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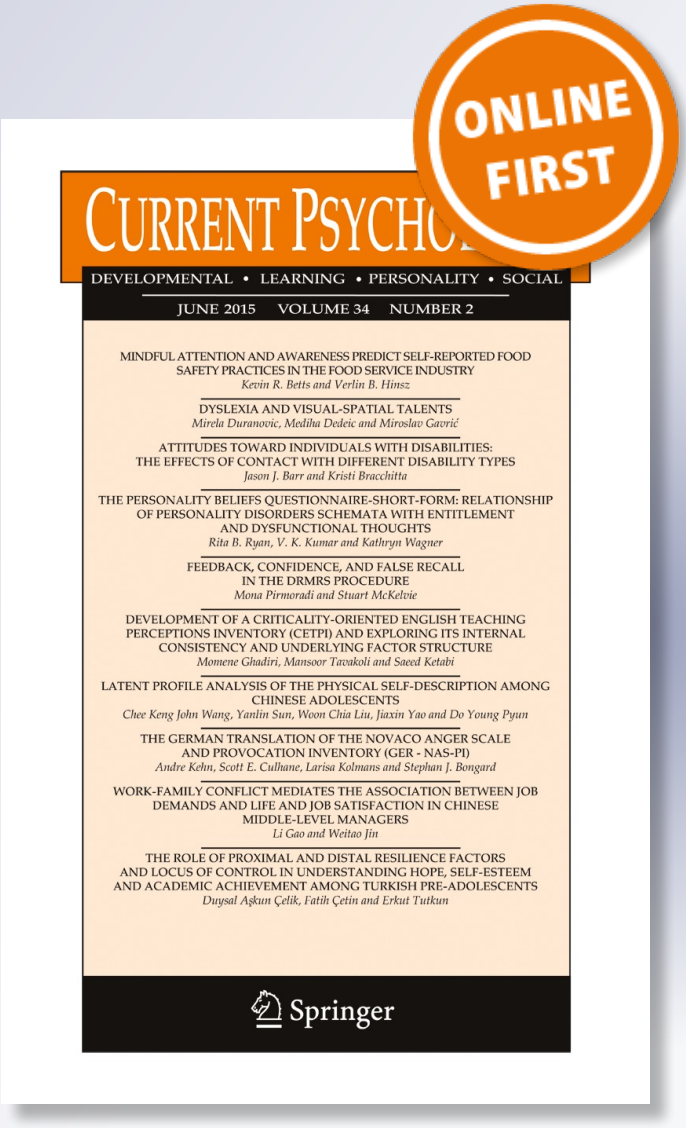

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Adolescents in Residential Treatment: Caregiver and Peer Predictors of Risk Behavior and Academic Performance

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Abstract The purpose of this research was to better understand the substance use and sexual risk taking behavior among high-risk adolescent populations placed in residential treatment facilities, including those in the foster care and juvenile justice systems. The primary predictors considered in this study included caregiver support, caregiver closeness, other adult support, adolescent self-disclosure/communication with caregiver, caregiver expectations about sexual behavior, and peer influence regards to drugs/alcohol and sexual behavior. Participants included 120 adolescent females in grades 7 to 12 (median grade=10; mean age 15.7 years), primarily African American (57.2 %) and White (29 %), in a residential treatment setting in a large urban area in the Midwest. Caregiver support and self-disclosure/communication with caregivers predicted condom use at most recent intercourse, but variables related to substance use were most consistently predictive of sexuality variables including onset and frequency of behavior. None of these support variables significantly predicted onset and frequency of substance use. Caregiver support was the contributing variable in predicting academic achievement.

Keywords Residential treatment · Foster care · Social support · Risk behavior · Alcohol · Drugs · Sexuality · Academic achievement

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Introduction

Various attempts have been made to predict and prevent adolescent risky behavior, including drug and alcohol use and engagement in early sexual activity, and to improve academic achievement among the general youth population (Hawkins et al. 1992; Kotchick et al. 2001; Lynskey and Hall 2002). Less in known about the compounding influences that can trigger problems within vulnerable populations such as court-involved youth (i.e., those in the foster care and/or juvenile justice systems). A host of interacting factors in various contexts have been found to predict these outcomes, but finding the one with the strongest influence is oftentimes difficult (Nation and Heflinger 2006).

Court-involved youth who have been placed in out-of-home care settings are more susceptible to engaging in risky behavior and experiencing academic failure (Vig et al. 2005). Anctil et al. (2007), Courtney and Dworsky (2005), and Burns et al. (2004) all noted that developmental problems, mental health issues, and medical problems are common in older children in foster care. Similarly, these issues have been found to occur in higher rates among delinquent youth (Teplin et al. 2002). Neglect and poor parenting are the most common reasons for children entering foster care (Vig et al. 2005) and negative peer influences are the most common reasons for youth to enter the juvenile justice system (Borum 2000); therefore, it is extremely important to consider caregiver, peer and other supports in order to understand the development of risky behavior and academic failure in court-involved youth.

Indeed, youth in foster care have been shown in some studies to use substances at high rates (Thompson and Auslander 2007; Vaughn et al. 2007; Somers et al. 2015) and 35 % of these youth met criteria for a substance use disorder (Vaughn et al. 2007). They are especially vulnerable to developing

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substance use problems (Aarons et al. 2008) and vulnerability increases as they reach the age of maturity and leave the system (Narendorf and McMillen 2010). Pilowsky and Wu (2006) found that teens in foster care were far more likely to have substance use disorders than their same-age, non-foster care counterparts.

Higher sexual risk behaviors are also linked with out of home living arrangements including foster care and placement in juvenile detention centers (Carpenter et al. 2001). A systematic review conducted by The National Campaign to Prevent Teen and Unplanned Pregnancy (2009) included some literature on foster care children and revealed that half of those who had been a part of the foster care system had sex before age 16, compared to only one-third of those who had never been in foster care. One study conducted in the State of Illinois found that on average, female foster youth give birth to their first child when they are 17.8 years old, although nearly one-third of these young mothers had given birth by age 16. Nearly one-fourth of the young mothers in this study had at least two children (Dworsky and DeCoursey 2009).

Academic achievement is also poorer for children in out of home care settings. High school graduation rates among foster youth range from a low of about one-third (e.g., McMillen and Tucker 1999; Scannapieco et al. 1995) to a high of roughly two-thirds (Courtney et al. 2007; Courtney and Dworsky 2005; Pecora et al. 2012). Frequent school and placement change is a major predictor of academic failure (Pecora 2012). According to the Adoption and Foster Care Analysis and Reporting System's (AFCARS) data, children in foster care on Sept. 30, 2010 had experienced an average of 3.1 placement changes since entry (Casey Family Programs 2011). Counting placement changes is complicated by several factors including the relationship between the number of moves and the length of time in foster care as well as the fact that moves are most likely to occur within 6 months of entry (Wulczyn and Chen 2010). These placement changes can disrupt education because they often result in a change of schools (Julianelle 2008) and the recovery time causes many children to lose ground (Yu et al. 2002).

Frequent school changes are only one of several barriers that can make it difficult for foster youth to graduate from high school. Compared to their peers in the general population, studies have shown that youth in foster care are less likely to perform at grade level, twice as likely to repeat a grade (Burley and Halpern 2001; Courtney et al. 2001, 2004; Pecora et al. 2005), and two to three times more likely to be enrolled in special education classes (Burley and Halpern 2001; Courtney et al. 2004, 2001; Macomber 2009; Shin and Poertner 2002; Smithgall et al. 2004; Pecora 2012). It seems clear that school placement instability (e.g., changing schools frequently) associated with multiple foster care placements has a significantly negative impact on academic, social, and behavioral functioning in this population (Belin et al. 2000). Students themselves report feeling not enough support and understanding to do well in school (e.g., Day et al. 2015; West et al. 2015) and staff report a significant impact of youths' background in how they cope with the learning environment (e.g., West et al. 2015).

Theoretical Framework

Multiple theories have been proposed and explored to help explain the impact that social influences such as family/caregivers and peers have on adolescent behavior. Sutherland (1939) proposed long ago in his differential association theory that delinquent behavior is learned by teens in small, informal groups via interpersonal and social influences, and that adolescents learn deviant behaviors particularly from peer and caregiver role models. Similarly, Akers (1977) theorized that adolescents imitate the attitudes and behaviors of their role models, thus forming their own thoughts about whether to engage in risky behavior as a result of being socially reinforced for those behaviors. Bandura's (1986) social cognitive/learning theory also purported that exposure to peer and caregiver role models shape personal expectations for consequences of behavior (vicarious learning).

In addition to social learning theories, our study is guided by concepts embedded in ecological theory (e.g., Bronfrenbrenner 1979). Indeed, across systems there is frequently not enough collaboration (e.g., Day et al. 2014), and from an ecological perspective, the microsystem is that level through which individuals are regularly exposed to immediate/proximal forces. Specifically, two primary sets of factors at the microsystem level are explored in this study, as they are most proximal to youth in residential care—caregivers and peers–and are described in the next two sections. As is described next, existing literature varies in its inclusion of a variety of different family configurations, but nevertheless all of this literature serves as a guide to studying these family predictor variables among adolescents in out-of-home care in the current study.

Caregiver and Peer Predictors of Drug and Alcohol Use

A "caregiver" can be defined in various ways. For the purposes of the current study, we included biological parent, foster parent, or other relatives with legal guardian status in the definition of "caregiver." In any definition, however, caregivers play a role in the lives of youth in out-of-home care. Indeed, family variables such as parental monitoring, attachment to mother, attachment to father, sibling drug use, adult drug use, and parental attitudes toward drug use predicted adolescent decisions to use drugs, though the role of peers was found to be strong as well (Bahr et al. 2005). A number of researchers have noted the importance of overall social support in deterring children from engaging in substance use

behaviors (Ahrens et al. 2008; Martin and Sifers 2012; Dumont and Provost 1999). For example, social support has been shown to buffer against negative outcomes (e.g., Somers et al. 2008), especially for high-risk populations in stressful situations (Preyde et al. 2011; Taussig et al. 2007; Day 2006). Ungar (2004) noted that caregivers such as youth workers and foster parents have a significant impact on high-risk youth, and that their influence is especially prominent for those disadvantaged due to poverty, ethnicity, poor academic performance, and physical/personal characteristics. The teens in Ungar's study reported that interaction with adults outside of their immediate home provided support and promoted the building of a positive self-concept and resilience. These teens were especially likely to seek out contact from adults outside of the home when their home environments were chaotic.

Studies have supported the fact that children who have parents/other caregivers who monitor their activities, whereabouts, and peers have lower rates of delinquency and substance use (Fletcher et al. 1995; Dishion and McMahon 1998). However, parental monitoring may have more to do with how much the child discloses rather than with parents' actual efforts to monitor (Stattin and Kerr 2000). A longitudinal study by Kerr et al. (2010) noted that parental knowledge is accounted for more by child self-disclosure than parents' own efforts at gaining information. Adolescents' willingness to disclose information determines parental knowledge more than actual parental monitoring tactics (Soenens et al. 2006). This body of literature has focused more on parents of children in intact families; studies on youth in out-of-home care settings are needed.

Caregiver messages about substance use are also important to consider. Andrews et al. (1993) found that adolescents who use substances earlier have mothers who use substances more frequently, fathers with a positive attitude toward the use of that specific substance, and parents who tend to less frequently caution the adolescent about substance use. In general, poor parenting has been shown to be the strongest predictor of mental health and behavioral problems in youth (Gerard and Buehler 1999).

Peer variables have also been shown to predict drug and alcohol use. In a study done by Thompson and Auslander (2007), it was found that skipping school and having peers who used marijuana and other substances were most strongly associated with substance use. In addition, studies have established that peer drug use is the strongest risk factor for adolescent substance use (Bahr et al. 2005). Such findings can be explained by social learning theory, which points out the influence of peer observation on individual behaviors (Bandura 1986). In other words, watching a peer say no to drugs can increase one's self-efficacy.

Caregiver and Peer Predictors of Risky Sexual Behavior

The bulk of research assessing caregiver and peer predictors of risky sexual behavior has focused on parents and teens in intact families (children living with biological parents); expansion to out-of-home care groups is warranted. Risky sexual behavior (e.g., less contraception, more partners, earlier age of first intercourse, etc.) is associated with communication about sexuality between parents and adolescents, although findings across studies vary (e.g., see review by Miller 2002; Somers and Paulson 2000). Some studies have shown that communication matter (Jaccard and Dittus 2000; Jaccard et al. 1996; Miller et al. 1998), while others have found no correlations (Newcomer and Udry 1985). The inconsistency in findings is likely best explained by variations in what exactly was discussed between the teenagers and their parents in regards to communication about the topic of sex (Newcomer and Udry 1985).

Parent-adolescent closeness appears to be a more consistent correlate of adolescents' sexual behavior over years of research (e.g., Fox 1981; Papini et al. 1988; Jaccard et al. 1996; Miller 2002; Resnick et al. 1997; Weinstein and Thornton 1989). Findings from the National Longitudinal Study of Adolescent Health (Add Health) indicated that teenagers reported lower instances of sexual behaviors during the year they reported having a fulfilling relationship with their mother (Jaccard and Dittus 2000). Additionally, in another study, when adolescents in the child welfare system felt close to their caregiver, they were more likely to use protection when having sexual intercourse (James et al. 2009). Further exploration is needed with court-involved youth.

Parental explicit communication of their expectations for their adolescent's sexual behavior is essential for healthy sexual behavior choices, as is teens' perceptions of how parents feel about them engaging in sex (Somers and Anagurthi 2014). For example, with mothers, teens' perceptions of how mothers feel has been found to be a better indicator of sexual outcomes, such as intercourse, rather than how the mother may actually feel about sexual behaviors (Jaccard and Dittus 2000). When teens believed their mother did not approve of them engaging in sexual behavior, they were more likely to postpone the initial age of sexual intercourse (Mcneely et al. 2002).

Similarly, peer predictors of adolescent risky sexual behavior are noteworthy. Association with sexually active peers is, in itself, shown to be a predictor of adolescent sexual behavior (Rew et al. 2011). In a study of more than 4000 sexually experienced adolescents, it was found that peers' sexual attitudes and behaviors predicted the number of nonromantic sexual partners someone had, thus indicating that peers are associated with risky behavior (Chen et al. 2010). These are correlational results, though, and a propensity for risky behavior may also drive the choice of peers. Directionality of

relations cannot be determined. Nonetheless, as with substance use, studies point to peers as playing a strong role in adolescents' decisions to engage in risky sexual behavior (Rew et al. 2011).

Caregiver and Peer Predictors of Academic Achievement

Resilience may be defined as the ability to respond actively and to steer positively through serious life challenges, stress, and trauma and to find ways to bounce back and thrive (Christiansen et al. 1997). For example, Christiansen et al. (1997) noted that resilient children are able to solve problems, be positive, work through challenges, and perceive that they have control over their lives. Children begin to learn skills of resiliency prior to entering school.

Although children are born with the capacity for resilience, it is not something they have or don't have, it is worked on throughout life (Best Start Resource Centre 2012). Unfortunately, for foster children and other court-involved youth, resilience is more challenging to accomplish. Consequently, they can benefit from a variety of supportive strategies. Active involvement of caregivers in a child's education may be one of the most important support strategies. Adult support and encouragement provide a foundation for the behaviors, attitudes, and social skills that children subsequently imitate. Frequent, positive interaction between family members and the school increases the chances of academic success, as one measure of resilience, for at-risk children (Christiansen et al. 1997). It has long been established that parental involvement in school and values toward achievement are important predictors of achievement (Paulson 1994).

A recent study explored whether problems in school adjustment can be observed in maltreated foster children as early as kindergarten, and whether caregiver involvement and inhibitory control can help mediate early school adjustment (Bruce et al. 2010). It was found that inhibitory control was an essential component for school success and that maltreated foster children often have deficits with inhibitory or self-control. They also tended to have little caregiver involvement, such as promotion of literacy, homework, and contact with teachers. Caregiver support was also shown to be a predictor of academic success. Foster children frequently change caregivers, which interferes with effective and consistent caregiver involvement in their education. Although this study did not control for exposure to preschool, results nonetheless indicated that foster children showed lower academic and social-emotional competence in kindergarten and first grade than did non-maltreated peers. Without interventions, the deficits will likely lead to a weak academic long term trajectory.

There are studies on peer predictors of achievement as well. Association with positive peers has a significant influence on achievement (Stewart 2008). More specifically, a study of eighth-grade students found that peer GPA and achievement were both positively related to individuals' test scores in four different countries (Liu 2012). Interestingly enough, "negative" peers also influence academic performance. Involvement with peers who are substance users has been suggested to adversely impact academic achievement (Brandon et al. 2000). Social learning theory explains peer influence via concepts of observation and modeling, indicating that the same mechanisms may be at play in the relationship between peers and individual achievement (Bandura 1986).

The Current Study

The majority of previous research on the substance use and sexual risk taking behavior among high-risk adolescent populations has not included adolescents (including foster care and juvenile delinquents) placed in residential treatment facilities. Thus, understanding factors that have an effect especially on the development of these vulnerable populations placed in out-of-home care settings is extremely important for prevention efforts and future outcomes. For that reason, the target population for this study was adolescent girls who were placed out-of-home, specifically those residing in a residential treatment care facility. This school is female only and thus males could not be studied in this data collection. The primary predictors considered in this study include caregiver support, caregiver closeness, other adult support, adolescent self-disclosure/communication with caregiver, caregiver expectations about sexual behavior, and peer influence regards to drugs/alcohol and sexual behavior. These relationship variables were all chosen so to better understand the role that relationships with parents/caregivers can have in adolescents placed in residential treatment facilities, foster care, or juvenile detention. A goal was to explore associations with substance use and sexual risky behaviors as well as academic achievement.

Specifically, the questions analyzed were: 1) How well does self-disclosure/ communication, caregiver support, other adult support, caregiver expectations about sexuality, caregiver closeness, and peer abstinence explain variance in a) age of onset of sexual intercourse, b) total number of sexual partners, c) frequency of substance use, d) age of onset of drinking (first getting drunk), and e) academic achievement levels?; 2) how well does substance use and drinking behavior explain variance in academic achievement above and beyond the other variables noted above?

This is an area where research is lacking. It is expected that results of the current study will at the very least allow for residential treatment facilities (RTFs) to become more educated on the potentially positive effects that solid relationships can have on this population of adolescents, as well as to modify training efforts to include relationship building as a mandatory component for new workers who accept employment in RTFs and continuing education requirements for the more seasoned workforce.

Method

Participants

Participants included 120 adolescent females in grades 7 to 12, with the majority of participants being in 9-11th grade (median grade=10). This is a female-only school and only this school was solicited for participation. The mean age of the adolescents was approximately 15.7 years (range=12 through 18 years). The participants were all placed in a residential treatment setting located in a large urban area of the mid-western United States. The majority of the female participants were African American (57.2 %), followed by White (29 %), with the remainder a mixture of other backgrounds. Most participants (n=80) reported experiencing between 1 and 3 placements in a foster home or other out-of-home care setting. More than half of the participants (52.5 %) were currently in the foster care system at the time of the study. The remaining participants had open, active juvenile delinquency cases whose court-ordered disposition required placement in an out-of-home care facility. The vast majority of these students are reportedly known to also have one or more comorbid mental health diagnoses.

Measures

First, a set of demographic questions was asked to provide information about each participant's age, race, and grade. Following that, the questionnaire that was administered was a modified version of the Centers for Disease Control and Prevention's Youth Risk Behavior Survey (YRBS) (2011). It was modified through a state work group with representation from the Michigan Department of Human Services, Department of Community Mental Health, and Department of Education). Thus, most of the items on this survey were taken verbatim from these works by others. The modified YRBS (2011) included a series of 70 questions about students' behaviors in six major areas that were most likely contributing factors to negative outcomes for adolescents. It is constructed of individual items to measure each area. The authors judged the face validity of each item to be adequate, as each item appeared straightforward in measuring what was intended. Additional questions related to foster care status were developed by the authors in an attempt to better understand the unique challenges and needs of these court-involved youth. Additional items added to the YRBS included academic success, foster care placement history (i.e., the number of out-of-home care placements experienced, probation history, whether student was in foster care or juvenile justice), verbal praise from caregivers, and caregivers who express pride for their children. Questions used from this survey for analysis are listed below. All questions are taken from the youths' perspectives. Family of origin and caregiver/foster family were not defined for them.

Covariates Age, race, and number of foster care placements were used as covariates. Each student had at least one foster care placement, as their placement in the residential facility was considered as such.

Caregiver Support The following yes/no item was used to measure this construct: "Do

You have an adult in your family in the home that you can turn to for support?," 1=yes, 2=no.

Caregiver Closeness With Adolescent This construct was measured with the item "Do you feel very close to your caregiver/foster family?" Responses were made on a four point scale ranging from 1=NO! 2=no, 3=yes, and 4=YES!.

Adolescent Self-Disclosure/Communication With Caregiver This was measured with the item "Do you share your thoughts and feelings with your caregiver/foster family?" Responses were made on a four point scale ranging from 1=NO!, 2=no, 3=yes, and 4=YES!.

Caregiver Expression of Expectations About Sexual Behavior "Have your parents or other adults in your family ever talked with you about what they expect you to do or not to do when it comes to sex?" was used. Responses were made on the scale, 1=yes, 2=not sure, 3=no.

Other Social Support Out of home social support was assessed with the item "Do you have an adult other than a family member that you are able to turn to for support that is out of school?" Participants responded to this item by circling either "yes" or "no," 1=yes, 2=no.

Peer Drug/Alcohol Abstinence The presence of peers who say "no" to drug use was assessed by looking at the number of peers that participants had that, within the past year, had committed to staying drug free. The item specifically stated, "Think about your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have made a commitment to stay drug free?" Participants answered this item using a scale ranging from 1 to 5, with 1 being, "none of my friends" and 5 being, "4 or more of my friends." Participants responded to this item by circling the letter that corresponded with their answer.

Peer Sexual Abstinence The question was: Think about your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have made a commitment to saying no to sexual intercourse?" Response

options and scoring were identical to peer drug/alcohol abstinence above.

Sexual Behavior Variables Previous sexual experience was assessed by a question stating, "Have you ever had sexual intercourse?" The response options were 1=yes, 2=no. The age at which the adolescent first engaged in sexual intercourse was assessed based on the question, "How old were you when you had sexual intercourse for the first time?" For those who have had sex, response options ranged on a seven point scale from "age 11 or younger" to "17 years or older". The overall number of sexual partners each participant had ever had was measured with the question: "During your life, with how many people have you had sexual intercourse?" Response options were made up of individual numbers ranging from "never had sex" to "with 6 people or more". Condom use during last intercourse was the fourth measure, with the item "The last time you had sexual intercourse, did you or your partner use a condom?" and 1=yes, 2=no.

Substance use Variables Participants' age of onset for drug/alcohol use was measured using two separate items from the YRBS. The items included: How old were you when you: 1) "Had your first drink of alcohol other than a few sips?" an 2) "Got drunk for the first time?" Participants responded to these two items using a scale of 1–11, with 1 being (never did it) and 11 being (17 years old or older).

Frequency of substance use prior to entering residential treatment was measured by the following items: "Before you came to the residential facility, how frequently did you do each of the following things?" 1) Smoke cigarettes?, 2) Have at least one drink of alcohol? (more than just a few sips), 3) Have 5 or more drinks of alcohol in a row, that is, within a couple of hours?, and 4) Use marijuana? Participants responded to these four items using a scale of 1–5, with 1 being "never" and 5 being "every day or mostly every day." Responses were summed and higher scores reflect more frequent use of

Academic Performance Academic success was measured with the following question on the YRBS: "During the past 12 months, how would you describe your grades in school?" Responses were made on a 5 point scale ranging from 5="mostly As" to 1="mostly Fs".

Procedure

All 179 students in the school were invited to participate. First, parental/caregiver consent was obtained by the researchers independent of the school—youth in the Juvenile Justice system had parents sign and youth in the foster care system had caseworkers sign. After that, the girls were fully informed about the study through information sheets and assent forms also read verbally to them. They then made their own decision with regards to participation by giving their assent to the researchers. Few students refused to complete the questionnaire (less than 3 %), for a total inclusion rate of 67 %. The students completed the survey under the supervision of one or more members of the research team (PI, co-PI, and research assistants). The surveys took between 20 and 40 min. Any students who struggled with reading were given the option to have the questions read to them. Survey completion occurred in small groups during separate sessions within individual classrooms located at the public charter school, which shares the campus of the RTF, and where all the RTF youth were enrolled. Students were given chips and a drink to eat as well as a tee shirt whether or not they participated in the research. This study included a full board review and approval by the university human investigation committee.

Data Analysis

SPSS was used to analyze data. Correlations and Hierarchical Linear Regression Analyses were utilized. Sample size was deemed adequate based on a minimum of 10 participants per variable used in Hierarchical Linear Regression Analyses.

Results

The purpose of this study was to examine predictors of academic functioning and sexual and drug/alcohol risk taking behavior in a sample of female adolescents in residential treatment. Means and standard deviations for all variables are included in Table 1. These data show that the sample is mostly sexually active, but only half use contraception. Many have used substances. Academic achievement is diverse, as is relationships with and support from others. Correlations among continuous variables are included in Table 2.

Hierarchical Linear Regression Analyses were selected as most appropriate for answering the questions for this study given what is considered to be the continuous nature of the criterion variables (e.g., Pedhazur and Schmelkin 1991). In all analyses, the following variables were entered as control variables on step one: Number of foster care placements, age, and race. Analyses are organized below around the three categories of criterion variables: Sexual risk behavior, drug and alcohol risk behavior, and academic functioning.

Sexual Risk Behavior

The first analyses included age of onset of sexual intercourse as the criterion variable. With self-disclosure/communication, caregiver support, other adult support, caregiver expectations about sexuality, caregiver closeness, and peer abstinence as predictors, the variance in age of onset explained was

Table 1 Descriptive Statistics for all Variables

Variable	Mean	SD	Min.	Max.
Caregiver support*	1.17	0.38	1.00	2.00
Caregiver closeness	2.74	1.16	1.00	4.00
Self-disclosure/communication	2.56	1.10	1.00	4.00
Caregiver expectations about sex	2.56	0.79	1.00	3.00
Other social support*	1.13	0.34	1.00	2.00
Peer drug/alcohol abstinence	2.65	1.45	1.00	5.00
Peer sexual abstinence	1.84	1.30	1.00	5.00
Sexual intercourse experience*	1.17	0.38	1.00	2.00
Sexual behavior onset (age)	3.64	1.71	1.00	7.00
Number of sexual partners	3.93	2.08	1.00	7.00
Condom use at last intercourse*	1.51	0.50	1.00	2.00
Substance use onset – few sips	5.34	3.29	1.00	11.00
Substance use onset – getting drunk	5.49	3.48	1.00	11.00
Freq. all substance use prior to entering residential treatment	2.61	1.32	1.00	5.00
Academic Performance	3.61	0.99	1.00	5.00

*These yes/no response options are dichotomous variables. The means indicate the proportion of students leaning toward 1=yes versus 2=no. The frequency count for caregiver support was n=96 (Yes) and n=20 (No). The frequency count for other social support was n=14 (Yes) and n=95 (No). The frequency count for intercourse experience was n=99 (Yes) and n=20 (No). The frequency count for condom use was n=49 (Yes) and n=51(No)

statistically significant (R^2=0.21, p<0.05). However, although the general combination of variables was statistically significant, no individual variables contributed above others to rise to individual levels of significance (all Beta weights non-significant). When alcohol use was included, there was also a statistically significant proportion of variance in sexual behavior onset explained (R^2=0.29, p<0.05), and it was drank alcohol more than a few sips that significantly contributed to the model (B=0.31, p<0.05)

In another regression model, these variables explained a statistically significant proportion of variance in these youths' total number of sexual partners (R^2=0.39, p<0.001). One particular variable, age of first getting drunk, appears to have made significant contribution to this model (B=0.39, p<−0.05). The fourth analysis included use of condom during sex as the criterion variable and results were significant (R^2= 0.27, p<0.05). One variable, caregiver support, contributed significantly to this model (B=0.17, p<−0.05) and one, self-disclosure/communication, approached significance (B=0.08, p=0.058).

Drug and Alcohol Risk Behavior

In the first analysis, frequency of substance use was the criterion variable with caregiver support, caregiver closeness, peer abstinence, self-disclosure/communication, and other adult support explained significant proportions of variance in the frequency of substance use (R^2=0.08, p>0.05). None of these variables made any significant contribution to the model.

This was followed by an analysis that included the age of first getting drunk as the criterion variable. The predictor variables of caregiver support, caregiver closeness, peers' substance abstinence, self-disclosure/communication with caregivers, and other adult support were not statistically significant in predicting this criterion variable (R^2=0.08, p>0.05).

Academic Functioning Outcomes

Regression analyses revealed that a statistically significant proportion of variance in academic achievement (R^2=0.21, p<0.05) was explained, and caregiver support was the variable that made a significant contribution to the model (B= 0.26, p<0.05). Two additional analyses were run to add at step three the role that substance use frequency had and whether or not they had ever been drunk may have contributed to

Table 2 Correlations among variables

	Few sips alcohol	Getting drunk	Freq. all substances	Sexual beh onset	Sexual behavior freq.	Academics
Age	0.344***	0.225*	0.100	0.375***	−0.085	−0.031
Race	−0.169	−0.054	0.148	−0.139	0.038	0.018
Number of foster care placements	−0.221*	−0.148	−0.102	−0.041	0.033	0.145
Caregiver Support	−0.031	0.004	−0.124	0.180	0.137	−0.083
Caregiver Closeness	0.045	0.057	−0.060	−0.082	0.014	-0.234*
Self-disclosure/Communication	−0.018	−0.064	−0.123	−0.068	−0.002	−0.235*
Caregiver expectations about sex	0.088	−0.007	−0.133	−0.019	−0.149	−0.242*
Other Social Support	0.008	0.004	0.092	0.041	0.154	0.168
Peer Drug/Alcohol Abstinence	−0.029	−0.133	−0.203*	0.094	−0.102	0.043
Peer sexual abstinence	−0.067	−0.015	−0.092	0.009	−0.070	−0.031

***=p<0.001, **=p<0.01, *=p<0.05

variance in academic achievement. Those factors did not contribute above and beyond the variance already explained by the covariates.

Discussion

The purpose of this study was to determine the associations between multiple interpersonal variables and the sexual behavior, substance use behavior, and academic performance in a group of teenage girls at a residential treatment care facility in a large urban area in the Midwest. In particular, the researchers were interested in determining such relationships in an attempt to inform efforts aimed at the prevention of risky behaviors in foster care and court-involved adolescents.

Overall, there were several noteworthy findings. Some are expected, including that caregiver support was associated with better school grades and use of condom during most recent sex. This is consistent with previous research (e.g., James et al. 2009) and likely reflects modeling and imitation inherent to social learning theory. However, caregiver support or closeness was unrelated to other important variables such as drug and alcohol use. This was not expected, based on prior research that found support by and closeness with caregivers to be associated with less drug and alcohol use (e.g., Ahrens et al. 2008; Martin and Sifers 2012). While caregiver closeness is clearly important, for the variables studied here, it is only a small portion of the equation. For this sample of girls, their relatively unstable family lives, prior to arriving at the treatment center, may have done great damage to their "family ties" and prevented the development of strong ties with their caregivers of origin and their subsequent caregivers that followed. This needs further explicit exploration in research but, in general, this supports our conceptualizing through ecological theory in that multiple contexts in youths' lives can have varying degrees of impact on them. However, it may also be that the single-item nature of the YRBS measure used in this study is not an ideal representation of caregiver support, which is a multidimensional construct. More research will help tease this out.

It should be noted that the established relationship between caregiver closeness/support and academic achievement is likely associated at least in part with the focus given to academics in the residential treatment center. Much attention is given to providing the girls with good schooling, and with staff who provide them with the support and encouragement needed to succeed. This does not seem to be the case with other variables; sexual risky behaviors and substance use behavior are missing this link. This suggests that the same focus given to educational achievement is not given to other relatively more "social" issues within the treatment center.

The role of alcohol in some of these findings is noteworthy. Sexual behavior onset and the number of sexual partners were all associated with alcohol and substance use. Indeed, these things have been related in other research on this population (e.g., Somers et al. 2015). Having a few sips of alcohol was related to the age of onset of sexual behavior. This can be explained by the fact that in general, adolescents who drink alcohol are more likely to engage in sexual behavior, regardless of how much they have to drink. The frequency of all substance use was also associated with ever having/not having sex, and getting drunk contributed significantly to the number of sexual partners. Possible reasons for this finding may relate to the impact of substances on judgment and inhibitions. Mood-altering drugs or disinhibiting substances such as alcohol have the potential to lead individuals to make risky decisions, such as those relating to both early and unsafe sexual encounters.

Here, the lack of a relationship between caregiver support/closeness and drug/alcohol use should be noted. Given that the girls surveyed have had little stability in their "family" lives, they may lack a strong support system from parents/caregivers. Potential explanations for this include their limited access to caregivers outside of the treatment facility. Alternately, it could be that the instability in their lives prevented these girls from developing strong ties to their most recent caregivers, and that contributed to the lack of association with substance use. The lack of strong caregiver support/closeness, coupled with strong ties to peers with a negative influence may inevitably contribute to the decision to engage in risky behavior. This group of girls reported having strong peer relationships, suggesting that "peer influence" (with regards to substance use and sexual behavior) may be particularly strong for them, assuming the absence of strong relationships with caregivers. This is one of the most salient implications of our emphasis on social learning theory, in that peer "influence" through modeling and imitation can be powerful in shaping one's personal behaviors. These results also support the notions inherent to "ecological theory, in that influences occur from multiple contexts in youths' lives and strengths in one may compensate for relative weaknesses in another.

Limitations of the Study

Limitations of this study include a relatively small sample. Also, although the measures provide important information in and of themselves, we also had instrumentation limitations bound by many single item measures, some of which are dichotomous (yes/no). Also, there was a variety of response options that possibly required more attention to detail than what would be required if the survey questions were more uniform in structure. These can be improved in future studies. Despite these limitations, to our knowledge, the present study is one of only a few to examine the relationship between youths' perceptions of caregivers and youths' risky behavior among court involved youth in out-of-home care settings. The themes observed are noteworthy and can be utilized to begin planning for

interventions with this unique population. These girls have unique historical and current circumstances that warrant particular consideration of how best to help them have healthier academic outcomes and less sexual and alcohol/drug behaviors that commonly put them at risk of poorer general life outcomes. Nonetheless, it is also important for future research to study males who are similarly in residential treatment to determine if the dynamics hold in the same way for them.

Implications for Policy and Practice

The foster care system should be a refuge for children who've endured neglect or abuse, providing a fresh start after years of dysfunction. But often, adolescents get drawn into a pattern of risky behavior that threatens their well-being and future success. They experiment with alcohol and other drugs, and have sex too early and often, leading to sexually transmitted diseases, pregnancy or both. Additional training is needed for child welfare and court professionals and foster parents on risk-taking behavior found in this population. These service providers and formal caretakers should know how to access resources to reduce the incidence of such behavior when working with high-risk teens. This includes the provision of substance abuse prevention and treatment programs, sex education and access to reproductive health services, including information on how to use and access contraceptives, to all boys and girls in out-of-home care. These efforts must target both sexes to reduce high-risk sexual behaviors, enable good sexual decision making and acquaint all on how to access these and other health promotion and prevention programs.

Engagement in risk taking behaviors at current levels indicate that court-involved youth could benefit from increased access to health promotion, rehabilitation, and prevention programming. In addition to access to these more formal services, court-involved youth could also benefit from access to informal support like mentors. Many of the teens in out-of-home care have not had the opportunity to experience positive role models. Effective mentoring programs will require investments in staffing for recruitment, training, and coordination. In addition to mentors, court-involved youth could also benefit from the promotion of connections to other permanent adults (biological family members and adopted kin) with whom stability and continuity could be sustained in the transition to adulthood. There are promising strategies that have been used to promote informal relationships to help with transitions (e.g., Childfocus 2007).

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