressive behaviors, to resolve conflicts over time. Yet, longitudinal studies are limited on children’s use of reasoning skills in resolving conflicts with their mothers. Moreover, it is unclear whether children used reasoning skills in addition to other tactics to resolve conflicts. Further research is needed to better understand the differences between children who use reasoning skills over time and peers who do not use this conflict resolution tactic.

However, actor effects were not found for reasoning skills used by mothers to resolve conflicts. That is, stability was not found for reasoning skills among mothers at 12 months. This finding suggests that mothers’ use of reasoning skills is unpredictable based on their past behavior and that these skills changed over time. Prior studies have found
stability in mothers’ use of reasoning skills in resolving conflicts with their children (Sheehan & Watson, 2008). Perhaps methodological differences contributed to the incongruence in findings between the current study and the study by Sheehan and Watson (2008). Specifically, the sample in Sheehan and Watson (2008) did not consist of mothers with a substance use disorder, and follow-up assessments were conducted over a five-year time span. It is possible that mothers’ use of reasoning skills may become destabilized temporarily due to a stressor (e.g., substance use treatment) and show more stability over a longer period of time than observed in this study. Alternatively, reasoning skills may not be predictable among mothers engaging in risk behaviors such as substance use. More longitudinal studies are needed to investigate the types, frequencies, and severity of events that impact the stability in use of reasoning skills in order to better predict the context in which these skills are used to resolve conflicts.

As hypothesized, actor effects were also found for verbal aggression among children and their mothers. Verbal aggression was stable across time for children and their mothers, with their initial levels of verbal aggression decreasing at 12 months. In other words, mothers and children were consistently using verbal aggression to resolve conflicts, but the use of this tactic decreased over time. This finding is consistent with prior literature on stability in verbal aggression among at-risk families (Bartle-Haring et al., 2015). Perhaps in high risk families, especially those families experiencing a substance use disorder, verbal aggression is a tactic commonly used by mothers and children to resolve conflicts in the relationship. However, subtle decreases in the use of verbal aggression may be discernable at one year, perhaps suggesting the beginning
stages of change in conflict resolution patterns. More longitudinal studies are needed to investigate the underlying mechanisms that encourage or inhibit reductions in verbal aggression among high risk families to better understand patterns in the conflict resolution process.

Unexpectedly, the model that examined actor and partner effects for physical violence used to resolve conflicts could not be estimated. Consistent with prior research (Bartle-Haring et al., 2015), this study had a low prevalence and variability of physical violence among mothers and their children. Perhaps the low frequency of physical violence perpetrated between children and their mothers is related to the age and development of children. Prevalence of child-to-parent violence tends to increase with children’s age; older children are more likely to be physically violent with their parents than younger children (Cottrell & Monk, 2004). Because the average age of children in this study was 11.54 years, these effects may not be observable. In comparison, the average age of children who engaged in physical violence with their caregivers was 15.4 years in the study by Bartle-Haring and colleagues (2015), and other studies found that mothers were likely to experience physical violence from their children aged 13 to 18 years (Edenborough et al., 2008). It is possible that children in this sample use more physical violence as they become older in order to resolve conflicts.

**H2: Partner effects in conflict resolution tactics over time.** Partial support was found for the second hypothesis that partner effects would be found for both mothers’ and children’s levels of reasoning skills at 12 months. Children’s reasoning skills tended to
predict their mothers’ use of reasoning skills over time. That is, children who sought and obtained information to support their side of the argument tended to predict their mothers’ use of this tactic in resolving conflicts. One interpretation of this finding is that children have an active role in the conflict resolution process with their mothers, and children are likely to, in fact, influence their mothers’ use of reasoning skills in resolving conflicts. As noted earlier, few studies have examined children’s role in the conflict resolution process with their parents and the use of reasoning skills in resolving conflicts. Given that children may impact their mothers’ use of reasoning skills, more studies that examine reasoning skills as a conflict resolution tactic used by children and dyadic processes in the mother-child conflict resolution process are needed.

However, mothers’ reasoning skills were not predictive of their children’s reasoning skills over time. In other words, mothers who used reasoning skills did not have a significant impact on their children’s use of this conflict resolution tactic. As a result, this non-significant partner effect indicated that reasoning skills were not bidirectional in the conflict resolution process. Children did not reciprocate when their mothers obtained and presented information to support their side of the argument. Although prior studies have found a link between mothers’ use of reasoning skills and aggressive behaviors among children (Sheehan & Watson, 2008), this is the first study to examine reciprocity in reasoning skills as a conflict resolution tactic between mothers and children. Thus, further investigation is needed on factors that predict the use of reasoning skills among children, and a better understanding is needed on the unpredictability of reasoning skills between children and their mothers.
Furthermore, a trend towards significance was found for a partner effect in verbal aggression used to resolve conflicts between mothers and children at 12 months. Specifically, verbal aggression by children tended to lead to future use of verbal aggression by mothers. This finding is similar to findings of prior studies in that aggressive behaviors by children predict aggressive behaviors by their parents or caregivers (Bartle-Haring et al., 2015; Sheehan & Watson, 2008). Sheehan and Watson (2008) suggested that more aggressive children may influence their parents to use more aggressive disciplinary behaviors. However, Sheehan and Watson (2008) found that children’s aggression predicted physically aggressive discipline, but not verbally aggressive discipline, among parents.

Findings also indicated that verbal aggression from mothers did not lead to future use of verbal aggression by their children. In other words, reciprocity in verbal aggression was not found between mothers and their children. One possible interpretation of this finding is that children are choosing an alternative strategy to resolve conflicts when their mothers are verbally aggressive. For example, assertion and submission are other strategies frequently used by children to resolve conflicts with their parents (Anupama, 1997). Another possible interpretation is that verbal aggression might influence mothers and children differently in the conflict resolution process. Children are not escalating in verbal aggression when their mothers are verbally aggressive in resolving conflicts. Therefore, evidence of a cycle of verbal aggression, in which verbal aggression between mothers and children is bidirectional and increases in severity over time, is not present in this sample.
Control variables and reasoning skills. Findings suggested that child’s age, mother’s minority vs. non-minority status, and sex of the child were not significantly associated with reasoning skills used to resolve conflicts at baseline. The finding on child’s age mirrors the findings by Sheehan and Watson (2008), which did not suggest a significant relationship between child’s age and reasoning skills used to resolve conflicts with mothers. However, Sheehan and Watson (2008) found significant differences in mother’s minority vs. non-minority status and reasoning skills such that non-minority mothers had more stability in reasoning skills used to resolve conflicts with their children than minority mothers. Differences in the population under study may have accounted for the incongruence in findings; Sheehan and Watson (2008) had a more ethnically diverse sample, but mothers in their sample did not have a substance use disorder. Thus, it is possible that differences in diversity and severity of substance use may have differentiated the samples enough to account for the incongruence in findings on minority vs. non-minority status. Moreover, contrary to existing literature (Josephson & Proulx, 2008), the sex of the child was not associated with reasoning skills used to resolve conflicts in the current study. Josephson and Proulx (2008) found that assertive reasoning skills were especially effective in resolving conflicts among males. However, their study examined the conflict resolution process within the context of a romantic relationship, rather than in a mother-child dyad. Given the dearth of studies on reasoning skills used by children, more research is needed to elucidate factors that influence the use of reasoning skills in the mother-child relationship.
Control variables and verbal aggression. In contrast to the findings on reasoning skills, findings on verbal aggression suggested that child’s age and mother’s minority vs. non-minority status were significantly associated with this conflict resolution tactic at baseline. A trend towards significance was found for the sex of the child and verbal aggression at baseline as well. Specifically, mothers who identified as a minority were likely to have children who used lower levels of verbal aggression to resolve conflicts. Older children had mothers who used higher levels of verbal aggression to resolve conflicts, and male children tended to use lower levels of verbal aggression when resolving conflicts at baseline.

These findings are consistent with prior studies on aggressive behaviors in parent-child relationships. For example, older children engage in higher levels of aggressive behaviors against their parents than younger children, possibly due to increases in size and strength associated with pubertal development (Cottrell & Monk, 2004). Bartle-Haring and colleagues (2015) found ethnic and gender differences in verbal aggression between youth and their caregivers. White youth were found to use more verbal aggression to resolve conflicts with their caregivers than Black youth, and female youth were found to perpetuate more verbal aggression when resolving conflicts with their caregivers than male youth (Bartle-Haring et al., 2015). Cottrell and Monk (2004) suggested that male and female children may differ in aggressive behaviors towards mothers due to differences in gender-based socialization processes. That is, female children may engage in aggressive behaviors towards their mothers in order to counteract stereotypes of vulnerability and powerlessness associated with the female gender role.
(Cottrell & Monk, 2004). Alternatively, male children might perpetuate less verbal aggression and more physical aggression in resolving conflicts with mothers given that being a male is a risk factor for physical violence in some studies (Herrenkohl et al., 2007). Thus, future studies should investigate how demographic factors such as the sex of the child, minority vs. non-minority status, and age influence the type of tactics and the context in which these tactics are used in resolving conflicts between high risk mothers and children.

**H3: Class with the most trauma would also have higher levels of conflict resolution tactics over time.** The third hypothesis was that the class with the most trauma experiences would have higher levels of reasoning skills and verbal aggression among mothers (i.e., actor effects) and children (i.e., partner effects) over time than classes with fewer trauma experiences. Findings did not support the third hypothesis; actor effects and partner effects in conflict resolution tactics did not significantly differ between Class 3 and Classes 1 and 2. Thus, variability in the forms and frequencies of maternal trauma experiences did not impact mothers’ or children’s use of conflict resolution tactics over time. This particular sample of women had a very high prevalence rate of trauma, with 71% of women reported experiencing IPV, 59% of women reported experiencing childhood abuse, 30% of women reported experiencing street victimization, and 80% of women reported experiencing trauma in childhood in addition to adulthood. In contrast, 15% of women reported no history of trauma. Given the high prevalence of trauma in the current sample, differences between classes may be between those that experience no trauma and those that experience any trauma. For instance, experiencing
any form or frequency of trauma may influence the use of conflict resolution tactics among mothers and children. Future studies should compare conflict resolution tactics using a large sample of mothers with high rates of trauma experiences and a large sample of mothers with no history of trauma in order to determine whether having a trauma experience impacts the use of reasoning and verbal aggression in resolving conflicts with children.

**Third Research Objective: Treatment Effects for Conflict Resolution Tactics**

The third research objective was to examine treatment effects for conflict resolution tactics used by children and mothers. Mothers and children in the family-systems therapy condition were hypothesized to have nonsignificant actor effects and significant partner effects in conflict resolution tactics at 12 months. Given that actor and partner effects in reasoning skills and verbal aggression did not significantly differ across the three classes (Research Objective 2), the sample was divided into a treatment (EBFT) group and an attention control (WHE) group. Specifically, a group comparison procedure was used to determine whether treatment had an effect on the actor paths and partner paths in reasoning skills and verbal aggression at 12 months. Findings indicated that reasoning skills and verbal aggression used to resolve conflicts did not significantly differ among mothers and children in EBFT and mothers in WHE (evidence of no treatment effects). However, some improvements in conflict resolution tactics were found among mothers and children in EBFT and WHE (i.e., using the full sample) in the second research objective.
That is, treatment differences in conflict resolution tactics were not found between WHE and EBFT, but verbal aggression improved among mothers and children regardless of treatment condition. This finding is similar to the findings of other studies that compared WHE to a trauma-informed intervention for women with a substance use disorder and a history of trauma (Hien et al., 2009). That is, large and clinically significant improvements were found in trauma-related symptoms among women, but differences in these symptoms between the treatment conditions were not found (Hien et al., 2009). Hien et al. (2009) suggested that WHE might be more powerful than a nonspecific control, instead serving as an active comparison condition. Topics such as understanding a woman’s body and sexual behavior presented in WHE may also be relevant to self-care and understanding the effects of trauma on the body among women (Hien et al., 2009). In other words, topics in WHE may relate to topics on trauma recovery among women.

In addition, both EBFT and WHE are manual-driven treatments that might share overlapping elements. Nonspecific elements such as attention from therapists, therapist alliance, or being in a supportive environment are shared factors that may contribute to the lack of differences between WHE and other interventions (Hien et al., 2009). Indeed, some studies have suggested that nonspecific elements, especially therapeutic alliance and factors related to the therapist, are key to positive outcomes among individuals with a history of trauma (Blow, Sprenkle, & Davis, 2007; Ormhaug, Jensen, Wentzel-Larsen, & Shirk, 2014). Perhaps identifying the nonspecific and active elements that improve
outcomes in WHE and EBFT may provide illumination on how to strengthen the efficacy of these treatments for women with a substance use disorder and a history of trauma.

**Implications**

Findings from this study offer some important implications for clinicians and substance abuse treatment programs targeting mothers with a history of trauma and their children. For instance, treatment programs should address trauma and substance use concurrently given that many mothers in substance use treatment have a history of trauma. Perhaps including components that address past trauma experiences, current trauma symptoms, and prevention interventions for trauma may be advantageous to women. Indeed, the high rates of trauma among this population suggest that some mothers in treatment may benefit from services and resources that directly address their trauma history. Providers should be knowledgeable that mothers entering and engaging in treatment vary in the forms and frequencies of trauma they have experienced. For example, street victimization seems to be a differentiating trauma experience among mothers, and as such, providers should identify and approach street victimization as a trauma experience distinct from childhood abuse and IPV. By having a deeper understanding of varying trauma experiences and cumulative trauma, providers might be able to better predict how these experiences interact with substance use and influence the treatment process.

Given that children’s and mothers’ use of verbal aggression is predictable based on their past behavior, destabilization of this conflict resolution tactic is clearly needed.
Therefore, providers may want to identify the factors that destabilize the use of verbal aggression in resolving conflicts. For example, contact with treatment providers or completion of an assessment battery may have destabilized mothers’ and children’s use of verbal aggression. Alternatively, identifying the factors that promote stability in verbal aggression may be an area of focus. For instance, the ineffective use of other conflict resolution tactics and attitudes about interpersonal violence are linked to the use of verbal aggression in resolving conflicts (Josephson & Proulx, 2008). Learning alternative conflict resolution strategies that are non-aggressive and healthy might interrupt mothers’ and children’s stability in the use of verbal aggression.

Children’s use of reasoning skills and verbal aggression tended to predict their mothers’ use of these conflict resolution tactics over time; therefore, it might be advantageous to include children in their mothers’ treatment plan. Targeting children’s conflict resolution strategies might be one approach to promoting change in mothers’ conflict resolution strategies. For example, providers might aim to develop and enhance positive conflict resolution tactics, such as reasoning skills, and decrease harmful conflict resolution tactics, such as verbal aggression, among children. Another approach is targeting the mother-child relationship. Warm parent-child relationships with low levels of conflict are associated with more effective conflict resolution (Tucker, Mchale, & Crouter, 2003). Having a warm emotional bond characterized by low levels of anger, resentment, and other negative emotions may be beneficial to the conflict resolution process between mothers and children (Tucker et al., 2003). Perhaps by including
children in the treatment plan and improving the mother-child relationship, conflict resolution strategies might be utilized more effectively as well.

**Strengths**

The current study contains significant methodological strengths and addresses several gaps in the literature on a high risk, underserved population. In particular, this study utilized advanced statistical methods, including LPA and APIMs, to provide a clearer and more accurate analysis of data than less advanced statistical methods more commonly used in the literature (i.e., ordinary least squares regression). The analysis of dyadic data over time is a unique strength of this study given that many studies often utilize cross-sectional data and examine a unidirectional perspective in mother-child relationships. In addition, this is the first study to date that grouped women with a substance use disorder who varied in the types and frequencies of trauma experiences.

Other gaps in the literature on mother-child interactions were addressed by the current study as well. For example, this study examined how maternal trauma influenced the strategies used between mothers and children to resolve conflicts. Few studies on mother-child interactions account for the synergistic effect of substance use and trauma. Moreover, this study investigated reciprocity between children and mothers with a substance use disorder, which is vastly understudied among this subpopulation. Lastly, the current study tested the effects of a manualized intervention developed for children and their mothers who used substances, which contributed to the dearth of literature on
systemic interventions implemented and tested for families experiencing a substance use disorder.

Limitations

Although the current study contains noteworthy strengths, some limitations must be acknowledged. One limitation is the small sample size of the group of women with the highest proportion of trauma. A small sample size likely reduced the statistical power to detect differences between the trauma groups on conflict resolution tactics. Also, generalizability of the findings was limited given that all women in this sample were seeking treatment for a substance use disorder. Findings may differ among women who are not dependent on substances or among women who are not seeking treatment for their substance use. This study did not include a no treatment control, and a control group would clarify whether EBFT had any effect on reasoning skills or verbal aggression used to resolve conflicts when compared to no treatment.

Social desirability may have biased mothers’ reports of their own aggressive behaviors and those of their children. Mothers might have underreported their verbal aggression and physical violence used to resolve conflicts with their children for fear that reporting these behaviors would result in the removal of their children from the home. Indeed, physical abuse is a common reason for removing children from their homes (See Vig, Chinitz, & Shulman, 2005). Alternatively, some mothers may underreport their children’s aggressive behaviors for fear of being blamed for their children’s
aggressiveness or for fear that others may minimize the seriousness of their children’s behaviors (Edenborough et al., 2008).

Although the Conflict Tactics Scale (CTS; Straus, 1979, 1990) is a widely used measure with good-to-excellent psychometrics (Amato, 1991; Straus & Hamby, 1997), this instrument tends to be more commonly utilized with older adolescents and adults than with children. Perhaps a more sensitive measure that takes into account younger children’s cognitive, emotional, and physical development might have captured different types of conflict resolution strategies utilized by these children. For instance, assertive strategies (i.e., physically or verbally stating one’s wants) and passive strategies (relinquishing one’s position) have been examined as types of conflict resolution strategies utilized by children (Rinaldi & Heath, 2006).

Another limitation is that the severity and duration of each type of trauma was not assessed in this study. For example, a mother who experienced one form of trauma (e.g., sexual childhood abuse) would have been grouped as being in the low trauma group even if she experienced that form of trauma daily for years. Some research suggests that the severity of childhood trauma events is predictive of trauma symptoms in adulthood, highlighting the longitudinal relationship between trauma severity and mental health problems (Clemmons, Walsh, DiLillo, & Messman-Moore, 2007).

Finally, women’s recollection of trauma events may have been distorted due to the passage of time or as a consequence of using substances. Heavy alcohol and illicit drug use are associated with cognitive impairment including memory deficits (Hanson,
Medina, Padula, Tapert, & Brown, 2011; Lundqvist, 2005). Corroborating retrospective reports of trauma events with official reports (police reports, CPS reports, etc.) may provide a clearer understanding of the role of substances in potentially influencing memory recall of trauma experiences.

**Future Directions**

Overall, more studies are needed to extend and replicate the findings in order to better understand the conflict resolution process in high risk, vulnerable families. Future studies should assess the severity and duration of trauma events in order to obtain a more comprehensive understanding of the link between cumulative trauma and psychological functioning over time. Studies are needed to examine the relationship between conflict resolution tactics and other forms of trauma. For example, some studies have indicated higher rates of emotional childhood abuse than physical and sexual childhood abuse, and emotional childhood abuse is a predictor of IPV (Tietjen et al., 2010; Wekerle et al., 2009). In other words, emotional abuse may be a common form of childhood trauma and is linked to later aggression and victimization. Thus, future studies should examine whether emotional childhood abuse predisposes women to engage in more aggressive conflict resolution tactics over time, which in turn, may indicate an area in need of intervention efforts in order to influence how these women resolve conflicts.

Moreover, research is needed to investigate street victimization as a trauma event independent of other forms of interpersonal traumas and within a cumulative risk context. For instance, more research is needed to better understand the contextual factors that
differentiate street victimization and IPV. It is possible that the emotional relationship differs between a victim and either a perpetrator on the street or a perpetrator as an intimate partner. Some literature suggests that the experience of a trauma event is impacted by the emotional relationship between victim and perpetrator, with higher levels of betrayal associated with a trauma experience relating to adverse mental and physical health outcomes (Edwards et al., 2012; Freyd, 2012; Freyd, DePrince, & Gleaves, 2007; Gobin & Freyd, 2009; Mackelprang et al., 2014). Understanding the emotional relationship between women and their perpetrators and the emotional context underlying the trauma experience may be critical for intervention efforts seeking to ameliorate detrimental outcomes.

Conclusion

Intervening in maladaptive conflict resolution strategies is imperative for high risk families experiencing multiple stressors such as substance use and trauma. Yet, few interventions utilize a systemic and family-systems approach despite the knowledge that mother-child interactions tend to be reciprocal in nature. To address this gap in the literature, the current study investigated the 1) classification of varying trauma experiences (childhood abuse, IPV, and street victimization) among women with a substance use disorder and the predictors of this classification (Research Objective 1), 2) actor and partner effects in reasoning skills, verbal aggression, and physical violence used to resolve conflicts among women and their children (Research Objective 2), and 3)
effects of a family-systems intervention on conflict resolution strategies used by these high risk families (Research Objective 3).

The three classes of trauma identified suggested that women do, in fact, vary in their trauma experiences, and these women may benefit from receiving services that address their trauma experiences in conjunction with their substance use disorders. Some stability was found in reasoning skills and verbal aggression used to resolve conflicts, suggesting that these conflict resolution tactics are relatively predictable among mothers and children. Moreover, children’s use of reasoning skills and verbal aggression tended to predict their mothers’ use of these conflict resolution tactics, possibly suggesting that children should be included in their mothers’ treatment plan. Finally, treatment differences were not found between EBFT and WHE, but improvements were found in verbal aggression regardless of treatment condition. That is, both EBFT and WHE may serve as effective interventions for some conflict resolution tactics among mothers and children.

Overall, findings from the current study highlight the diversity in trauma experiences among women with a substance use disorder and the stability in reasoning skills and verbal aggression used to resolve conflicts among mothers and children. However, more research is needed to understand the context and use of physical violence in resolving conflicts and to compare family-systems interventions and a nonspecific comparison control on conflict resolution tactics. With a better understanding of the conflict resolution process, providers may be more successful in delivering crucial
services and in teaching non-aggressive and healthier strategies to high risk, vulnerable families experiencing trauma and a substance use disorder.
Appendix A: Measures
DEMographers:

1. Gender: M / F

2. Relationship with adolescent: Mother: _____ Father: _____ Other (state relationship) ______

3. Age: ______

4. Height: ______

5. Weight: ______

6. Ethnic Group:
   (1) American Indian or Alaskan Native
   (2) Asian, Asian-American, or Pacific Islander
   (3) Black or African-American
   (4) Hispanic, Cuban
   (5) Hispanic, Mexican
   (6) Hispanic, New Mexican (or Spanish-American)
   (7) Hispanic, Puerto-Rican
   (8) Hispanic, Other Latin American
   (9) White, not of Hispanic origin
   (10) Other: Please specify: _____________________________

7. In the last year, what was your primary living arrangement? (Check one):
   (1) Alone in own house or apartment
   (2) With spouse or children in own house or apartment
   (3) In a house or apartment with a friend or friends
   (4) With parent(s) or guardian(s) in their house or apartment
   (5) Homeless or living in temporary shelter
   (6) With other relatives (specify) _____________________________

8. For the most part, how many persons, including yourself were living in your home when you were growing up? _____ Persons

9. Have you ever been:
   a. Placed in a foster home? Yes / No
   b. Placed in a group home? Yes / No
   c. A ward of the state? Yes / No
   d. Kept in juvenile detention? Yes / No
   e. Kept in jail overnight? Yes / No
   f. Been in prison Yes / No

10. When you were under the age of 18 did you ever run away from home? Yes / No
If yes, how many times? __________

11. Have you ever been homeless above the age of 18? Yes / No If yes, how many times? __________ Longest period of homelessness __________

12. What is your religious preference? Please check only one: Catholic Protestant Christian Jewish
Muslim Buddhist Hindu
Other: __________

13. Up to age 18, how many years were you raised by:

# Years
1. __________ Both of your birth parents
2. __________ Birth mother only
3. __________ Birth mother plus partner (not birth father)
4. __________ Birth father only
5. __________ Birth father plus partner (not birth mother)
6. __________ Other relatives (grandparents, aunt or uncle, etc.)
7. __________ Adoptive parents
8. __________ Foster parents
9. __________ Institutions (group home, hospital, detention, shelter)
10. __________ Other (Specify)

14. How many children do you have?

____ Biological sons _____ Adoptive sons
_____ Foster sons _____ Biological daughters
_____ Adoptive daughters _____ Foster daughters

15. How many times have you been married? ______ time(s).

16. **Current** Relationship Status (Check one for each): Primary Caretaker (You)

   Single:
   ___Never been married and not in a relationship
   ___Divorced
   ___Widowed

   Legally married:
   ___Married, still together (for how many years? __)
   ___Separated but still married and not in a romantic relationship

   In a romantic relationship:
   ___Cohabiting (for how long?________)
   ___Not cohabiting (for how long?________)

   Adolescent’s Birth Parents
   Single:
   ___Never been married and not in a relationship
   ___Divorced
   ___Widowed

   Legally married:
   ___Married, still together (for how many years? __)
   ___Separated but still married and not in a romantic relationship

   In a romantic relationship:
   ___Cohabiting (for how long?________)
   ___Not cohabiting (for how long?________)
16a. If currently in a relationship, what is the gender of your partner?  ___Male  ___Female  ___N/A

17. Employment Status (Check one for primary caretaker and one for Other Adult Family Member):

<table>
<thead>
<tr>
<th>Primary Caretaker (you)</th>
<th>Other Adult Family Member in the house</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Work 40+ hours a week</td>
<td>____________  ____________</td>
</tr>
<tr>
<td>(2) Work fewer than 40 hours a week</td>
<td>____________  ____________</td>
</tr>
<tr>
<td>(3) Homemaker</td>
<td>____________  ____________</td>
</tr>
<tr>
<td>(4) Retired</td>
<td>____________  ____________</td>
</tr>
<tr>
<td>(5) Unemployed</td>
<td>____________  ____________</td>
</tr>
<tr>
<td>(6) Student</td>
<td>____________  ____________</td>
</tr>
<tr>
<td>(7) Other</td>
<td>____________  ____________</td>
</tr>
</tbody>
</table>

What is your primary occupation (whether or not you are currently employed)? That is, what is your major occupational skill?

<table>
<thead>
<tr>
<th>Primary Caretaker</th>
<th>Other Adult Family Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________________</td>
<td>__________________________</td>
</tr>
</tbody>
</table>

18. What is your total annual family income?  

<table>
<thead>
<tr>
<th>Total annual income $________</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5,000</td>
</tr>
<tr>
<td>45,001- 60,000</td>
</tr>
</tbody>
</table>

18a. In the last 12 months, have you received any money from:

<table>
<thead>
<tr>
<th>$_______ Child support</th>
<th>$_______ Alimony</th>
<th>$_______ Social Security Benefits</th>
</tr>
</thead>
</table>

19. What is each of your highest level of education?

<table>
<thead>
<tr>
<th>Primary Caretaker</th>
<th>Other Adult Family Member</th>
<th>__N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>01) First grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02) Second grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>03) Third grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>04) Fourth grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>05) Fifth grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>06) Sixth grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>07) Seventh grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>08) Eighth grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>09) Ninth grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10) Tenth grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11) Eleventh grade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12) High school graduate (not GED)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13) One year full-time post-secondary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14) Two years full-time post-secondary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15) Three years full-time post-secondary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16) Four years full-time post secondary: college graduate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17) One year full-time post-graduate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18) Two year full-time post-graduate</td>
</tr>
</tbody>
</table>

For GED recipients, check the number of years of formal education actually completed (do not check 12)
<table>
<thead>
<tr>
<th>19</th>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three years full-time post-graduate</td>
<td>Four years full-time post-graduate</td>
<td>Five years full-time post-graduate</td>
<td>Six years full-time post-graduate</td>
<td>Seven years full-time post-graduate</td>
<td>Eight years full-time post-graduate</td>
<td>Nine years full-time post-graduate</td>
<td>Ten years or more full-time post-graduate</td>
</tr>
</tbody>
</table>

20. What is the highest degree that family members have?

<table>
<thead>
<tr>
<th>Primary Caretaker</th>
<th>Other Adult Family Member</th>
<th><strong>N/A</strong></th>
<th>0) No degree</th>
<th>1) Graduate Equivalent Degree (GED)</th>
<th>2) High School Diploma</th>
<th>3) Trade School Certificate</th>
<th>4) Associate Degree</th>
<th>5) Bachelors Degree</th>
<th>6) Masters Degree</th>
<th>7) Doctoral Degree</th>
</tr>
</thead>
</table>

**RELATIONSHIP QUALITY**

Please answer the following general questions about your relationship:

21. How often do you discuss or have you considered divorce, separation, or terminating your relationship?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally</td>
<td>More often than not</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
</tbody>
</table>

22. In general, how often do you think that things between you and your partner are going well?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally</td>
<td>More often than not</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
</tbody>
</table>

Do you confide in your mate?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally</td>
<td>More often than not</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
</tbody>
</table>

24. Please circle the number which best describes the degree of happiness, all things considered, of your relationship.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely unhappy</td>
<td>Fairly unhappy</td>
<td>A little unhappy</td>
<td>Happy</td>
<td>Very happy</td>
<td>Extremely happy</td>
<td>Perfect</td>
</tr>
</tbody>
</table>

**LEGAL:**

25. Have you ever been ARRESTED? Yes / No How many times?
List incidents (from most recent); include charges, date, status (conviction, probation), and whether alcohol or other drugs were involved (if more than four, list on a separate piece of paper):

<table>
<thead>
<tr>
<th>Charge involved?</th>
<th>Date</th>
<th>Current Status</th>
<th>Alcohol or Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td></td>
<td></td>
<td>Yes / No</td>
</tr>
<tr>
<td>B.</td>
<td></td>
<td></td>
<td>Yes / No</td>
</tr>
<tr>
<td>C.</td>
<td></td>
<td></td>
<td>Yes / No</td>
</tr>
<tr>
<td>D.</td>
<td></td>
<td></td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

26. Do you have a Parole Officer/Case Worker/Case manager? Yes / No Which? ______________

28. In the last 12 months, how many times have you:
   a. Stolen (or tried to steal) a motor vehicle, such as a car or motorcycle? _____Times
   b. Stolen something worth more than $50? _____Times
   c. Stolen something worth less than $5? _____Times
   d. Sold illegal drugs (e.g. marijuana, cocaine, etc.)? _____Times
   e. Used force to get money or things from others? _____Times
   f. Broken into a car or building? _____Times
   g. Attacked someone with the idea of hurting or killing him/her? _____Times
   h. Been paid for having sexual relations with someone? _____Times

MENTAL HEALTH TREATMENT:

29. Have you ever been hospitalized, INPATIENT, for SUBSTANCE abuse treatment? Yes / No
   Describe: How many times? ____________
   Where, when, duration of stay:

30. Have you ever been hospitalized, INPATIENT, for EMOTIONAL difficulties? Yes / No
   Describe: How many times? ____________
   Where, when, duration of stay:

31. Have you ever received OUTPATIENT treatment for ALCOHOL/DRUG issues? Yes / No
Describe where, when, duration of treatment:

32. Have you ever received OUTPATIENT treatment for other EMOTIONAL problems?
   Yes / No
   Describe where, when, duration of treatment:

**PHYSICAL HEALTH TREATMENT:**

33. In the past 12 months, have you visited the emergency room?
   Yes / No
   ________ Times

34. In the past 12 months, have you spent any days in the hospital?
   Yes / No
   ________ Days

35. In the past 12 months, have you used any type of urgent care (e.g., emergency treatment outside of a regular hospital setting)?
   Yes / No
   ________ Times

36. In the past 12 months, have you visited a primary care physician (e.g., your regular doctor)?
   Yes / No
   ________ Times

**ASSESSMENT OF DANGER:**

37. Have you ever tried to harm yourself, commit SUICIDE, or placed yourself in dangerous or life-threatening situations?
   Yes / No
   If yes, how many times? ________
   A) Please describe when, what happened, reasons:

   Were you hospitalized (or taken to the hospital)? Yes / No

   B) Have you had thoughts of harming yourself recently (in the last few weeks)? Yes / No
   Do you have a plan? Y / N Describe:

   Do you have access to what you need to do that? Y / N Describe:

   What are your reasons for wanting to die?

   What stops you from killing yourself?
38. **HOMICIDAL IDEATION:** Is there anyone you seriously want to harm?  
Yes / No  
Do you have a plan? Y / N  
Describe:  
Do you have access to what you need to do that?  
Y / N  
Describe:  
Who is this person?  
Do you know how to find this person? Y / N  
Describe (address/phone):  
What stops you from harming this person?  

39. Has anyone ever touched you SEXUALLY in a way that made you feel uncomfortable OR that hurt you OR that was against your will?  
Yes / No  

40. Has anyone ever hurt you PHYSICALLY (enough to leave marks or bruises or burns)?  
Yes / No  
Describe the circumstances (when/dates, what, who, duration of abuse):  

**VICTIMIZATION EXPERIENCES:**  
41. Now I’d like to ask about any crimes that may have been committed against you. In the last 12 months, have you been:  
   a. Assaulted or physically attacked?  
      Yes / No  
   b. Robbed, that is, was something taken from you by someone who threatened you with violence if you didn’t give it to them?  
      Yes / No  
   c. Burglarized, that is, has someone broken into your room or apartment and taken some of your property?  
      Yes / No  
   d. Have you been raped?  
      Yes / No  
   e. Have you been sexually assaulted, other than rape?  
      Yes / No  
   f. Have you been the victim of another crime?  
      Yes / No  
Specify: ________________________________  

42. Has an intimate partner:  
   a. Ever forced you to participate in a sex act (oral, vaginal or anal penetration) against your will?  
      Yes/No  
      1. Ever with your current partner?  
         Yes/No  
      2. Ever with your current partner within the past 12 months?  
         Yes/No  
   b. Ever threatened, coerced or physically forced you into any sexual contact that did not include penetration or intercourse?  
      Yes/No  
      1. Ever with your current partner?  
         Yes/No  
      2. If yes, within the past 12 months?  
         Yes/No  
   c. Ever hit, slapped, shoved, choked, kicked, shaken or otherwise physically hurt you?  
      Yes/No  
      1. Ever with your current partner?  
         Yes/No  
      2. If yes, within the past 12 months?  
         Yes/No  
   d. Ever been frightened for your safety or that of your family or friends because of anger or threats of an intimate partner?  
      Yes/No  
      1. Ever with your current partner?  
         Yes/No  
      2. If yes, within the past 12 months?  
         Yes/No  
   e. Ever put you down, or called you names repeatedly, or controlled your behavior?  
      Yes/No
1. Ever with your current partner? Yes/No
2. If yes, within the past 12 months? Yes/No

43. In order to keep yourself from being harmed in any way, do you:
   a. Carry a weapon? Yes / No
      Specify: _______________
   b. Stay away from certain places? Yes / No
   c. Stay away from people? Yes / No
   d. Sleep during the day and stay awake at night? Yes / No
   e. Make sure you’re always with someone you can trust? Yes / No
   f. Do you do anything else to keep from being harmed? Yes / No
      Specify:_________________

FAMILY HISTORY QUESTIONNAIRE

Sometimes people have problems because of their drinking or drug use. These might be health problems, trouble with the law, difficulties with work or school, or family, money, or personal problems. Have any of these people in your family have had problems like that because of their drinking or use of other drugs? (Please circle one number.)

<table>
<thead>
<tr>
<th>How about . . .</th>
<th>NO</th>
<th>YES</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. Your birth father?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>45. Your birth mother?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>(If raised by other than birth father:)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46. The father who raised you?</td>
<td>N/A</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>(If raised by other than birth mother:)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. The mother who raised you?</td>
<td>N/A</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>48. Your birth father’s father?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>(Grandfather on father’s side)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49. Your birth father’s mother?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>(Grandmother on father’s side)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50. Your birth mother’s father?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>(Grandfather on mother’s side)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51. Your birth mother’s mother?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>(Grandmother on mother’s side)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. Your current romantic partner?</td>
<td>N/A</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
How many of these people have had problems because of their drinking or use of other drugs?
Write 0 if there are known to be none
Circle ? if the status of existing relatives is unknown
Circle NA only if there are no relatives in this category

<table>
<thead>
<tr>
<th>Question</th>
<th>Number</th>
<th>Unknown</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>53. How many of your BROTHERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>54. How many of your HALF BROTHERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>55. How many of your SISTERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>56. How many of your HALF SISTERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Only if there is a biological son over 10)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>57. How many of your (biological) SONS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Only if there is an adopted son over age 10)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>58. How many of your ADOPTED SONS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Only if there is a biological daughter over age 10)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>59. How many of your (biological) DAUGHTERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Only if there is an adopted daughter over age 10)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>60. How many of your ADOPTED DAUGHTERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>How many of your (birth) FATHER'S BROTHERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>61. (Uncles on father’s side)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
</tbody>
</table>

102
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer Type</th>
<th>Value</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>62. How many of your (birth) FATHER’S SISTERS? (Aunts on father’s side)</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>63. How many of your (birth) MOTHER’S BROTHERS? (Uncles on mother’s side)</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>64. How many of your (birth) MOTHER’S SISTERS? (Aunts on mother’s side)</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
</tbody>
</table>
Adolescent Demographic Interview (OSU-Maryhaven)

Pretreatment

DEMOGRAPHICS:

1. Gender: M / F

2a. Date of Birth: ____________  2b. Age: ______________

3. Height: ______

4. Weight:______

5. Ethnic Group (Check one for subject, subject's birth mother, and subject's birth father):

<table>
<thead>
<tr>
<th>Adolescent</th>
<th>Adolescent’s Birth Mother</th>
<th>Adolescent’s Birth Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>______(1)</td>
<td>______(1)</td>
<td>______(1)</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(2)</td>
<td>______(2)</td>
<td>______(2)</td>
</tr>
<tr>
<td>Asian, Asian American, or Pacific Islander</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(3)</td>
<td>______(3)</td>
<td>______(3)</td>
</tr>
<tr>
<td>Black or African-American</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(4)</td>
<td>______(4)</td>
<td>______(4)</td>
</tr>
<tr>
<td>Hispanic, Cuban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(5)</td>
<td>______(5)</td>
<td>______(5)</td>
</tr>
<tr>
<td>Hispanic, Mexican</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(6)</td>
<td>______(6)</td>
<td>______(6)</td>
</tr>
<tr>
<td>Hispanic, New Mexican (or Spanish-American)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(7)</td>
<td>______(7)</td>
<td>______(7)</td>
</tr>
<tr>
<td>Hispanic, Puerto-Rican</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(8)</td>
<td>______(8)</td>
<td>______(8)</td>
</tr>
<tr>
<td>Hispanic, Other Latin American</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(9)</td>
<td>______(9)</td>
<td>______(9)</td>
</tr>
<tr>
<td>White, not of Hispanic origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>______(0)</td>
<td>______(0)</td>
<td>______(0)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If other ethnic group please specify:

Adolescent: ______________________________
Mother:      ______________________________
Father:       ______________________________

6. Last Grade Completed:__________________

Current GPA: ________  Special Ed: LD, BD______________

Currently enrolled? Yes / No  School: ______________________

7. In the last year, what was your primary living arrangement? (Check one):

___ (1) Alone in own house or apartment
___ (2) With spouse, domestic partner, or children in own house or apartment
___ (3) In a house or apartment with a friend or friends
___ (4) With parent(s) or guardian(s) in their house or apartment
___ (5) Homeless or living in temporary shelter
___ (6) With other relatives (specify) ________________________________
___ (7) With foster parents
___ (8) In jail
___ (9) Other (specify)

8. How many persons, including yourself were living in your home when you were growing up?

_____ Persons
9. Have you ever been:
   a. Placed in a foster home? Yes / No
   b. Placed in a group home? Yes / No
   c. Kept in juvenile detention? Yes / No
   d. Kept in jail overnight? Yes / No
   e. A ward of the state? Yes / No

10. For how many years were you raised by:
    # Years
    1. ____________ Both of your birth parents
    2. ____________ Birth mother only
    3. ____________ Birth mother plus partner (not birth father)
    4. ____________ Birth father only
    5. ____________ Birth father plus partner (not birth mother)
    6. ____________ Other relatives (grandparents, aunt or uncle, etc.)
    7. ____________ Adoptive parents
    8. ____________ Foster parents
    9. ____________ Institutions (group home, hospital, detention, shelter)
    10. ____________ Other (Specify)

11. How many brothers or half-brothers do you have?
    _____ Number of full brothers (both parents in common)
    _____ Number of half brothers (one common parent)

12. How many sisters or half-sisters do you have?
    _____ Number of full sisters (both parents in common)
    _____ Number of half sisters (one common parent)

13. How many children do you have?
    _____ Biological sons
    _____ Biological daughters
    Are you currently expecting a baby (you or your partner is pregnant)?
    When is the baby due? ______

14. How many times have you been married? _____times(s).

15. How many times has the primary caretaker been married? _____time(s).

16. Current Marital Status (Check one):
    Primary Caretaker __________________________
    Adolescent’s Birth Parents __________________________
    Single:
    __Never been married and not in a relationship
    __Divorced
    __Widowed
    Legally married:
    __Married, still together (for how many years? ___)
    __Separated but still married and not in a romantic relationship
    Legally married:
    __Married, still together (for how many years? ___)
    __Separated but still married and not in a romantic relationship
In a romantic relationship:

___Cohabiting (for how long?________)
___Not cohabiting (for how long?_______)

17. Employment Status (Check one for client and one for primary caretaker):

Adolescent Primary Other Adult Caretaker Family Member ___N/A

1) Work 40+ hours a week ___ ___ ___ ___
2) Fewer than 40 hours a week ___ ___ ___ ___
3) Homemaker ___ ___ ___ ___
4) Retired ___ ___ ___ ___
5) Unemployed ___ ___ ___ ___
6) Student ___ ___ ___ ___
7) Other _________ ___ ___ ___ ___

What is the adolescent’s primary occupation (whether or not he/she is currently employed)?

Adolescent ________________________________
Primary Caretaker ________________________________
Other Adult Family Member ________________________________

18. What is your total annual income?

0-5,000 $5,001- $15,000 $15,001- $30,000 $30,001- $45,000 $45,001- $60,000 $60,001- $75,000 $75,001 or above

18a. In the last 12 months, have you, or your mom, received any money from:

$_______ Child support $_______ Alimony $_______ Social Security Benefits

19. What is each of your highest level of education?

Adolescent Primary Other Adult Family Member ___N/A

0) Unknown ___ ___ ___ ___
01) First grade ___ ___ ___ ___
02) Second grade ___ ___ ___ ___
03) Third grade ___ ___ ___ ___
04) Fourth grade ___ ___ ___ ___
05) Fifth grade ___ ___ ___ ___
06) Sixth grade ___ ___ ___ ___
07) Seventh grade ___ ___ ___ ___
08) Eighth grade ___ ___ ___ ___
09) Ninth grade ___ ___ ___ ___
10) Tenth grade ___ ___ ___ ___
11) Eleventh grade ___ ___ ___ ___
12) High school graduate (not GED) ___ ___ ___ ___
13) One year full-time post-secondary ___ ___ ___ ___
14) Two years full-time post-secondary ___ ___ ___ ___
15) Three years full-time post-secondary ___ ___ ___ ___
20. What degrees do family members have?

<table>
<thead>
<tr>
<th>Adolescent</th>
<th>Primary Caretaker</th>
<th>Other Family Member</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1)</td>
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<td>2)</td>
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<td>3)</td>
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<td>4)</td>
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<td>6)</td>
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<td></td>
<td></td>
<td></td>
<td>7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8)</td>
</tr>
</tbody>
</table>

LEGAL:

21. Have you ever been ARRESTED?  Yes / No  How many times?  ___________
List incidents (from most recent): include charges, date, status (conviction, probation), and whether alcohol or other drugs were involved:

<table>
<thead>
<tr>
<th>Charge</th>
<th>Date</th>
<th>Status</th>
<th>Alcohol/Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D.

22. Do you have a JPPO/Case Worker/Case manager?  Yes / No
Which?  __________________

23. Are you involved in a GANG?  Yes / No
Have you been ranked in?  Yes / No
Which gang are you a member of?  ___________________
How often are you involved in fights?  __________________
PREVIOUS RUNAWAY/HOMELESS EPISODES:

24. How many times have you run away? ________________
   Please list all times you have runaway, where you ran from, where you stayed and reasons for running.
   Date  Ran From (e.g. home):  Where Stayed:  Reasons for Running:  How Long Homeless:
   A.
   B.
   C.
   D.

25. How old were you the first time you did not have a place to live? ____________

26. How old were you the first time you ran away from home? ________________

MENTAL HEALTH TREATMENT:

27. Have you ever been hospitalized, INPATIENT, for SUBSTANCE abuse treatment? Yes / No
   Describe:  How many times?____________
   Where, when, duration of stay:

28. Have you ever been hospitalized, INPATIENT, for EMOTIONAL difficulties?  Yes / No
   Describe:  How many times?____________
   Where, when, duration of stay:

29. Have you ever received OUTPATIENT treatment for ALCOHOL/DRUG issues? Yes / No
   Describe where, when, duration of treatment:

30. Have you ever received OUTPATIENT treatment for other EMOTIONAL problems? Yes / No
   Describe where, when, duration of treatment:

31. Have there been times when you couldn't remember what you did while drinking? Yes / No
    (e.g., your friends told you later what you did, or you woke up not knowing how you got somewhere)
    About how often has this happened to you?
    ___ almost every time I drink  ___ most of the times that I drink
    ___ about half of the times that I drink  ___ less than half of the times that I drink
    ___ once in a while  ___ once or twice in my lifetime
32. Is there evidence that DETOX is needed? Yes / No

**PHYSICAL HEALTH TREATMENT:**

33. In the past 12 months, have you visited the emergency room? Yes / No
   _______ Times

34. In the past 12 months, have you spent any days in the hospital? Yes / No
   _______ Days

35. In the past 12 months, have you used any type of urgent care (e.g., emergency treatment outside of a regular hospital setting)? Yes / No
   _______ Times

36. In the past 12 months, have you visited a primary care physician (e.g., your regular doctor)? Yes / No _______ Times

**ASSESSMENT OF DANGER:**

37. Have you ever tried to harm yourself, commit SUICIDE, or placed yourself in dangerous or life-threatening situations? Yes / No
   How many times? _______
   A) Please describe when, reasons, what happened (hospitalized?):

   B) Have you had thoughts of harming yourself recently (in the last few weeks)? Yes / No
      Do you have a plan? Y / N Describe:

      Do you have access to what you need to do that? Y / N Describe:

      What are your reasons for wanting to die?

      What stops you from killing yourself?

38. **HOMICIDAL IDEATION:** Is there anyone you seriously want to harm? Yes / No
    Do you have a plan? Y / N Describe:
Do you have access to what you need to do that?  Y / N  Describe:

Who is this person?

Do you know how to find this person?  Y / N  Describe (address/phone):

What stops you from harming this person?

39. Has anyone ever touched you SEXUALLY in a way that made you feel uncomfortable OR hurt you OR was against your will? Yes / No
   How many times? ________
   Is this happening currently? Yes / No
   Was the abuse reported to the authorities? Yes / No
   Describe the circumstances (when, who, duration of abuse):

40. Has anyone ever hurt you PHYSICALLY (enough to leave marks or bruises or burns)? Yes / No
   Is this happening currently? Yes / No
   Was the abuse reported to the authorities? Yes / No
   Describe the circumstances (when, who, duration of abuse):

INCOME SOURCES AND OTHER SUPPORTS:

41. During the last 30 days, did you get any money from:
   a. A full or part-time job? Yes / No
   b. Doing any other kind of work, including day labor, seasonal, minimum wage or pick up work? Yes/ No
   c. Friends? Yes / No
   d. Relatives? Yes / No
   e. Panhandling? Yes / No
   f. Clothing and other personal possessions that you sold? Yes / No
   g. Collecting and selling bottles and cans? Yes / No
   h. The sale of your blood or plasma? Yes / No
   i. Dealing drugs? Yes / No
   j. Prostitution? Yes / No
   k. An agency or program? Yes / No
   l. Stealing? Yes / No
   m. Anything else I haven’t mentioned? Yes / No  Specify: ___________________
VICTIMIZATION EXPERIENCES:

42. Now I’d like to ask about any crimes that may have been committed against you. In the last 12 months, have you been:
   a. Assaulted or physically attacked?  Yes / No
   b. Robbed, that is, was something taken from you by someone who threatened you with violence if you didn’t give it to them?  Yes / No
   c. Burglarized, that is, has someone broken into your room or apartment and taken some of your property?  Yes / No
   d. Have you been raped?  Yes / No
   e. Have you been sexually assaulted, other than rape?  Yes / No
   f. Have you been the victim of another crime?  Yes/No
   Specify:______________________________

43. In order to keep yourself from being harmed in any way, do you:
   a. Carry a weapon?  Yes / No
   Specify:________________________
   b. Stay away from certain places?  Yes / No
   c. Stay away from people?  Yes / No
   d. Sleep during the day and stay awake at night?  Yes / No
   e. Make sure you’re always with someone you can trust?  Yes / No
   f. Do you do anything else to keep from being harmed?  Yes / No
   Specify:______________________________

FAMILY HISTORY QUESTIONNAIRE

Sometimes people have problems because of their drinking or drug use. These might be health problems, trouble with the law, difficulties with work or school, or family, money, or personal problems. Have any of these people in your family have had problems like that because of their drinking or use of other drugs? (Please circle one number.)

<table>
<thead>
<tr>
<th></th>
<th>NO</th>
<th>YES</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. Your birth father?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>45. Your birth mother?</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>(If raised by other than birth father:) 46. The father who raised you?</td>
<td>N/A</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>(If raised by other than birth mother:) 47. The mother who raised you?</td>
<td>N/A</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

111
<table>
<thead>
<tr>
<th>Question</th>
<th>Number</th>
<th>Unknown</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>48. Your birth father's father? (Grandfather on father's side)</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>49. Your birth father's mother? (Grandmother on father's side)</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>50. Your birth mother's father? (Grandfather on mother's side)</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>51. Your birth mother's mother? (Grandmother on mother's side)</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

How many of these people have had problems because of their drinking or use of other drugs?

Write 0 if there are known to be none
Circle ? if the status of existing relatives is unknown
Circle NA only if there are no relatives in this category

<table>
<thead>
<tr>
<th>Question</th>
<th>Number</th>
<th>Unknown</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>52. How many of your BROTHERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>53. How many of your HALF BROTHERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>54. How many of your SISTERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>55. How many of your HALF SISTERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
</tbody>
</table>

(Only if there is a biological son over 10)

<table>
<thead>
<tr>
<th>Question</th>
<th>Number</th>
<th>Unknown</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>56. How many of your (biological) SONS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>----------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>(Only if there is an adopted son over age 10)</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>57. How many of your ADOPTED SONS?</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Only if there is a biological daughter over age 10)</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>58. How many of your (biological) DAUGHTERS?</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Only if there is an adopted daughter over age 10)</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>59. How many of your ADOPTED DAUGHTERS?</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>How many of your (birth) FATHER'S BROTHERS?</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>60. (Uncles on father's side)</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>61. How many of your (birth) FATHER'S SISTERS?</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Aunts on father's side)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>62. How many of your (birth) MOTHER'S BROTHERS?</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>(Uncles on mother's side)</td>
<td></td>
<td>?</td>
<td>NA</td>
</tr>
<tr>
<td>63. How many of your (birth) MOTHER'S SISTERS?</td>
<td>[_____]</td>
<td>?</td>
<td>NA</td>
</tr>
</tbody>
</table>
The Conflict Tactics Scale is not included as it is copyrighted.
The Beck Depression Index is not included as it is copyrighted.
Form 90-DI

DRUG USE ASSESSMENT (Intake)

1. For period from _____/ _____/ _____ through _____/ _____/ 

2. Number of days in this assessment period: _____/ _____/ 

3. This is: (0) Pretreatment 

4. __(1) Male  __(2) Female 

5. Current body weight in pounds: ____/ ____/ 

6. Weight was obtained by: _(1) weighing or _ (2) self-report 

7. This interview was conducted: 

   ____(1) on site  ____(2) by telephone 
   ____ (3) home visit  ____ (4) other location 

8. Presenting drug: __________ 

"I'd like to begin by reminding you that whatever you say here is confidential. In this first interview, I am going to be asking you some specific questions about your drug use in the 90 days before your last use. I'll be asking about drugs that were prescribed for you as well as others that you have used during this period. [Place calendar in front of client.] Here is a calendar to help you remember this period of time. First of all, when was the last time that you used any drug? [Drug is as defined above; count back 89 days and cross out with Xs the days preceding this period.] So the period I'm going to be asking you about is from [beginning date,] up through [end date]." 

"I realize that this is a long period of time to remember things that happened, so we will use this calendar to help you identify events that occurred during this period. Notice that a few events are already printed on the calendar. [Point out some specific events already printed on the calendar.] Were there any particularly memorable things that happened during this time - any birthdays, illnesses or accidents, anniversaries, parties, hospitalizations, vacations, changes in your work or at home, things like that?" [Record on calendar.]"
"Now the rest of the questions that I will ask you are also about this time period from up through __________. I'll be asking you about your drug use in a few minutes, but first I’d like to know about a few other things. Feel free to take your time in answering, since it is important for you to remember as accurately as you can. Let me know if you’re not sure what I am asking, or what I mean by a particular question. OK?"

### TREATMENT / INCARCERATION / LIVING EXPERIENCES

"During this period, how many days did you spend in a hospital or treatment program where you stayed overnight?" [Mark days on calendar]

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hm</td>
<td>total number of hospital days for medical problems</td>
<td>9. ___</td>
</tr>
<tr>
<td>Htox</td>
<td>total number of hospital days for detoxification</td>
<td>10. ___</td>
</tr>
<tr>
<td>Rtox</td>
<td>total number of non-hospital residential detox days:</td>
<td>11. ___</td>
</tr>
<tr>
<td></td>
<td>total number of ambulatory detox treatment days:</td>
<td>12. ___</td>
</tr>
<tr>
<td>Rd</td>
<td>total number of residential days for other drug problems</td>
<td>13. ___</td>
</tr>
<tr>
<td>Ra</td>
<td>total number of residential days alcohol treatment</td>
<td>14. ___</td>
</tr>
<tr>
<td>Rp</td>
<td>total residential days for emotional / psych problems</td>
<td>15. ___</td>
</tr>
</tbody>
</table>

Total days in residential treatment during this period:
[Sum of 9 + 10 + 11 + 13 + 14 + 15. Do not include 12] 16. ___

"During this period, did you spend any time in jail or prison?" [Mark days on calendar]

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inc</td>
<td>total days incarcerated during period</td>
<td>17. ___</td>
</tr>
</tbody>
</table>

Total day in institutions [add 16 + 17] 18. ___

"During this period, where did you live? How many days did you live in:" [Do not record on calendar unless useful as memory aids.]
Total number of days in own house, apartment, room: 19. _____
(non-homeless status, at least 30 days paying rent or if minor, receiving appropriate supervision/care without paying rent)

Total number of days living in temporary housing (group home): 20._____ 

Total number of days homeless (squat, temporary shelters, etc.): 21._____ 

**Total of lines 18 + 19 + 20 + 21 (must equal Line 2):**

"During this period, **how many days were there** [not including hospital or detox days] **when you saw a doctor, nurse, nurse-practitioner, or physician’s assistant for any kind of medical care?** [Do not record on calendar unless useful as memory aids.]

Total days seen for medical care 23. _____

"During this period, **on how many days did you have a session with a counselor or therapist?**” [Do not record on calendar unless useful as memory aids.]

**total number of days for DRUG PROBLEMS (EXCEPT alcohol)** write down the drug or drugs 24. _____

If treatment was received, describe briefly (type, duration, location, when):

**total number of days for ALCOHOL PROBLEMS** 25. _____

If treatment was received, describe briefly (type, duration, location, when):

**total days for EMOTIONAL/PSYCHOLOGICAL PROBLEMS** 26.____
If treatment was received, describe briefly (type, duration, location, when):

"During this period, on how many days did you attend a Twelve-Step meeting like NA, CA, or AA?: Either for you or to support someone else [Do not record on calendar unless useful as memory aids.]

total number of days attending 12-step meetings (enter 0 if none): 27a.____

Number of AA (Alcoholics Anonymous) Meetings: 27b. ________
Number of NA (Narcotics Anonymous) Meetings: 27c. ________
Number of CA (Cocaine Anonymous) Meetings: 27d. ________
Number of Ala-teen Meetings: 27e. ________
Number of any other 12-step meetings: 27f. ________
specify: ________

OTHER ACTIVITIES

[Do not enter activity days on the calendar unless they appear to be of value for recalling drinking.]

WORK: "How many days have you been paid WORK days 28. _____ for working during this period?"

EDUCATION: "How many days have you been in school or training during this period?"

EDUCATION days 29. _____

RELIGIOUS ATTENDANCE: "On how many days during this time did you attend a worship service or other religious celebration?"

RELIGIOUS ATTENDANCE days 30. _____

MEDICATIONS

"During this period, on how many days did you take any medications
prescribed by a physician?" [Do not enter medication days on the
calendar unless they appear to be of memory value.]

   to treat a medical problem
       specify: 31. ____

   to prevent you from drinking (Antabuse only) 32. ____

   to help you detoxify / come off drugs or alcohol
       specify: 33. ____

   to help you stabilize or change your use of drugs
       specify:
       maintaining / stabilizing drugs (e.g., methadone)
       serotonin uptake inhibitors (make sure not for depression)

   to help you keep from using drugs 35. ____
       specify:
       drug antagonists / blockers

   for psychological or emotional problems 36. ____
       specify:

**DRUG ASSESSMENT**

Card Sort

"Now I am going to show you this set of cards. Each card names a
type of drug that people sometimes use. I'd like you to sort them into two
piles for me. In one pile here [indicate position and use marker card] I'd
like you to place those cards that name a kind of drug that you have tried at
least once in your life. In the other pile [indicate position and use marker
card], place the cards that name the types of drugs that you have never used
at all."

[Give cards to client IN NUMERICAL ORDER - with Alcohol on top,
Tobacco next, Marijuana next, and so on. When the sorting has been
completed, take the pile on the right, and check all these categories a "NO" in the LIFETIME USE column below. 
For convenience, record here the client's CURRENT AGE: 
BIRTHDAY: ______

<table>
<thead>
<tr>
<th>DRUG TYPE</th>
<th>Lifetime Use Ever?</th>
<th>Age at First Use</th>
<th>Lifetime weeks of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol (al)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Tobacco (to)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Marijuana/Cannabis (ma)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Tranquilizers (tr)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Sedatives/Downers (do)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Steroids (sd)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Stimulants/Uppers (up)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Cocaine (co)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Hallucinogens (ha)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Opiates (op)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Inhalants (in)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td>Other Drugs (xx)</td>
<td>( ) 0 No</td>
<td>( ) 1 Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Total Yes:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Then continue with the "Yes" pile:
"Now for each of these types of drugs, I'd like you to give me an estimate of how long you have used them in your lifetime. What I will want to know is: about how many weeks during your lifetime have you used each type of drug at least once.

Let's start with ________ [Use first YES card from numerical sequence]. How many weeks, during your lifetime, would you say that you used ________ at least once?"

[Record responses on the chart on Page 5. Convert all responses into weeks. Year = 52 weeks if used every week. Month = 4 weeks. etc. Repeat the query for each YES drug card. Then give YES pile back to client.]

Periods of Abstinence

"Now I'd like to ask you about your drug use during this same period we were discussing before. The things already recorded on the calendar here may help you to remember better. I'm not asking here about drugs that were prescribed for you for medical problems, like antibiotics, stomach or blood pressure medicine. I'm asking about drugs not prescribed for you, although I do want to know about any medication prescribed for pain, or to help you relax or sleep. I will also ask you about your use of alcohol. First of all, were there any periods of days during this time when you used no drugs (including alcohol) at all?"

[Mark all abstinent days with a capital "A" on calendar. A day with Tobacco use is not an abstinent day]

37. Date of first drug use during period: _____/_____/______

Drug:

38. Date of last drug use during period: _____/_____/______

Drug:

Give back the YES pile and say:

Now I'd like you to sort these cards again, to say which kinds of drugs you have used at least once during the period we've been talking about on this calendar, from ________ up through ________. If you used the drug at least once during this time, put it in a pile on the left here, and if you never used it at all during this period, put it on the right."

[Alternatively, if
there are few cards, simply ask: "Which of these have you used at least once during this period we've been talking about?"

For each NO card in this sort, print a zero (0) under "Total Days Use in Period" on the USE PATTERN CHART on Page 7. For the remainder, proceed with the CALENDAR instructions on Page 8.

### USE PATTERN CHART

<table>
<thead>
<tr>
<th>Drug Classes</th>
<th>Used in this period?</th>
<th>Tota1 Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Oral Ingest</th>
<th>Smoke</th>
<th>Nasal Inhale</th>
<th>Needle</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>al</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tobacco</td>
<td>to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marijuana/ Cannabis</td>
<td>ma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranquilizer</td>
<td>tr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedatives/ Downers</td>
<td>do</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steroids</td>
<td>sd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stimulants/ Uppers</td>
<td>up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td>co</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

123
<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Op</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Opiates</td>
<td>op</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalants</td>
<td>in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Drugs</td>
<td>xx</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Use Categories:**

1 = Single use  
2 = Several uses  
3 = Steady or heavier use

Enter days of each type of use. 1 + 2 + 3 must equal Total Days of use. Enter days of each route of administration (use rules from manual). These must total at least to the number of days of use, but total may be higher if multiple routes of administration were used on the same day.

**If OTHER route of administration, specify drug(s) and route here:**

"Now I'd like to ask you about each of the drugs that you have used during this period. I'd want to get an idea of what your pattern of use was during this period of time for each of these drugs. We'll use this calendar to make it easier. Let's start with _____________. When were you using during this period?

Proceed drug by drug, entering drug codes for each day of use. For a day on which alcohol, marijuana, and cocaine were used, for example three codes would be entered into the box for that day: al, ma, co. Using different colored pencils for different drugs can be helpful.

Using the calendar, carefully count the total number of days of use during the assessment period for each drug class, and put this information on the USE PATTERN CHART (Page 5).

"Now I'm going to go back through these drugs once again and ask you two more questions about each. For each one, I will tell you the total number of days that you said you used this drug during this period, and I will want to know how many of those days you think fell into each of these three categories." [Show use categories]
"According to the calendar we did, you used ___________ on a total of ____ days during this period. Help me divide those days up among these three categories. On how many of those ____ days would you say that you used only once? How many of those days did your use fall in between? And that would mean that on ____ days your use of _______fell in this third category – does that seem right? And how did you give yourself (take) ______ during this period of time we have been talking about? Any other way? If more than one route of administration for a drug class, ask:

"According to the calendar we did, you used ___________ on a total of ____ days during this period. On how many of those ____ days would you say that you gave yourself ___[drug]__ by ___[route]___?

Repeat for each drug class. Be sure you have accounted for all days of use. The total across routes of administration should be at least the same as the number of days of use, although the total may be higher if multiple routes are used on the same day.

Fill in the information on the Use Pattern Chart. Be sure 1+2+3 totals to the number of days of use.

When you have completed the calendar for all drug classes used, show the subject the CONFIDENCE SCALE and ask:

"Now I'd like you to tell me, using the line, how confident you feel about the information you've given me about your drug use. How accurate do you think you have been in estimating your drug use on this calendar? I'm not asking if you got each drug on the exact days you used it. But overall, how accurate is this calendar in showing how much you used drugs during this period?

Circle the subject’s response below.

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Accurate</td>
<td>Fairly Accurate</td>
<td>Not at all Accurate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CATEGORIES FOR DAYS OF USE
(1) Single use. On this day you used the drug only once.
   Examples: One alcoholic drink
              One cigarette
              One dose

(2) Medium use. On this day you used the drug more than once, but
       not steadily or heavily.

   Examples: 2-4 drinks
              2-9 cigarettes
              Two doses of other drugs

(3) Heavier use. On this day you used the drug more heavily than the
       "medium" category.

   Examples: 5 or more drinks
              10 or more cigarettes (half a pack or more)
              Three or more doses of other drugs

WAYS OF TAKING DRUGS

Orally     Eating, drinking, swallowing, placing the drug under the
tongue, chewing, dipping
Smoking    Lighting and smoking the drug
Inhaling   Snorting, breathing in the drug (but not smoking)
Injecting  Taking a drug by needle; injecting under the skin or into a vein

CONFIDENCE SCALE

    5     4     3     2     1
Very       Fairly Not at all
Accurate   Accurate Accurate
Appendix B: Tables
Table 1

Demographic Characteristics of the Current Sample (N = 183)

<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adolescent child</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>11.54 (2.55)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>95 (51.9)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>88 (48.1)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>82 (44.8)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>75 (41)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>26 (14.2)</td>
<td></td>
</tr>
<tr>
<td><strong>Mother</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>33.92 (6.31)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>98 (53.6)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>78 (42.6)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7 (3.7)</td>
<td></td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>84 (45.9)</td>
<td></td>
</tr>
<tr>
<td>Legally married</td>
<td>35 (19.1)</td>
<td></td>
</tr>
<tr>
<td>In a romantic relationship</td>
<td>64 (34.9)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11th grade and below</td>
<td>79 (43.2)</td>
<td></td>
</tr>
<tr>
<td>High school graduate</td>
<td>34 (18.6)</td>
<td></td>
</tr>
</tbody>
</table>

Continued
Table 1 continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 years post-secondary</td>
<td>60 (32.7)</td>
<td></td>
</tr>
<tr>
<td>College graduate – 4 years post-graduate</td>
<td>10 (5.4)</td>
<td></td>
</tr>
<tr>
<td>Total annual income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-$5,000</td>
<td>49 (26.9)</td>
<td></td>
</tr>
<tr>
<td>$5,001-$15,000</td>
<td>61 (33.5)</td>
<td></td>
</tr>
<tr>
<td>$15,001-$30,000</td>
<td>39 (21.4)</td>
<td></td>
</tr>
<tr>
<td>$30,001-$45,000</td>
<td>16 (8.8)</td>
<td></td>
</tr>
<tr>
<td>$45,001 and above</td>
<td>17 (9.3)</td>
<td></td>
</tr>
<tr>
<td>% alcohol and illicit drug use in past 90 days</td>
<td></td>
<td>67.52 (32.34)</td>
</tr>
<tr>
<td>Trauma History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood abuse</td>
<td>107 (58.8)</td>
<td></td>
</tr>
<tr>
<td>IPV</td>
<td>125 (71.4)</td>
<td></td>
</tr>
<tr>
<td>Street victimization</td>
<td>54 (30.7)</td>
<td></td>
</tr>
<tr>
<td>Abuse in childhood and adulthood (IPV or street victimization)</td>
<td>147 (80.3)</td>
<td></td>
</tr>
<tr>
<td>No Trauma</td>
<td>28 (15.3)</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2

*Internal Consistency for the CTS Subscales in the Current Study*

<table>
<thead>
<tr>
<th>Timepoint</th>
<th>Subscale</th>
<th>Baseline (alpha coefficient)</th>
<th>12 months (alpha coefficient)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother’s Perceptions</strong></td>
<td><strong>Own behaviors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Reasoning</strong></td>
<td>.29</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td><strong>Verbal Aggression</strong></td>
<td>.74</td>
<td>.77</td>
</tr>
<tr>
<td></td>
<td><strong>Violence</strong></td>
<td>.82</td>
<td>.95</td>
</tr>
<tr>
<td><strong>Children’s behaviors</strong></td>
<td><strong>Reasoning</strong></td>
<td>.48</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td><strong>Verbal Aggression</strong></td>
<td>.74</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td><strong>Violence</strong></td>
<td>.87</td>
<td>.98</td>
</tr>
</tbody>
</table>
Table 3

Results of Pearson Correlational Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. M_Age</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. C_Age</td>
<td>.56***</td>
<td>--</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Substance Use</td>
<td>-.1</td>
<td>-.23**</td>
<td>--</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Depressive symptoms</td>
<td>.04</td>
<td>.13</td>
<td>.11</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. M_R_B</td>
<td>-.09</td>
<td>-.1</td>
<td>-.01</td>
<td>.06</td>
<td>--</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. C_R_B</td>
<td>-.03</td>
<td>-.06</td>
<td>-.07</td>
<td>.07</td>
<td>.64***</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>7. R_M_12</td>
<td>.04</td>
<td>.05</td>
<td>-.08</td>
<td>.09</td>
<td>.22**</td>
<td>.25**</td>
<td>--</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. R_C_12</td>
<td>-.02</td>
<td>.03</td>
<td>-.06</td>
<td>.07</td>
<td>.16*</td>
<td>.23**</td>
<td>.77***</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. VA_M_B</td>
<td>.09</td>
<td>.24**</td>
<td>.08</td>
<td>.34***</td>
<td>.17*</td>
<td>.17*</td>
<td>.04</td>
<td>.05</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. VA_C_B</td>
<td>.11</td>
<td>.04</td>
<td>.07</td>
<td>.38***</td>
<td>.17*</td>
<td>.18*</td>
<td>.11</td>
<td>.02</td>
<td>.65***</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. VA_M_12</td>
<td>.14</td>
<td>.12</td>
<td>.09</td>
<td>.29***</td>
<td>.02</td>
<td>-.01</td>
<td>.38***</td>
<td>.29***</td>
<td>.43***</td>
<td>.37***</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>12. VA_C_12</td>
<td>.14</td>
<td>.01</td>
<td>.12</td>
<td>.35***</td>
<td>.06</td>
<td>.07</td>
<td>.4***</td>
<td>.26**</td>
<td>.36***</td>
<td>.44***</td>
<td>.72***</td>
<td>--</td>
</tr>
</tbody>
</table>

Continued
Table 3 continued

Note. M_Age = mother’s age at baseline; C_Age = child’s age at baseline; R_M_B = reasoning skills used by mother to resolve conflicts at baseline; R_C_B = reasoning skills used by child to resolve conflicts at baseline; R_M_12 = reasoning skills used by mother to resolve conflicts at 12 months; R_C_12 = reasoning skills used by child to resolve conflicts at 12 months; VA_M_B = verbal aggression used by mother to resolve conflicts at baseline; VA_C_B = verbal aggression used by child to resolve conflicts at baseline; VA_M_12 = verbal aggression used by mother to resolve conflicts at 12 months; VA_C_12 = verbal aggression used by child to resolve conflicts at 12 months.

*p<.05. **p<.01. ***p<.001.
Table 4

Results of Chi-square Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ethnicity</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Runaway Episode</td>
<td>.42</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. PV_M_B</td>
<td>.14</td>
<td>15.13***</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PV_C_B</td>
<td>10.06**</td>
<td>1.2</td>
<td>30.87***</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. PV_M_12mo</td>
<td>.76</td>
<td>2.56</td>
<td>4.5*</td>
<td>2.2</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>6. PV_C_12mo</td>
<td>.56</td>
<td>.09</td>
<td>.71</td>
<td>4.38*</td>
<td>34.05***</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. PV_M_B = physical violence used by mothers to resolve conflicts at baseline; PV_C_B = physical violence used by children to resolve conflicts at baseline; PV_M_12mo = physical violence used by mothers to resolve conflicts at 12 months; PV_C_12mo = physical violence used by children to resolve conflicts at 12 months.

*p<.05. **p<.01. ***p<.001.
Table 5

Fit Indices for Latent Profile Analysis Models

<table>
<thead>
<tr>
<th>Model</th>
<th>BIC</th>
<th>Adjusted BIC</th>
<th>BLRT</th>
<th>Entropy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-class</td>
<td>1954.99</td>
<td>1875.81</td>
<td>-1041.01***</td>
<td>.84</td>
</tr>
<tr>
<td>3-class</td>
<td>1939.48</td>
<td>1819.13</td>
<td>-912.37***</td>
<td>.85</td>
</tr>
<tr>
<td>4-class</td>
<td>1952.83</td>
<td>1791.3</td>
<td>-870.76***</td>
<td>.88</td>
</tr>
<tr>
<td>5-class</td>
<td><strong>1978.06</strong></td>
<td><strong>1775.36</strong></td>
<td><strong>-843.57</strong>*</td>
<td><strong>.88</strong></td>
</tr>
<tr>
<td>6-class</td>
<td>2022.54</td>
<td>1778.67</td>
<td>-822.32</td>
<td>.88</td>
</tr>
</tbody>
</table>

Bold indicates the model with the best fit.

BIC: Bayesian Information Criterion. BLRT: bootstrapped likelihood ratio test.

*p<.05. **p<.01. ***p<.001.
### Table 6

**Overall Proportions of Each Indicator by Class Solution for Model 5**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Class Solution</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Class 1</td>
<td>Class 2</td>
<td>Class 3</td>
<td>Class 4</td>
</tr>
<tr>
<td>Childhood abuse-sexual</td>
<td>1.000</td>
<td>.465</td>
<td>.800</td>
<td>.187</td>
<td>.841</td>
</tr>
<tr>
<td>Childhood abuse-physical</td>
<td>0.643</td>
<td>.277</td>
<td>.427</td>
<td>.112</td>
<td>.339</td>
</tr>
<tr>
<td>IPV-sexual-penetration</td>
<td>.250</td>
<td>.208</td>
<td>1.000</td>
<td>.000</td>
<td>1.000</td>
</tr>
<tr>
<td>IPV-sexual-no penetration</td>
<td>.073</td>
<td>.109</td>
<td>.800</td>
<td>.017</td>
<td>.996</td>
</tr>
<tr>
<td>IPV-physical</td>
<td>.348</td>
<td>.933</td>
<td>1.000</td>
<td>.104</td>
<td>.904</td>
</tr>
<tr>
<td>IPV-emotional-called names or controlling behavior</td>
<td>.000</td>
<td>.753</td>
<td>.600</td>
<td>.037</td>
<td>.874</td>
</tr>
<tr>
<td>IPV-emotional- fear for safety</td>
<td>.651</td>
<td>1.000</td>
<td>1.000</td>
<td>.049</td>
<td>.864</td>
</tr>
<tr>
<td>Street victimization-sexual-rape</td>
<td>.000</td>
<td>.000</td>
<td>1.000</td>
<td>.000</td>
<td>.045</td>
</tr>
<tr>
<td>Street victimization-sexual assault</td>
<td>.000</td>
<td>.000</td>
<td>.800</td>
<td>.000</td>
<td>.091</td>
</tr>
<tr>
<td>Street victimization-physical</td>
<td>.000</td>
<td>.212</td>
<td>1.000</td>
<td>.139</td>
<td>.000</td>
</tr>
<tr>
<td>Street victimization-robbery</td>
<td>.182</td>
<td>.111</td>
<td>1.000</td>
<td>.073</td>
<td>.224</td>
</tr>
<tr>
<td>Street victimization-burglary</td>
<td>.000</td>
<td>.182</td>
<td>.400</td>
<td>.087</td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 7

Results of the Multinomial Logistic Regression in Comparison to the Reference Group

<table>
<thead>
<tr>
<th>Class</th>
<th>Predictor</th>
<th>Odds Ratio</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>Age</td>
<td>1.01</td>
<td>.95-1.07</td>
</tr>
<tr>
<td></td>
<td>Ethnicity</td>
<td>1.08</td>
<td>.95-1.22</td>
</tr>
<tr>
<td></td>
<td>Depressive symptoms</td>
<td>1.05</td>
<td>1.02-1.09**</td>
</tr>
<tr>
<td></td>
<td>Runaway episodes</td>
<td>2.13</td>
<td>1.01-4.49*</td>
</tr>
<tr>
<td></td>
<td>Substance use</td>
<td>1.01</td>
<td>.99-1.02</td>
</tr>
<tr>
<td>Class 2</td>
<td>Age</td>
<td>1.06</td>
<td>.99-1.14</td>
</tr>
<tr>
<td></td>
<td>Ethnicity</td>
<td>1.06</td>
<td>.89-1.25</td>
</tr>
<tr>
<td></td>
<td>Depressive symptoms</td>
<td>1.05</td>
<td>1.01-1.09*</td>
</tr>
<tr>
<td></td>
<td>Runaway episodes</td>
<td>4.56</td>
<td>1.63-12.77**</td>
</tr>
<tr>
<td></td>
<td>Substance use</td>
<td>1.01</td>
<td>.99-1.02</td>
</tr>
</tbody>
</table>

*p<.05. **p<.01. ***p<.001.
Table 8

*Means for Reasoning Skills and Verbal Aggression Over Time*

<table>
<thead>
<tr>
<th>Mother’s Perceptions</th>
<th>Subscale</th>
<th>Baseline</th>
<th>12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own behaviors</td>
<td>Reasoning</td>
<td>2.6</td>
<td>2.25</td>
</tr>
<tr>
<td>Children’s behaviors</td>
<td>Reasoning</td>
<td>1.82</td>
<td>1.84</td>
</tr>
<tr>
<td>Own behaviors</td>
<td>Verbal Aggression</td>
<td>10.69</td>
<td>6.95</td>
</tr>
<tr>
<td>Children’s behaviors</td>
<td>Verbal Aggression</td>
<td>12.33</td>
<td>8.09</td>
</tr>
</tbody>
</table>
APPENDIX C: Figures
Figure 1. CONSORT Flow Chart.

Prescreened: 299
Criteria Met: 264

Randomized: 183

Allocation

Allocated to Home Based EBFT (n=62)
• Received intervention (n=56)
• Did not receive intervention (n=6)
Reasons: Participants were not interested in the therapeutic

Allocated to Office Based EBFT (n = 61)
• Received intervention (n=48)
• Did not receive intervention (n=13)
Reasons: Participants were not interested in the therapeutic

Allocated to WHE (n=60)
• Received intervention (n=28)
• Did not receive intervention (n=32)
Reasons: Participants were not interested in the therapeutic intervention or could not be

Follow-up

Lost to follow-up
• 3 months: n = 5
• 6 months: n = 6
• 12 months: n = 8
• 18 months: n = 7
Reasons: changed address or refused to do the assessment

Lost to follow-up
• 3 months: n = 7
• 6 months: n = 3
• 12 months: n = 5
• 18 months: n = 5
Reasons: changed address or refused to do the assessment

Lost to follow-up
• 3 months: n = 6
• 6 months: n = 9
• 12 months: n = 9
• 18 months: n = 8
Reasons: changed address or refused to do the assessment

Analysis

Analyzed (n=62)
Excluded from the analysis:

Analyzed (n=61)
Excluded from the analysis:

Analyzed (n=60)
Excluded from the analysis:

Non-randomized (n=81)
Reasons:
• Phone disconnected: 6
• Client not available: 28
• Kept rescheduling: 17
• Lost interest: 4
• Family opposition: 10
• Lost contact: 2
• 30 miles < 2: 2
• Disqualified at assessment (>12-mos sobriety): 2
• Child not biological: 2
• Did not want to be video-recorded: 4
• Disqualified at assessment (>10x use past 90 days): 2
• Will be housebound for 8 weeks (due to surgery): 1
Figure 2. APIM of reasoning skills used to resolve conflicts among mothers and children over time.

Note. M_Base = reasoning skills used by mothers to resolve conflicts at baseline; C_Base = reasoning skills used by children to resolve conflicts at baseline; M_12mo = reasoning skills used by mothers in to resolve conflicts at 12 months; C_12mo = reasoning skills used by children to resolve conflicts at 12 months.

*p < .05. **p < .01. ***p < .001.
Figure 3. APIM of verbal aggression used to resolve conflicts among mothers and children over time.

Note. M_Base = verbal aggression used by mothers in to resolve conflicts at baseline; C_Base = verbal aggression used by children to resolve conflicts at baseline; M_12mo = verbal aggression used by mothers in to resolve conflicts at 12 months; C_12mo = verbal aggression used by children to resolve conflicts at 12 months.

*p<.05. **p<.01. ***p<.001.
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