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The Behavioral Health Needs of First-Time Offending Justice-Involved Youth: Substance Use, Sexual Risk and Mental Health

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Abstract

This study examines substance use, emotional/behavioral symptoms and sexual risk among first-time offending, court-involved, non-incarcerated (FTO-CINI) youth. Youth and caregivers (N=423) completed tablet-based assessments. By time of first justice contact (average 14.5 years old), 49% used substances, 40% were sexually active and 33% reported both. Youth with co-occurring substance use and sexual risk had more emotional/behavioral symptoms; youth with delinquent offenses and females had greater co-occurring risk. Time of first offense is a critical period to intervene upon high rates of mental health need for those with co-occurring substance use and sexual risk to prevent poor health and legal outcomes.

Keywords

adolescent; substance use; mental health; sexual risk; HIV/STIs; juvenile justice

Estimates indicate that over 2 million youth under the age of 18 are arrested annually (Puzzanchera, 2009) and 31 million are under juvenile court jurisdiction (Puzzanchera, 2011). Involvement in the juvenile justice system (JJS) is associated with a variety of adverse health outcomes, such as substance use (Dembo et al., 2007), psychiatric symptoms (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002), sexual risk behavior (Elkington et al., 2008; Teplin, Mericle, McClelland, & Abram, 2003) and sexually transmitted infections

(STIs) (Belenko et al., 2008). Most past research has focused on the high-risk subsample of incarcerated juvenile offenders but little is known about the nearly 80% (Furdella & Puzzanchera, 2015) of non-detained youth. Examining the rates of drug use, HIV/STI risk behavior and emotional/behavioral symptoms among juveniles at their earliest point of juvenile court contact will critically inform the development and implementation of *early* public health screening, prevention and treatment interventions.

Studies involving juvenile detainee samples document high rates of drug and alcohol use, psychiatric symptoms and HIV/STI risk behaviors (Abram, Teplin, McClelland, & Dulcan, 2003; McClelland, Elkington, Teplin, & Abram, 2004; Romero et al., 2007; Teplin et al., 2002). Nearly half of juvenile detainees have one or more substance use disorders (Mauricio et al., 2009). Estimates of diagnosable psychiatric disorders of detained juvenile offenders range between 50%–70% (Abram et al., 2003; Fazel, Doll, & Långström, 2008; Teplin et al., 2002; Wasserman, Ko, & McReynolds, 2004). The likelihood of acquiring HIV/STIs is also substantially increased among justice-involved youth due to high rates of sexual activity, and problems are compounded when these behaviors co-occur (Conrad, Queenan, Brown, & Tolou-Shams, 2017; Tolou-Shams, Harrison, Hirschtritt, Dauria, & Barr-Walker, 2019). Mental health problems are linked to criminogenic risk and when paired with substance use, contribute to poor outcomes (Doherty, Green, & Ensminger, 2008; Elkington et al., 2008; Schubert, Mulvey, & Glasheen, 2011). Studies of juvenile detainees with co-occurring substance use and psychiatric concerns demonstrate that most are sexually active and more than half have had multiple partners and unprotected sex during the past month (Teplin et al., 2005, 2003).

Current Study and Theoretical Framework

Project EPICC (Epidemiological Project Involving Children in the Court) is a two-year longitudinal study of male and female first-time offending, court-involved, non-incarcerated (FTO-CINI) youth assessed within a month of initial juvenile court contact and uses ecodevelopmental theory as guiding framework, which has been widely used in the HIV prevention literature and with substance using, delinquent youth (Szapocznik & Coatsworth, 1999). Ecodevelopmental theory (Szapocznik & Coatsworth, 1999) extends Bronfenbrenner's ecological model of human development (i.e., micro-, meso-, exo- and macro-system influences on behavior; Bronfenbrenner, 1986) by providing a framework to understand risk and protective factors for adolescent substance use, psychiatric symptoms and HIV/STI risk behavior, while accounting for the role of different contexts and developmental processes.

Prior community-based study pathway model studies, such as those within the Office of Juvenile Justice and Delinquency Prevention's program of Research on Causes and Correlates of Delinquency (e.g. Pittsburgh Youth Study, the Denver Study; Loeber & Hay, 1997; Loeber, Keenan, & Zhang, 1997; Loeber et al., 1993), help identify "at-risk" youth to develop primary prevention interventions prior to the onset of delinquency; these youth may or may not ever come into contact with the justice system. Tertiary prevention studies, such as the Pathways to Desistance study (Mulvey et al., 2004), provide data on factors that may reduce recidivism among the most violent and dangerous of juvenile offenders and are not

designed to capture juvenile risk behavior trajectories *prior* to their severe and violent criminal offenses. Teplin and colleagues' seminal juvenile detainee studies have highlighted the importance of studying HIV/STI risk behavior among juvenile offenders to prevent infection into adulthood and focus on detention and community re-entry (Teplin et al., 2005, 2003). To date, there is one other study, aside from Project EPICC, with published data that examines similar relationships and trajectories among FTO offenders, but differs from Project EPICC by only including FTO male offenders arrested for a range of low-level offenses and does not include a focus on HIV/STI risk behavior (Fine, Mahler, Steinberg, Frick, & Cauffman, 2017; Fine, Steinberg, Frick, & Cauffman, 2016). To fill an essential gap in the field, Project EPICC uses ecodevelopmental theory to achieve two primary aims: 1) examining (from caregiver and juvenile perspectives) initial risk behavior profiles subsequent to the first point of contact with the juvenile justice system and 2) identifying multi-level factors associated with those initial profiles to inform intervention development in a setting that lacks evidence-based programming (Schwalbe, Gearing, MacKenzie, Brewer, & Ibrahim, 2012). Distinct from other studies, Project EPICC focuses on a *secondary prevention* perspective by measuring youth's risk behaviors from the time of very first court contact, which may serve as "turning point" for substance use and co-occurring risk behaviors (Hussong, Curran, Moffitt, & Caspi, 2008). This information is urgently needed given that most diversion programs for CINI youth do not improve behavioral health outcomes or reduce recidivism (Schwalbe et al., 2012).

The current analysis focuses on the first ecodevelopmental theory layer, the microsystem, that encompasses the youth (e.g., their emotional and behavioral health functioning) and their relationships within immediate social contexts, including peers and family. We sought to fill a gap in the literature by examining youths' initial risk behavior profiles and intersecting risks. Literature supports the importance of assessment and intervention for sexual and reproductive health needs of justice-involved youth (Tam et al., 2019), but only a few studies of justice-involved youth have incorporated measurement of substance use and HIV risk (Tolou-Shams et al., 2019). Of those studies, rates of co-occurrence of these behaviors among justice-involved youth is high (e.g., Abram, Stokes, Welty, Aaby, & Teplin, 2017; Tolou-Shams, Brown, Gordon, & Fernandez, 2007; Tolou-Shams, Stewart, Fasciano, & Brown, 2010; Tolou-Shams et al., 2017). Yet, to our knowledge, there are no published studies to inform the field as to whether and how co-occurring substance use *and* HIV/STI risk behaviors may potentiate need for mental health intervention *at time of first offense*. Understanding how these behavioral risk factors co-occur to promote or protect against mental health needs at this early justice contact can inform the development of resource-efficient, multi-component integrated interventions to potentially offset poor public health and legal outcomes for these underserved youth.

Hypotheses

This paper presents baseline Project EPICC data collected between June 2014-July 2016 from 423 FTO-CINI youth and involved caregiver dyads, with specific emphasis on demographics and youth risk behaviors (e.g., substance use and HIV/STI risk) and mental health needs. The mental health focus includes emotional symptoms, such as trauma and affect dysregulation, and behavioral symptoms such as conduct and delinquency because

these emotional and behavioral symptoms have been most commonly studied in other samples of justice-involved youth and tied to health risk behaviors such as substance use and risky sexual activity (McReynolds & Wasserman, 2011; Tolou-Shams et al., 2008; Tolou-Shams et al., 2011; Tossone, Wheeler, Butcher, & Kretschmar, 2017). We hypothesized that FTO-CINI youth would report higher rates of drug and alcohol use, sexual (HIV/STI) risk behaviors, and emotional/behavioral symptoms than those published among general adolescent and community-based delinquency samples, but below that reported on detained youth. Among FTO-CINI youth, we hypothesized that those with co-occurring substance use and sexual risk behaviors would report higher rates of recent emotional/behavioral symptoms than all others. We also hypothesized that FTO-CINI girls would show heightened risk on all outcomes relative to FTO-CINI boys consistent with prior literature demonstrating unique, gender-specific needs for justice-involved girls (Conrad et al., 2017; Dembo et al., 2017; Holzer, Oh, Salas-Wright, Vaughn, & Landess, 2018).

Methods

Sampling and Recruitment Procedures

Participants.—A total of 423 FTO-CINI youth and caregiver dyads were enrolled. Youth, ages 12 to 18, and caregivers were approached for study participation if the juvenile had an open status and/or delinquent petition filed through a large Family Court in the Northeastern region of the United States (US). Status petitions were defined as those filed for an offense that would typically not be considered illegal if an adult committed the same offense (e.g., truancy, alcohol use, curfew). Delinquency petitions were defined as those filed for offenses that are considered illicit regardless of age (e.g., breaking and entering, assault). Of 423 dyads, 194 (46%) had a first-time status offense (FTO-status) and 229 (54%) had a first-time delinquent offense (FTO-delinquent). FTO-CINI girls with a delinquent FTO were oversampled to have sufficient power to conduct male-female comparisons.

Exclusion criteria.—Study exclusion criteria included being a repeat offender (at time of initial recruitment), outside of the 12–18 year old age range at the initial court intake appointment, juvenile or caregiver cognitive impairment that would preclude ability to complete assessment, and/or caregiver unable or unwilling to participate or had not lived with the youth for at least the prior six months.

Retention and Assessment Procedures

All caregivers of FTO-CINI youth were sent a study flyer along with the standard court appointment date notification letter and then approached in the court setting for study participation. Interested youth and families were screened for eligibility in a private space at the court and assent and consent was obtained off-site (home, private community space or research lab), when appropriate. To enhance engagement and retention, we used a variety of strategies including: obtaining a locator form in which youth and caregiver provided contact info of up to 5 individuals who will always know where they are and could help us locate them in the future; scheduling subsequent appointments at the time of the prior assessment; sending out weekly reminder emails, texts (and making phone calls as needed if no response to texts) to remind youth and caregivers of appointments and make any relevant changes to

locator information; obtaining releases of information from youth and caregivers for permission to contact the court to help us locate them; reminding youth and caregivers of home or community-based visit options for assessment; sending birthday and holiday cards from the project, in order to enhance recall and familiarity with the project; mail or drop off to hard-to-reach families' homes a personalized letter from study staff, that would include study contact information and the scheduled follow-up appointment (if applicable). We also provided project pens and other items with the project logo and name to youth, caregivers and court stakeholders. These items served as reminders of participation in the study for both families and system stakeholders. Lastly, we set up a profile on the social networks, Facebook, Twitter and Instagram only to notify participants about their appointments. We did not “friend” or “follow” any of the participants or accept the “friending” of participants. The page contained the project’s contact information for participants who needed to schedule appointments but were not reachable by text, phone or in-person. Our page did not reveal the nature of the study, but was recognizable to participants by its logo. The Principal Investigator’s university and collaborating sites’ Institutional Review Boards approved all recruitment and study procedures.

Youth and caregivers completed separate assessments (2 hours per assessment) using tablet-based, audio-assisted computerized assessment (ACASI) in English and Spanish (parent-only). ACASI has been shown to improve reliability of self-report (Romer et al., 1997), is easy to administer and is time and cost-effective. The majority of assessments were conducted in private space the participants’ homes, at the research offices, the courthouse, and on occasion, at other community locations (e.g. library or coffee shop). Caregivers and youth were separated for administration when it was logistically possible—and when not possible (e.g., due to being in a small home, in a single room coffee shop), they were positioned at opposite ends of the room so that neither would be directly distracted by the other’s presence or able to see any responses on the tablet.

Measures

Self-reported baseline measures assessed basic demographics, school and treatment history along with lifetime and recent (past 120 days) substance use, sexual risk behaviors and emotional/behavioral symptoms.

Youth and caregiver demographics, youth academic and treatment history.—

Demographics included, but were not limited to, age, gender, race, ethnicity and sexual orientation. The *Arrest and Treatment History (ATH) questionnaire* (developed for this study) queried mental health and substance use treatment history, treatment needs and utilization, state agency (e.g., out-of-home placement) and legal involvement. Self-report data were also collected on current school status, grades, history of repeated grades and receipt of special education services (e.g., individualized education plan [IEP]).

Youth substance use and sexual (HIV/STI) risk behaviors.—The *Adolescent Risk Behavior Assessment (ARBA)* (Donenberg, Emerson, Bryant, Wilson, & Weber-Shifrin, 2001) assesses type of sexual behavior (i.e., oral, vaginal or anal), frequency of condom use and intercourse (e.g., condom use at last sexual intercourse), age of sexual debut, number of

sex partners, and substance use by self and/or partner preceding and/or during sex. This measure also included self-reported (lifetime and past 120 days) nicotine, alcohol, marijuana and other drug use (e.g. cocaine, prescription drugs) with respect to quantity, frequency, and other past use descriptives (e.g., age of onset).

Youth emotional and behavioral symptoms.—Emotional symptoms included: 1) the *National Stressful Events Survey PTSD Short Scale (NSESSS)*; Kilpatrick, Resnick, & Friedman, 2013) that corresponds with DSM-V diagnostic criteria for posttraumatic stress disorder (PTSD). It is a brief, 9-item measure of posttraumatic stress symptoms over the past 7 days for those youth who endorse a particularly stressful event/experience. Youth report the extent to which they have been bothered by problems the stressful event (1=*not at all bothered* to 5=*extremely bothered*) suggesting degree of traumatic stress severity. Average scores range from 0–4; and 2) the *Affect Dysregulation Scale (ADS)*, a six-item instrument utilized and validated in our prior studies of youth in psychiatric care to assess youth’s frequency of difficulties with affect regulation (Brown et al., 2012). Youth responded on a 4-point scale (1=*not at all* to 4=*often*) and summed scores ranged from 6–24; higher scores indicate greater affect dysregulation ($\alpha = .79$). Behavioral symptoms included: 1) the *National Youth Survey Self-Reported Delinquency (NYS-SRD)*; Elliott, Huizinga, & Ageton, 1985) scale, a well-validated, 40-item, self-report measure of delinquent acts (e.g., larceny, fighting, selling drugs). Scores were used from the *General Delinquency* subscale ranging from 0–23 with higher scores indicating greater number of delinquent acts (in the past 120 days) endorsed¹ and 2) two yes/no items concerning *gang involvement* from the National Youth Risk Behavior Survey (YRBS; Eaton et al., 2012).

Analysis Plan

Descriptive statistics were calculated for all variables of interest and scales. Given our hypotheses related to poorer behavioral health outcomes associated with cumulative and co-occurring risk, behavioral risk indices were developed for substance use and sexual risk behaviors as follows:

Substance use risk index.—Variables used to create the substance use risk index included: ever used alcohol = 1; recent (past 120 days) alcohol use = 1; ever used marijuana = 1; recent (past 120 days) marijuana use = 1; ever used other illicit drugs = 1; recent (past 120 days) other illicit drug use = 1. Scores ranged from 0–6, with scores of 0 indicating no lifetime alcohol, marijuana or drug (i.e., substance) use, a score of 1 indicating less substance use/risk, and 6 indicating maximum substance use/risk.

Sexual (HIV/STI) risk behavior index.—Variables used to create the sexual risk index included: ever sexually active = 1; recently (past 120 days) sexually active = 1; no condom use at last sex = 1; self or partner substance use during sex = 1. Scores ranged from 0–4,

¹The original subscale includes 24 items. Due to an error in ACASI development, item 24 of the NYS general delinquency scale, “Have you had sexual intercourse with a person who was not your serious partner when involved in a relationship?” was not administered to study participants; therefore, subscale scores range from 1–23 but still accurately indicate that greater scores represent greater number of delinquent acts.

with score of 0 indicating no lifetime sexual activity, 1 indicating less sexual behavior risk, and 4 indicating maximum sexual behavior risk.

Risk indices comparison.—Descriptive statistics on each index were examined and each index was then dichotomized into 0 versus any risk. Risk indices were defined as “No risk” (neither substance use nor sexual risk behavior); “Single risk” (either substance use or sexual risk behavior) and “Co-Occurring risk” (substance use and sexual risk behavior). A Venn diagram (Figure 1) presents the extent of overlap between participants reporting both sexual and substance use-related risk. The overlapping group was categorized as having “co-occurring risk.” Sociodemographic differences between the “co-occurring risk” group, the sub-group reporting “single risk” and the “no risk” groups were examined using Chi-square tests. The interrelationship of risk indices and their association with the third primary study outcome of emotional/behavioral symptoms (ADS, NSESSS, NYS) was examined using multivariate analyses of covariance (MANCOVA). All MANCOVA analyses were adjusted for age, sex, and FTO status (i.e., an indicator of FTO severity). For each outcome of interest, we conducted *post-hoc* tests (i.e., to determine statistical significance between groups) if the omnibus one-way MANCOVA test statistic was significant at $p < 0.05$. All statistical analyses were conducted in SAS version 9.3, and all p -values are two-sided.

Results

Demographics, Education and Treatment/Agency Involvement

FTO-CINI youth were an average of 14.6 years ($SD=1.5$), and 46% were female (see Table 1). Racial and ethnic minority CINI youth were disproportionately represented in the system relative to regional census figures. Youth and caregivers reported high rates of youth past psychiatric history (including diagnosis, medications and hospitalization). Caregivers/families of FTO-CINI youth were predominantly female, birth parents with an average age of 41 years. Caregivers’ racial and ethnic self-identification largely mirrored that of their youth. Caregivers were predominantly single parents, low-income and receiving public assistance (Table 1).

Primary Outcomes (Lifetime and Past 120 Days)

Substance use.—Twenty-one percent of CINI youth reported lifetime cigarette use and early age of onset (13 years old; Table 2). Over half of youth lifetime smokers reported recent, frequent smoking (used 40 out of past 120 days). Alcohol use was reported by a third of youth (average age of onset of 14 years) and two-thirds of those youth reported recent, but on average infrequent, alcohol use (used 6 out of past 120 days). Marijuana use was most prevalent with almost 50% of youth endorsing lifetime use and average age of onset of 13 years. Of those youth, 80% endorsed recent and frequent use (used 38 out of past 120 days). Thirteen percent of FTO-CINI youth reported other lifetime drug use.

Sexual (HIV/STI) risk behaviors.—Approximately 40% of FTO-CINI youth reported lifetime sexual activity (Table 2). Most sexually active CINI youth reported vaginal (86%) and oral (81%) sex. Of youth ever sexually active, 74% reported recent sexual activity, 63% reported condom use at last sex and 49% reported recent substance use (either themselves

and/or their partner) during sex. Sexually active CINI youth reported having a median of 2 (IQR: 1–5) lifetime and 1 (IQR: 1–3) recent sexual partners. History of pregnancy and STIs was low (1 and 2%, respectively).

Emotional Symptoms.—Juveniles reported an average ADS score of 12.8 ($SD=4.4$; range 6–24; Table 2). Over three-quarters (79%) of youth endorsed trauma exposure with an average traumatic stress severity (NSESSS) score of 1.2 ($SD=1.1$; range 0–4).

Behavioral Symptoms.—On average, the youth in this sample reported a low score on the NYS delinquency scale ($M=2.1$; $SD=2.6$). Twenty-seven youth (6.4%; predominantly male) reported any history of gang involvement.

Bivariate Gender Analyses

Male and female CINI youth differed on certain demographics, risk behaviors and emotional and behavioral symptoms (Table 2). In terms of primary outcomes of interest, males reported significantly more condom use at last sex than females. Females reported overall higher rates of nicotine use and marijuana use than males with the caveat that males who were recent smokers endorsed more frequent recent use and differences in marijuana use were at the trend level of significance ($p=.06$). There were no gender differences in alcohol use. Lastly, females reported significantly greater affect dysregulation than boys; there were no other statistically significant gender differences on measures of emotional or behavioral symptoms.

Risk Indices

Substance use index.—Scores ranged from 0–6; 47% of youth ($N=200$) fell in the “no substance use risk” category, 8% ($n=35$) received a score of 1, 15% ($n=62$) received a score of 2, 9% ($n=39$) received a score of 3, 12% ($n=51$) received a score of 4, 5% ($n=20$) received a score of 5 and 4% ($n=16$) received a score of 6.

Sexual risk index.—Scores ranged from 0–3 with 61% percent of youth ($n=256$) with scores of 0 or “no risk” category; 22% ($n=95$) received a score of 1, 12% ($n=51$) a score of 2; and 5% ($n=21$) a score of 3 (no youth had the maximum score of 4).

Substance use and sexual risk indices were positively correlated and when identifying co-occurring risk, three categories emerged (see Figure 1): those who had “no substance use or sexual risk” ($N=174$; 41%); those who had “either sexual or substance use risk” ($N=108$; 26%) and those who had “co-occurring sexual and substance use risk” ($N=141$; 33%).

Bivariate associations.—First-time offense type and age were associated with risk indices such that youth with a delinquent first-time offense and older youth (15–18 years) were more likely to have co-occurring risks than first-time status offenders [$\chi^2(2, N=423) = 5.86, p = .05$] and youth aged 12–14 years, respectively [$\chi^2(2, N=422) = 87.25; p < .0001$]. There were no statistically significant differences in the proportion of males to females in any of the risk categories [$\chi^2(2, N=419) = 2.59, p > .05$].

Models of risk.—MANCOVA results examining the association of substance use and sexual risk indices with emotional/behavioral symptoms and delinquent behavior are presented in Table 3. Twenty-two percent of youth were missing an NSESSS score (due to reporting no lifetime trauma exposure); thus, due to listwise deletion inherent in MANCOVA, the sample size was reduced to 323 youth (N=123 with co-occurring risk, N=78 reporting sexual or substance use risk behavior, and N=122 youth with no risk). Controlling for variables both empirically and theoretically expected to be associated with primary outcomes (i.e., age, sex and offender status), we observed statistically significant associations between all three outcomes and the risk groups (see omnibus *F* statistics and corresponding *p*-values in Table 3). Thus, *post-hoc* tests were conducted for all three measures. Youth with co-occurring risk had significantly higher mean scores than youth with single risk on measures of delinquent behaviors ($p < 0.001$) and significantly higher mean scores than youth with no risk on measures of emotional/behavioral symptoms and delinquent behaviors ($p < 0.001$ and $p = 0.004$, respectively). Youth with single risk (either sexual or substance use) risk had significantly higher mean scores than youth with no risk on measures of affect dysregulation and delinquency ($p = 0.036$ and $p < 0.001$, respectively). Females with co-occurring risk reported more delinquency ($F(1, 322) = 10.33, p = 0.001$) and affect dysregulation ($F(1,322) = 23.33, p < 0.001$) than all other groups (i.e., versus male co-occurring risk or females in the “no risk” or “single risk” group).

Discussion

Project EPICC is among the first to document across a unique large sample of FTO-CINI youth that rates of substance use, emotional/behavioral symptoms *and* sexual risk behaviors are high and co-occur. Rates of risk behaviors and emotional/behavioral symptoms appear to fit in squarely between those previously reported in community-based delinquency prevention studies [e.g., OJJDP’s Program of Research on the Causes and Correlates of Delinquency (Office of Juvenile Justice and Delinquency Prevention (OJJDP), 2016)] and those with detained youth (e.g., Elkington et al., 2008; Teplin et al., 2005). Our data suggest that integrated care is relevant and needed for youth at this *early* intercept of justice involvement. Substance use and sexual activity start as early as 13–14 years of age. For the almost 50% already using marijuana by the time of first legal contact, use is recent and frequent, averaging 10 days of marijuana use per month. Trauma exposure is as high as that reported for detained youth, who are presumed to be further entrenched in the system and more severe in their psychiatric presentation and needs. Almost one-third of FTO-CINI youth have a lifetime history of psychiatric diagnosis and 31% have a history of psychotropic medication. These findings support our hypothesis that this is a critical group of youth to target for secondary prevention of substance use, psychiatric co-morbidity and co-occurring sexual risk behaviors.

Consistent with other literature indicating that youth with psychiatric symptoms have higher rates of substance use and sexual risk behaviors (Brown et al., 2014, 2010; Conrad et al., 2017), FTO-CINI youth with co-occurring substance use and sexual risk behaviors appear to endorse higher rates of emotion dysregulation and traumatic stress symptoms. Thus, even for youth whom the courts and community might perceive as “low level” offenders and less severe in terms of behavioral health risk when compared to detained youth, substantial

substance use and sexual risk behaviors are occurring at early stage of legal contact and are highly associated with emotional/behavioral difficulties. The Juvenile Justice Translational Research on Interventions for Adolescents in the Legal System (JJ-TRIALS) implementation behavioral health study suggests that more research is urgently needed to understand how to improve the behavioral health services cascade of care for community-supervised justice-involved youth, particularly as it relates to improving substance use services (Belenko et al., 2017; Knight et al., 2016). Our data strongly support the relevance and need to enhance the juvenile justice behavioral health cascade of care for this community-supervised population and highlight that psychiatric and sexual health services should be incorporated with substance use cascade of care efforts. This integration of care will require concentrated partnership between public health and juvenile justice systems to identify ways in which they can embed behavioral health resources into court or community-based diversion settings. Innovative examples might include partnership to develop juvenile court clinics and/or incorporating behavioral health screening and intervention resources for FTO-CINI youth served through collaborative court models (e.g., juvenile drug court).

Key Implications and Next Steps

There are some key ways in which our data suggest behavioral health services should be tailored to adeptly meet the needs of FTO-CINI youth. The first is the need for family engagement. Caregiver data suggest that the close majority of families are impoverished, single-parent household and have a history of child welfare involvement. Behavioral health efforts will require considerable support resources and specific family engagement strategies to improve youth outcomes. Family motivation and engagement may be high at this initial stage of justice contact before the youth may become more system-entrenched and caregivers have more system fatigue or frustration or feel “failed” by the system. Researching ways that court-involved families can be more successfully engaged into linkage for youth substance use treatment, for example, is sorely needed. The second is gender-responsive programming. Our hypothesis that FTO-CINI females with co-occurring risk would report more delinquent behaviors and emotional symptoms than all other groups was supported. Training court and diversion staff on gender-responsive approaches to behavioral health screening, assessment and intervention that consider the unique pathways of girls into the system and their ongoing gender-specific needs is imperative. Research is needed on the efficacy and implementation of gender-responsive substance use and mental health treatment for justice-involved girls, given that these CINI girls have higher prevalence of risk factors for recidivism, such as sexual abuse, relative to justice-involved boys (Conrad, Placella, Tolou-Shams, Rizzo, & Brown, 2014). The third is incorporation of culturally congruent services. Consistent with justice system statistics at large, racial and ethnic minority youth in our study were disproportionately represented at first justice contact; within the jurisdiction that these data were collected, Latinx and African American youth representation was double that of existing census data. Data are clear—across settings (e.g., pediatric, community)—that racial and ethnic minority youth confront different challenges to engagement in substance use and psychiatric care than their white counterparts that perpetuate health and legal disparities (Marrast, Himmelstein, & Woolhandler, 2016). Efforts in addressing the substance use, mental and sexual health needs of FTO-CINI youth must directly address cultural differences, needs and desires of justice-involved minority families.

Limitations

Data were collected from families in one region of the Northeastern US and therefore may limit representativeness and generalizability. Self-report data may be associated with under-reporting of risk and/or sensitive behaviors and in some cases, having to assess caregivers and youth within the same location or room might have affected responding; however, our data suggest that under-reporting may not have been a concern given that rates of risk behaviors were high, including reports of marijuana use. Cross-sectional data limit our ability to understand causality and direction across variables of interest; however, future longitudinal analysis with this same cohort will be able to disentangle, for example, the temporal relationships between substance use, psychiatric symptoms and re-offending to further inform the field as to how and when best to intervene to improve FTO-CINI youth outcomes.

Conclusions

Our data support a critical need to identify ways in which we can improve *early* access to substance use, sexual and mental health services for a group of youth who have significant behavioral health needs but are typically overlooked as being less risky or “in need.” Increasing access to and engagement with substance use and mental health services could have profound implications for later public health and legal outcomes. Future Project EPICC analyses will be able to identify trajectories of youth in each risk index and association with future behavioral health and legal outcomes to inform more tailored prevention and intervention efforts for these vulnerable youth and families.

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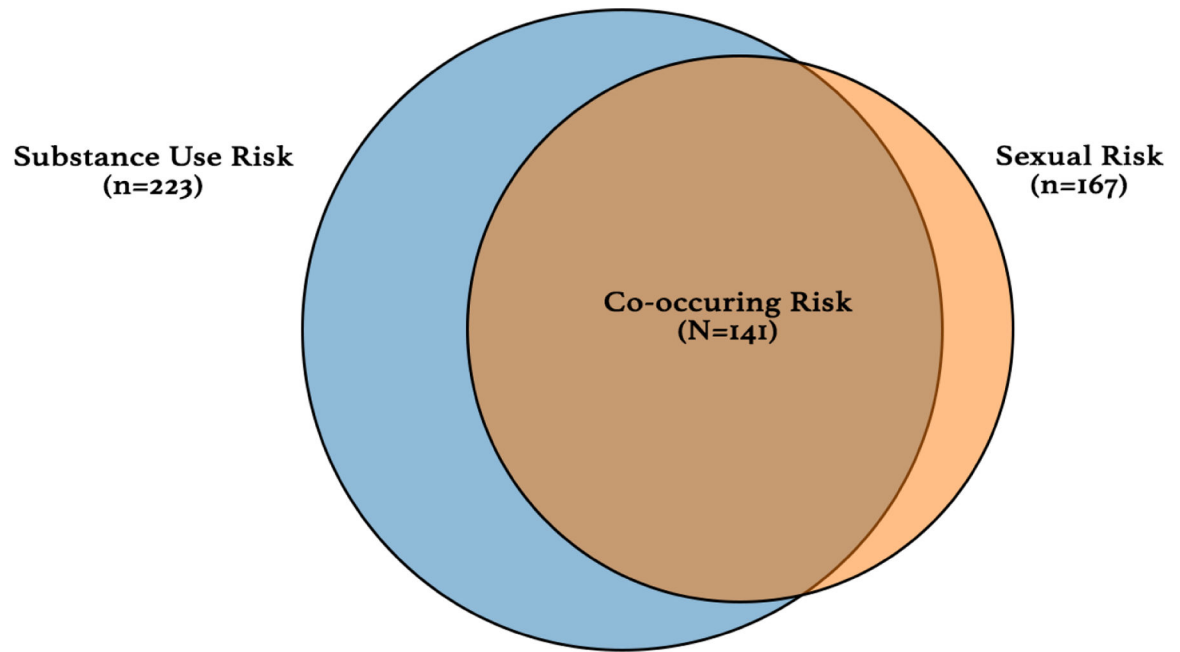


Figure 1.

Venn Diagram of Co-Occurring Substance Use and Sexual Risk (N=423*)

* Note: 174 (41.1%) participants reported no sexual or substance use risk and are not shown in the Venn diagram. There were 82 youth reporting only substance use risk and 26 youth reporting only sexual risk.

Table 1. FTO-CINI youth demographics, education and treatment/agency involvement (N=423)

	Total N= 423	Male n= 226	Female n= 193	Test Statistic
Demographics				
Mean (SD) or N (%)				
Age	14.55 (1.55)	14.62 (1.51)	14.49 (1.55)	0.88
Gender (% female)	193 (45.63%)	---	---	
Race ^a				
Caucasian	189 (44.68%)	102 (46.36%)	85 (45.21%)	0.05
Black, African-American, or Haitian	74 (17.49%)	37 (16.82%)	37 (19.68%)	0.56
American Indian	39 (9.22%)	18 (8.18%)	21 (11.17%)	1.05
Asian ^b	5 (1.18%)	4 (1.82%)	1 (0.53%)	0.38
Native Hawaiian or other Pacific Islander	6 (1.42%)	6 (2.73%)	---	5.20*
Multi-Racial	71 (16.78%)	43 (19.55%)	28 (14.89%)	1.52
Other	79 (18.68%)	34 (15.45%)	44 (23.40%)	1.39
Hispanic or Latinx	181 (43.61%)	100 (45.45%)	79 (41.36%)	0.70
Ethnic Origin				1.52
Puerto Rican	94/181 (51.93%)	54 (54.00%)	39 (51.32%)	
Dominican	55/181 (30.39%)	33 (33.00%)	22 (28.95%)	
Other Latinx	29/181 (16.02%)	13 (13.00%)	15 (19.74%)	
Sexual Orientation (% non-heterosexual)	81 (19.15%)	13 (5.91%)	65 (34.21%)	53.01***
Caregiver relationship to youth (% female birth parent)	344 (81.32%)	280 (79.65%)	160 (82.90%)	0.72
Number of children <18 years living in the home	2.61 (1.67)	2.63 (1.50)	2.60 (1.85)	0.19
Presence of another parent/caregiver in the home	182 (43.03%)	98 (43.36%)	84 (43.52%)	0.001
Primary caregiver currently employed	220 (52.01%)	119 (52.65%)	98 (50.78%)	0.15
Receive public assistance (current)	274 (64.78%)	143 (63.56%)	129 (66.84%)	0.48
Education^b				
Middle school	163 (38.53%)	88 (38.94%)	73 (37.82%)	p=0.0036
High school	256 (60.52%)	138 (61.06%)	116 (60.10%)	

	Total N= 423	Male n= 226	Female n= 193	Test Statistic
Not currently in school	4 (0.95%)	---	4 (2.07%)	
Ever repeated a grade in school	138 (32.62%)	87 (38.50%)	50 (25.91%)	7.58***
Ever received special education services	143 (33.81%)	94 (41.78%)	46 (24.08%)	14.49***
Ever had Individualized Education Plan	171 (40.43%)	107 (47.56%)	61 (31.94%)	10.47***
Ever been expelled from school	32 (7.57%)	18 (8.00%)	14 (7.33%)	0.07
Ever been suspended from school	259 (61.67%)	149 (66.22%)	108 (56.54%)	4.10*
Psychiatric and Substance Use Treatment History				
Psychiatric diagnosis, lifetime	126 (29.79%)	65 (28.89%)	60 (31.41%)	0.31
Prescribed psychiatric medications, lifetime	130 (30.73%)	66 (29.33%)	64 (33.86%)	0.98
Prescribed psychiatric medications, past 4 months	91/130 (70.00%)	47/66 (71.21%)	44/64 (68.75%)	0.09
Psychiatric inpatient hospitalization, lifetime	71 (16.78%)	34 (15.04%)	36 (18.95%)	1.12
Day hospital or partial hospitalization, lifetime	63 (14.89%)	31 (13.72%)	30 (15.87%)	0.38
Day hospital or partial hospitalization, past 4 months	11/63 (17.46%)	5 (16.13%)	6 (20.00%)	0.15
Day hospital or partial hospitalization, past 4 months	4 (0.95%)	2 (0.88%)	2 (1.05%)	p=1.00
Visited community outpatient drug or alcohol clinic, lifetime	3/4 (75.00%)	1 (50.00%)	2 (100.00%)	p=1.00
Visited community outpatient drug or alcohol clinic, past 4 months	97 (22.93%)	47 (20.80%)	49 (25.79%)	1.45
Visited a mental health center for psychiatric or mental health problems, lifetime	58/97 (59.79%)	28 (59.57%)	29 (59.18%)	0.002

Note: N's may vary according to patterns of missing data due to non-response, including 4 participants who did not respond to gender (male/female) item.

^a Individuals were able to select more than one racial category and as such, percentages may not equal 100.

^b Chi-square statistics not reported for categories containing cells with n<5 (Agresti and Finlay, 1986), instead we report the Fisher's Exact Test;

* p=0.05,

** p<0.05,

*** p<0.01.

Table 2. FTO-CINI youths' baseline lifetime and recent substance use, HIV/STI risk and psychiatric symptoms (N=423)

	Total N= 423	Male n= 226	Female n= 193	Test Statistic
	Mean (SD), Median (IQR) or N (%)			
HIV/STI risk				
Sexually active, lifetime ^a	167/414 ^b (40.34%)	90 (41.28%)	77 (40.10%)	0.06
Condom use at last sex (% yes)	105/167 (62.87%)	64 (72.73%)	41 (55.41%)	5.29*
Sexually active, ^a past 4 months	124/167 (74.25%)	64 (71.11%)	60 (77.92%)	1.01
Substance use at last sex (self/partner)	61/124 (49.19%)	27 (42.86%)	34 (58.62%)	3.00
Number of sex partners (oral, vaginal, anal), lifetime (median, IQR) (n=167)	2.00 (1–5)	4.29 (5.49)	3.23 (3.18)	1.48
Number of sex partners, past 4 months (median, IQR) (n=124)	1.00 (1–3)	5.25 (13.85)	2.15 (2.39)	1.69
Getting pregnant or getting someone else pregnant, lifetime ^c	6 (1.42%)	1 (0.45%)	5 (2.60%)	p=0.10
Sexually transmitted infections (STI) diagnosis, lifetime ^{c,d}	9 (2.13%)	3 (3.37%)	6 (7.79%)	p=0.31
Sexually transmitted infections (STI) diagnosis, past 4 months ^{c,d}	4/9 (44.44%)	2 (66.67%)	2 (33.33%)	p=0.52
Substance use				
Cigarette use, lifetime	90 (21.28%)	38 (17.04%)	51 (26.56%)	5.55*
Cigarette use, past 4 months	50/90 (55.56%)	21 (55.26%)	28 (54.90%)	0.001
Number of days smoking, past 4 months (mean, SD)	40.45 (46.41)	56.45 (53.27)	27.13 (35.71)	2.18*
Alcohol use, lifetime	138 (32.62%)	64 (28.83%)	71 (36.79%)	2.98
Alcohol use, past 4 months	93/138 (67.39%)	40 (62.50%)	51 (71.83%)	1.33
Number of days drinking, past 4 months (mean, SD)	5.86 (11.27)	5.63 (6.16)	6.08 (14.19)	-0.20
Marijuana use, lifetime	205 (48.46%)	100 (45.25%)	104 (54.74%)	3.68 [†]
Marijuana use, past 4 months	164/205 (80.00%)	76 (76.00%)	87 (83.65%)	1.86
Number of days of marijuana use, past 4 months (mean, SD)	37.99 (44.24)	34.66 (42.44)	39.82 (45.20)	-0.70
Other drug use, lifetime ^e	55 (13.00%)	26 (11.82%)	28 (14.97%)	0.87
Other drug use, past 4 months	22/55 (40.00%)			
Emotional and Behavioral Symptoms				
Affect Dysregulation Scale score (mean, SD)	12.87 (4.38)	11.66 (3.89)	14.12 (4.44)	-5.88***

	Total N= 423	Male n= 226	Female n= 193	Test Statistic
Trauma symptoms (National Stressful Events Survey Short Scale; NSESSS)	1.15 (1.07)	1.02 (1.01)	1.23 (1.09)	-1.77
NYS Delinquency (General Delinquency subscale)	2.10 (2.68)	2.26 (2.92)	1.88 (2.38)	1.48

Note:

^a Vaginal, oral, or anal;

^b n=9 persons refused to answer the sexual activity questions;

^c Chi-square statistics not reported for categories containing cells with n<5 (Agresti and Finlay, 1986), instead we report the Fisher's Exact Test;

^d Gonorrhea, Chlamydia, trichomonas, or syphilis;

^e Other drug use includes any other drug use outside of marijuana use (e.g., methamphetamines, opioids), but includes synthetic marijuana use;

* p=0.05,

** p<0.05,

*** p<0.01,

t(trend): p=.06

Table 3.

MANCOVA models of behavioral health risk and emotional/behavioral symptoms

Variable	Co-Occurring Risk (n=123) Mean (SE)	Sexual Risk or Substance Use Behavior (n=78) Mean (SE)	No Risk (n=122) Mean (SE)	Multivariate (F)	p
Affect Dysregulation Scale (ADS)	14.10 (0.39) _a	13.10 (0.46) _a	11.83 (0.39) _b	7.34	0.0008
Delinquency (NYS)	3.70 (0.23) _a	2.01 (0.27) _b	0.68 (0.23) _c	37.26	<0.0001
Trauma Symptoms (NSESSS)	1.40 (0.10) _a	1.11 (0.12) _{a,b}	0.87 (0.10) _b	6.13	0.0024

Note: All models controlled for age, sex, and offender status. Different subscripts in the same row indicate a significant difference ($p < 0.05$) between the indicated groups. MANCOVA requires listwise deletion and due to reduced sample size on the NSESSS symptom reporting (21% denied any trauma exposure and were not included for symptom scores), overall sample size was reduced accordingly.