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The behavioral health needs of legally involved sexual minority female adolescents

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Abstract

Background Sexual minority (SM) female adolescents involved in the legal system experience marginalization and health inequities. This study examined the differences in psychosocial functioning and risk behaviors among legally involved SM and heterosexual female adolescents to better understand their behavioral health needs. We hypothesized that SM females, as individuals at the intersection of two marginalized groups, would demonstrate greater psychiatric symptom severity and engagement in risk behaviors than their heterosexual counterparts.

Methods Adolescents involved in the legal system ($N=423$) enrolled in a prospective cohort study and completed baseline surveys assessing their demographics, SM status, psychiatric symptoms, substance use, and engagement in self-injurious, delinquent, and sexual risk behaviors. The responses of SM and heterosexual female adolescents ($n=193$) were compared using bivariate and regression analyses.

Results Participants were 12 to 18 years old ($M=14.49$, $SD=1.55$), ethnoracially diverse, and 38.3% identified as a SM. SM females, as compared to heterosexual females, reported more PTSD and emotional symptoms, difficulties with anger control and personal adjustment, and engagement in substance use, self-injurious, and sexual risk behaviors.

Conclusion Legally involved SM female adolescents in this study had greater psychiatric, substance use, and sexual health treatment needs compared to their heterosexual peers. These findings highlight the need for enhanced understanding of how to effectively support SM female adolescents, including utilization of culturally sensitive and clinically informative screening practices that do not contribute to further discrimination within the legal system. Future work should aim to develop identity-responsive interventions tailored to this population.

Keywords Sexual minority, Legally involved, Adolescent, Risk behaviors, Psychosocial functioning, Substance use

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Background

Adolescents involved in the legal system face significant health disparities, including elevated rates of substance use, psychiatric disorders, sexually transmitted infections (STI's), and HIV, among other medical conditions (Barnert et al., 2016; Castrucci & Martin, 2002; Shufelt & Cocozza, 2006; Teplin et al., 2005; Winkelman et al., 2017). National trends indicate that females are increasingly becoming involved in the legal system (Development Services Group,2023), with growing attention being directed to their unique behavioral health needs. Female adolescents in the legal system have higher rates of depression, trauma symptoms, STI's, sexual risk behaviors, and sexual abuse as compared to their male counterparts in multiple settings, including carceral (Barnert et al., 2016; Perry & Morris, 2014), non-incarcerated (Conrad et al., 2017), and mixed disposition samples (Shufelt & Cocozza, 2006). They also have higher rates of HIV, unprotected sex, and pregnancy as compared to non-legally involved populations (Perry & Morris, 2014). While males have been shown to be more likely to recidivate, studies have demonstrated that factors associated with an increased likelihood of continued system contact, such as substance use and psychiatric symptoms, may impact males and females differently (Hamilton et al., 2007; McReynolds et al., 2010; Tolou-Shams et al., 2023). For example, history of childhood sexual abuse is a predictor of recidivism for system-involved females (Conrad et al., 2014), but not for males. Furthermore, different associations between depression, substance use, and delinquency exist for system-involved females as compared to males, with one study demonstrating that females on probation with co-occurring mood disorders and substance use were seven times more likely to recidivate than males with the same co-occurring conditions (McReynolds et al., 2010).

Legally involved adolescent females who identify as a sexual minority (SM) also face significant inequities. SM female adolescents are overrepresented within the juvenile legal system, a disparity not seen among SM males (Jonnson et al., 2019), with prevalence rates estimated between 24.0 and 48.0% (Barnett et al., 2022; Jonnson et al., 2019; Vieira et al., 2023). Discriminatory practices, such as increased targeting by law enforcement (Himmelstein & Bruckner, 2011), harsher sentencing (Himmelstein & Bruckner, 2011; Jonnson et al., 2019; Wilson et al., 2017), and longer periods of detention (Wilson et al., 2017) likely contribute to these findings. Within the legal system, a lack of culturally sensitive screening measures and fear surrounding disclosure of sexual orientation may contribute to the under-recognition of SM adolescents, despite their overrepresentation (Irvine, 2010; Majd et al., 2009). SM adolescents face additional instances of hostility within home and school environments (Goldbach et al., 2014; Irvine, 2010; Majd et al., 2009) and health disparities, including higher rates of psychiatric symptoms, sexual risk, and substance use both within and outside of the legal system (Hirschtritt et al., 2018; Kann et al., 2018; Marshal et al., 2008; Vieira et al., 2023).

Previous research has indicated that minority stress theory (MST) may account for these inequities. MST posits that individuals with minority status experience unique stressors, which are associated with changes in functioning and behaviors that contribute to adverse health outcomes (Goldbach et al., 2014; Marshal et al., 2012; Meyer, 2003). MST is supported by a robust evidence base, including studies which have linked substance use to psychological stress, victimization, and negative disclosure reactions (Goldbach et al., 2014) as well as sexual orientation-based discrimination to psychological distress (Branstrom & Pachankis, 2018) and suicidality (Bouris et al., 2016) among SM youth. While MST identifies many important processes, it may not account for the differences in experiences among individuals who are at the intersection of multiple marginalized groups. Meaningful differences have emerged when comparing the effects of minority stress processes among SM youth of varying identities, such as gender identity. For example, studies have demonstrated that parental factors, such as relationship quality and support, mediate the relationship between SM status, psychiatric symptoms, and drug and alcohol use among SM females but less so for SM males (Fish et al., 2020; Needham & Austin, 2010; Pearson & Wilkinson, 2013).

As a result, viewing MST through an intersectional lens has been advocated for in the existing literature (McConnell et al., 2018). Intersectionality theory posits that social identities are intersecting, they interact at both individual and structural levels to contribute to health disparities, and each may confer differing levels of advantage and disadvantage (Bowleg, 2012; Crenshaw, 1989). Therefore, viewing minority stress through an intersectional lens may allow for a more comprehensive understanding of the experience of individuals who are at the intersection of multiple marginalized groups, such as SM female adolescents within the legal system, a setting which has a history of sexual identity and gender inequities (Development Services Group,2023; Majd et al., 2009; Winkelman et al., 2017). Consequently, further research is needed on the behavioral health of legally involved SM female adolescents to better understand their unique experience and tailor clinical interventions.

This current study sought to address this gap by analyzing baseline data from a cohort of female adolescents at their first involvement with the legal system. We aimed to assess the differences in psychosocial functioning and risk behaviors between SM and heterosexual female adolescents to better understand their behavioral health

needs. We hypothesized that SM female adolescents would demonstrate greater severity of psychiatric symptoms and engagement in delinquency, substance use, self-injury, and unsafe sexual behaviors than their heterosexual female counterparts.

Methods

Participants

Adolescents ($N = 423$) were recruited from a family court in the Northeastern U.S. as a part of a two-year longitudinal, prospective cohort study (Tolou-Shams et al., 2019). Inclusion criteria were: (1) ages 12 to 18, (2) first-time involvement with the legal system, (3) English proficiency. The exclusion criterion was the presence of a cognitive impairment that would impede assent or assessment completion. All assessments were conducted between June 2014 and July 2016. This current study utilized the baseline data of 193 individuals who self-identified as female.

Procedures

The protocol for this research study, including the measures utilized, was approved by the sponsoring institution and collaborating sites' committee of Human Subjects. A federal Certificate of Confidentiality was obtained to protect participant privacy. Caregivers were informed about the project in a letter mailed with their adolescent's initial court hearing paperwork. During meetings with a court intake coordinator, adolescents and their caregivers were approached by research assistants to discuss study participation. Consent and assent were then obtained from caregivers and adolescents, respectively. There were no penalties or adverse consequences for the adolescent participants if they declined participation in this study at any point in the process. Adolescents completed measures on study tablets in locations which allowed for privacy, including their homes, the courthouse, the research labs, or locations in the community. Baseline assessments were completed within a month of initial juvenile court contact. Study methods have been previously reported elsewhere (Hirschtritt et al., 2021; Tolou-Shams et al., 2019). At the conclusion of these assessments, adolescents were queried about feelings of psychological distress and were offered an opportunity to meet with study personnel or be directed to the appropriate resources.

Measures

Individual characteristics

Demographics. Adolescents self-reported their age, gender, race, ethnicity, and education at baseline. Caregivers self-reported data on yearly household income.

Sexual Minority Status. Adolescents were identified as having SM status if they self-reported non-heterosexual sexual and romantic orientation, behaviors, and/or attraction. These parameters were utilized to encompass the multi-dimensional and fluid nature of sexual expression in adolescents across the lesbian, gay, bisexual, and queer or questioning spectrum, in keeping with prior work.

Psychosocial functioning

Behavior Assessment System for Children, Second Edition (BASC-2)

The BASC-2 is a 176-item self-assessment of behavioral and emotional symptoms utilizing two- ("True/False") and four-point responses ("Never, Sometimes, Often, and Almost Always") assigned numerical values (e.g., True = 1; Almost Always = 4) (Reynolds & Kamphaus, 2006). Responses were converted into T-scores, which were stratified into two categories: Clinically and Non-clinically Significant. The following four scales were chosen to assess aspects of psychosocial functioning that may increase vulnerability for poor behavioral health outcomes.

Clinical scales (T-score ≥ 70, clinically Significant)

Emotional symptoms index Composite scale indicating the presence of serious emotional disturbance. It combines two subscales from the Personal Adjustment scale (Self-Esteem and Self-Reliance) with four from the Internalizing Problems scale (Anxiety, Depression, Sense of Inadequacy, and Social Stress).

Anger control Content scale assessing the balance between (1) an individual's propensity towards anger and impulsivity and (2) their ability to regulate affect and maintain self-control.

School problems Composite scale capturing an individual's negative feelings regarding school and education. It combines the Attitudes to School, Attitudes to Teachers, and Sensation Seeking subscales.

Adaptive scale (T-score ≤ 30, clinically Significant)

Personal adjustment Composite scale assessing for adjustment difficulties regarding one's identity and relationships with others. It combines the Self-Esteem, Self-Reliance, Interpersonal Relations, and Relations with Parents subscales. While it does share two subscales with the *Emotional Symptoms Index*, it was utilized to obtain a broader sense of adolescents' psychosocial strengths.

Impulsive Decision Making Scale (IDM). The IDM is an 11-item scale which assesses impulsive decision-making via a four-point Likert-type scale with responses ranging from "Never" (1) to "Always" (4) (Donohew et al., 2000). Participants rate themselves on statements, such as "When I do something I think about all of my choices carefully." Higher scores on the IDM indicate greater

levels of impulsive decision-making. This scale demonstrated adequate internal consistency in this sample (α = 0.72).

National Stressful Events Survey PTSD Short Scale (NSESSS). The NSESSS is a nine-item scale assessing post-traumatic stress disorder (PTSD) symptomatology (LeBeau et al., 2014). Participants utilize five-point Likert-type scales, ranging from "Not at All" (1) to "Extremely" (5) to rate how bothered they have been within the past seven days by a variety of trauma-related symptoms. An additional response option was included to allow participants to report that they had never experienced a stressful event. Scores were prorated when one or two items were unanswered and were not calculated when three or more items were unanswered. The NSESSS demonstrated adequate reliability within this sample (standardized α = 0.93).

Risk behaviors

National Youth Survey of Self-Reported Delinquency (NYS). The NYS is a self-report measure which assesses engagement in delinquent acts, including stealing, violence, and public misconduct (Elliott et al., 1982; Thornberry & Krohn, 2000). Adolescents were asked at baseline which delinquent acts they had engaged in over their lifetime. The well-validated, 23-item general delinquency subscale, which examines a full range of delinquent acts, was used for this study (Elliott et al., 1982; NIDA, 2016; Tolou-Shams et al., 2019). Higher counts indicate a greater number of delinquent acts endorsed. This subscale demonstrated adequate internal consistency in this sample (α = 0.79).

Adolescent Risk Behavior Assessment (ARBA). The ARBA is a self-report assessment that explores a variety of risk behaviors (Donenberg et al., 2001). This study utilized "Yes/No" and numerical scale responses to the following items regarding lifetime history of: 1) self-injurious behaviors (SIB), 2) substance use, 3) sexual intercourse, 4) gender and number of sexual partners, 5) condom use at last encounter, 6) STI's, 7) sex at first meeting, and 8) exchanging sex for money, drugs, or shelter. Multiple substance use (inhalants, synthetic drugs, methamphetamines, cocaine, heroin) and STI items (gonorrhea, syphilis, chlamydia, trichomonas, genital warts, hepatitis, herpes) were collapsed into one "Yes/No" category (Other Drugs and STI's, respectively) because the individual items were infrequently reported. Similarly, the original five-point Likert-type scales for history of drug use during sex for the adolescents and their sexual partners were collapsed into three-point scales, ranging from "Never" (1) to "Less Than Half of the Time" (2), and More Than Half of the Time" (3) due to a limited number of responses in the mid-range of the original scales.

Statistical analysis

Frequencies and means with standard deviations were calculated for categorical variables and scale scores, respectively. T-tests and chi-square tests of independence were used to examine the differences between SM and heterosexual female adolescents on demographic data. With these analyses, grade level was significantly different between the SM and heterosexual groups (Table 1). As grade level is a proxy for age and using an ordinal variable over a nominal variable offers greater precision and power to detect differences, secondary analyses were conducted with age as a covariate to examine the degree to which SM status predicted the outcomes of interest. Logistic regressions were used for categorical outcomes and ANOVA's for continuous outcomes. A negative binomial regression was used for the count data generated from the NYS as the mean of this scale was less than its variance. ANOVA's and regressions were not completed for variables that were not endorsed by any of the heterosexual adolescents (e.g., lifetime number of female partners, sex at first meeting, exchanging sex, self drug use during sex). All analyses were conducted with IBM SPSS Statistics for Windows, version 26 (Corp, 2019).

Results

Demographics

Female adolescents ranged in age from 12 to 18 years old ($M = 14.49$; $SD = 1.55$). They reported a variety of racial identities, including African American/Black (19.7%) and White (45.2%) and 41.4% identified as Hispanic or Latinx (Table 1). Adolescents were largely in high school (61.1%), and none endorsed being in college, receiving their GED, or dropping out of school. The majority (87.0%) of caregivers reported a yearly household income of less than $50,000 and 71.8% of adolescents qualified for free or reduced-cost lunches. Over one-third (38.3%; $n = 74$) of the sample identified as a SM. Between the two sexual orientation groups (Table 1), SM adolescents were more likely to be in high school ($x^2 = 3.87$, $p = .049$) with age trending towards significance ($t = -1.91$, $p = .57$).

Psychosocial functioning

SM female adolescents demonstrated greater severity of psychiatric symptoms as compared to the heterosexual adolescents (Table 2). Across all subscales of the BASC-2, a larger percentage of the SM group's scores fell within the clinical range. After controlling for age (Table 2), SM adolescents had more than double the odds of having clinically significant emotional symptoms (AOR 2.86, 95%CI [1.38, 5.90]) and difficulties with anger control (AOR 2.39, 95%CI [1.11,5.11]). They also were over eight times more likely to have difficulties with personal adjustment (AOR 8.65, 95%CI [2.75,27.18]) and had

Table 1 Baseline demographic data with comparisons between sexual orientation groups

	Total Sample *N* = 193	**Sexual Minority *N* = 74**	**Heterosexual *N* = 119**		
	M (SD)/%	*M (SD)/%*	*M (SD)/%*	*Test Statistic*[a]	*p*
Age	14.49 (1.55)	14.76 (1.41)	14.32 (1.62)	*t* = -1.91	0.057
Range	12–18				
Race					
African American/ Black	19.7	20.8	19.0	$x^2 = 0.10$	0.754
American Indian	11.2	9.7	12.1	$x^2 = 0.25$	0.619
Asian	0.53	1.4	0.0	$x^2 = 1.62$	0.203
White	45.2	44.4	45.7	$x^2 = 0.03$	0.868
Multiracial	14.9	19.4	12.1	$x^2 = 1.91$	0.167
Other	23.4	16.7	27.6	$x^2 = 2.96$	0.086
Ethnicity					
Hispanic or Latinx	41.4	35.6	44.9	$x^2 = 1.61$	0.205
Education					
5th -8th Grade	38.4	28.8	44.4	$x^2 = 4.67$	0.031*
9th -12th Grade	61.1	69.9	55.6	$x^2 = 3.87$	0.049*
Completed High School	0.53	1.4	0	$x^2 = 1.61$	0.204
IEP/504	28.2	31.9	25.7	$x^2 = 0.84$	0.360
Special Education	17.6	15.1	19.1	$x^2 = 0.51$	0.476
School Expulsion	14.5	12.2	16.0	$x^2 = 0.53$	0.466
Repeat a Grade	23.8	27.0	21.8	$x^2 = 0.67$	0.412
Qualify for Free/Reduced Lunches	71.8	77.1	68.6	$x^2 = 1.57$	0.211
Yearly Income					
< $50,000	87.0	87.5	86.6	$x^2 = 0.03$	0.861
$50,000 - $99,9990	8.7	8.3	8.9	$x^2 = 0.02$	0.889
≥ $100,000	4.3	4.2	4.5	$x^2 = 0.01$	0.923

Note *Significant at the $p < .05$ level.[a] Test statistic represents comparisons between the sexual minority and heterosexual groups

Table 2 Psychosocial functioning with comparisons between sexual orientation groups

	Total Sample *N* = 193	**Sexual Minority *N* = 74**	**Hetero-sexual *N* = 119**		
	%	*%*	*%*	*AOR*	*95% CI*
BASC-2					
Emotional Symptoms Index[a]	21.4	32.4	14.7	2.86*	1.38–5.90
Anger Control[a]	18.5	26.0	13.8	2.39*	1.11–5.11
School Problems[a]	10.1	13.9	7.8	2.0	0.76–5.27
Personal Adjustment[b]	11.3	23.9	3.5	8.65*	2.75–27.18
	M (SD)	*M (SD)*	*M (SD)*	*F*	*p*
IDM	24.89 (5.07)	26.04 (4.53)	24.17 (5.27)	6.75	0.001*
NSESSS	11.03 (9.80)	14.25 (10.86)	9.0 (8.52)	5.74	0.004*

BASC-2- Behavior Assessment System for Children, Second Edition; IDM- Impulsive Decision Making Scale; NSESSS- National Stressful Events Survey Post-Traumatic Stress Disorder Short Scale *Significant at the $p < .05$ level [a] Percentage of participants with T scores ≥ 70 (clinical range) [b] Percentage of participants with T scores ≤ 30 (clinical range)

higher severity of PTSD symptoms ($F = 5.74$, $p = .004$) and levels of impulsivity ($F = 6.75$, $p = .001$).

Risk behaviors

While both groups engaged in similar numbers of delinquent behaviors, SM female adolescents more frequently reported SIB and substance use (Table 3). After controlling for age, SM adolescents' odds of SIB were over five times that of heterosexual adolescents (AOR 5.39, 95%CI [2.81, 10.36]). SM adolescents had higher rates of use for all substances (Table 3), with regressions demonstrating significantly greater odds for cigarettes (AOR 4.25, 95%CI [2.14, 8.43]), cannabis (AOR 1.97, 95%CI [1.00, 3.89]), alcohol (AOR 2.28, 95%CI [1.21, 4.32]), psychedelics (AOR 3.66, 95%CI [1.05, 12.78]), and prescription drugs (AOR 4.62, 95%CI [1.51, 14.11]).

SM adolescents had higher odds of engaging in sexual intercourse of any kind (AOR 2.18, 95%CI [1.09, 4.38]) and lower odds of using condoms (AOR 0.36, 95%CI [0.13, 0.95]), even when controlling for age (Table 3). They reported an average of 2.14 ($SD = 2.55$) lifetime female partners, similar numbers of lifetime male partners compared to the heterosexual group ($F = 2.14$, $p = .126$), and there was a trend towards a greater number of overall lifetime partners ($F = 2.97$, $p = .058$). Only

Table 3 Risk behaviors with comparisons between sexual identity groups

	Total Sample *N* = 193	Sexual Minority *N* = 74	Heterosexual *N* = 119		
	%	*%*	*%*	*AOR*	*95% CI*
ARBA					
Self-Injurious Behavior	36.9	61.4	22.2	5.39*	2.81–10.36
Substance Use					
Cigarettes	26.6	44.6	15.3	4.25*	2.14–8.43
Cannabis	54.7	67.1	47.0	1.97*	1.00–3.89
Alcohol	36.8	50.0	28.6	2.28*	1.21–4.32
Psychedelics	6.7	12.2	3.4	3.66*	1.05–12.78
Tranquilizers	4.1	8.1	1.7	4.92	0.92–26.44
Prescription Drugs	9.3	17.6	4.2	4.62*	1.51–14.11
Other Drugs	5.2	8.1	3.4	2.27	0.61–8.45
Sexual Intercourse					
Any	40.1	52.7	32.2	2.18*	1.09–4.38
Vaginal	85.7	84.6	86.8	0.86	0.24–3.11
Oral	80.5	84.6	76.3	1.68	0.53–5.31
Anal	6.5	10.3	2.6	4.15	0.43–39.70
Condom Use	55.4	44.7	66.7	0.36*	0.13 – 0.95
Sexually Transmitted Infections	11.7	15.4	7.9	2.95	0.61–14.41
Partner Drug Use During Sex[a]	13.8	16.7	10.7	1.60	0.33–7.70
	M (SD)	*M (SD)*	*M (SD)*	*F*	*p*
ARBA					
Sex Partners					
Lifetime Number	3.23 (3.18)	3.89 (3.74)	2.48 (2.37)	2.97	0.058
Number of Male Partners	3.10 (3.18)	3.67 (3.91)	2.51 (2.36)	2.14	0.126
NYS	1.84 (2.23)	2.16 (2.39)	1.64 (2.11)	1.19	0.305

NYS- National Youth Survey; ARBA- Adolescent Risk Behavior Assessment *Significant at the $p < .05$ level [a] Percentage reporting engagement "More Than Half the Time"

SM adolescents endorsed engaging in sex at first meeting (28.2%), exchanging sex (5.1%), and self drug use during sex (13.3%; Table 3).

Discussion

In this study, SM female adolescents involved in the juvenile legal system had greater behavioral health needs in terms of psychosocial functioning and risk behaviors than their heterosexual counterparts. These differences align with our hypothesis that SM female adolescents would demonstrate greater severity of psychiatric symptoms and participation in risk behaviors than their heterosexual counterparts, including clinically significant PTSD and emotional symptoms, difficulties with anger control and personal adjustment, and higher reported engagement in substance use, SIB, and risky sexual behaviors. These results suggest that SM female adolescents may represent the intersection of two minoritized groups within the legal system that individually face significant inequities, the overlap of which has not been previously studied in this manner. In considering the existing literature related to MST and intersectionality theory (Bowleg, 2012; Crenshaw, 1989; Goldbach et al., 2014; Marshal et al., 2008; Meyer, 2003), legally involved SM female adolescents may be experiencing unique stressors based on their intersecting marginalized identities (e.g., discrimination, harassment), which in turn are associated with changes in functioning and behaviors (e.g., crimes of survival, maladaptive coping skills) that contribute to disparities in mental health and behavioral outcomes seen in this study. Additionally, our sample contained an overrepresentation of racial and ethnic minorities as compared to the demographics of the surrounding geographic area (HRSA, 2022) within the context of the legal system, which has a history of racial and ethnic inequities (Tolou-Shams et al., 2023; Winkelman et al., 2017). Future research should examine the effects of having multiple, intersecting minoritized identities and the role of resilience and sociohistorical context in these effects (Bowleg, 2012; Crenshaw, 1989; McConnell et al., 2018; Meyer, 2003).

The elevated rates of substance use, SIB, and psychiatric symptoms among SM female adolescents in this study underscore the critical need for early and dual treatment of mental health concerns and substance use. Among legally involved youth, prior studies have demonstrated that 70% meet criteria for psychiatric diagnoses (Shufelt & Cocozza, 2006) and 50% or more report history of substance use (Castrucci & Martin, 2002; Shufelt & Cocozza, 2006; Teplin et al., 2005). Similarly high rates of substance use and mental health symptoms have been shown even at the time of first court contact (Tolou-Shams et al., 2019; Tolou-Shams, Folk, Tolou-Shams et al., 2021a, b). SM female adolescents, specifically, have been shown to have a 400% greater odds of engaging in substance use as compared to their heterosexual peers (Marshal et al., 2012) and those in the legal system have significantly elevated rates of suicide and SIB (Vieira et al., 2023). It is notable that the SM female adolescents in this study, demonstrated greater behavioral health needs, including more psychiatric symptoms, SIB, and use of multiple substances than their heterosexual peers with similar gender identity and legal status, including being at the time of initial involvement with the legal system. Associations between substance use, psychiatric symptoms, and delinquency have been established in the literature and treatment for these conditions is increasingly being incorporated into recidivism prevention efforts (Davis et al., 2015; Perry et al., 2019). Furthermore, initial contact with the legal system may serve as an opportunity to

connect adolescents to mental health and substance use treatment for the first time (Tolou-Shams et al., 2019). However, gaps do remain in connecting adolescents to services, particularly for substance use (Belenko et al., 2017), as well as in providing tailored, dual-diagnosis care for SM female adolescents. Unfortunately, some services provided to legally involved SM youth have been associated with harm and discriminatory practices, including inappropriate referral to sex offender treatment (Majd et al., 2009). Sensitivity to the needs and identities of SM youth is required in both screening processes and future programming to prevent further victimization.

Unsafe sexual practices are an additional health concern for legally involved SM female adolescents. Both SM youth and adolescents in the legal system report greater engagement in sexual risk behaviors as compared to their peers (Castrucci & Martin, 2002; Conrad et al., 2017; Kann et al., 2018) and there are known associations between sexual risk, psychiatric symptoms, and substance use (Castrucci & Martin, 2002; Teplin et al., 2005; Tolou-Shams et al., 2019). Furthermore, the time of first legal system contact has been shown to be a vulnerable period for adolescents in terms of sexual health risks (Tolou-Shams et al., 2019). Our results add to these concerns as SM female adolescents had elevated rates of sexual intercourse, sexual encounters at first meeting, exchanging sex, and drug use during sex compared to heterosexual adolescents. They also reported lower use of condoms but endorsed similar rates of sex with male partners as heterosexual adolescents. Consequently, the risk for unintended pregnancy remains, and any unprotected sex presents as an additional STI and HIV risk. These findings suggest that gender and sexual identity-responsive health services are needed including at the time of initial contact with the legal system (Tolou-Shams et al., 2022).

Previous research on differences in delinquency among youth with varying sexual orientations within the legal system has produced equivocal results (Barnett et al., 2022; Hirschtritt et al., 2018). One study conducted with adolescent males and females found no evidence of differences in engagement in delinquent behavior (Hirschtritt et al., 2018), while another with adolescent females only indicated that SM status was associated with higher levels of delinquency (Barnett et al., 2022). In this study, SM female adolescents endorsed higher engagement in delinquent behaviors than their heterosexual counterparts, but this finding did not reach clinical significance when controlling for age. However, as this study was conducted at the time of the adolescents' first contact with the juvenile legal system, further longitudinal data is needed to see if this difference becomes more meaningful over time.

Interestingly, there was also a lack of difference between the two groups in reported school problems. This finding is surprising as SM adolescents have reported experienced bullying and victimization in school environments (Majd et al., 2009). It is possible that our measure regarding school problems may not have captured the specific nature of the school difficulties faced by SM adolescents as compared to their peers as it largely asked about generalized feelings about school (e.g., "I hate school") and not more explicitly about the unique experiences of SM female adolescents.

Limitations

While this study is one of the first to provide quantitative information regarding the behavioral health needs of SM female adolescents involved in the legal system, there are some limitations. These include its cross-sectional design, restricted geographic sampling, and small sample size. Additionally, the utilization of self-report measures has the potential to introduce recall and social desirability biases. Furthermore, this study's operationalization of SM status introduced additional nuances. Defining SM status has been variable throughout the literature, with some investigations utilizing only self-report of SM status (Jonnson et al., 2019) and others employing broader definitions that encompass non-heterosexual behavior and attraction as well as gender nonconformity (Barnett et al., 2022; Himmelstein & Bruckner, 2011; Hirschtritt et al., 2018; Irvine, 2010; Kann et al., 2018). While our broad inclusion of self-reported non-heterosexual sexual and romantic orientation, behaviors, and/or attraction may have contributed to this study having a higher percentage of SM female adolescents than have been reported in some other samples (Jonnson et al., 2019), it does better account for the fluid and multi-dimensional nature of sexual orientation (Barnett et al., 2022; Himmelstein & Bruckner, 2011; Kann et al., 2018). Additionally, although about a decade has passed between when the data utilized in this study was collected and this current publication, it is still worth analyzing as there are few studies which examine the behavioral health needs of SM female adolescents with legal involvement, despite progress in the field. Nevertheless, our results do align with studies done in similar settings (Barnett et al., 2022; Hirschtritt et al., 2018; Vieira et al., 2023) and with the general consensus that SM female adolescents are over-represented and under-recognized within the juvenile legal system (Jonnson et al., 2019; Majd et al., 2009).

Conclusions

The results of this current study emphasize the importance of improving our understanding of SM female adolescents who may represent the intersection of two groups that individually face significant inequities and

marginalization within the juvenile legal system. They also highlight the need for screening practices both within the juvenile legal system and healthcare settings to identify SM female adolescents in a manner that is culturally sensitive, clinically informative, and does not contribute to further victimization. Future work should aim to develop and tailor interventions to address the needs of this population, as previous work in providing gender-responsive care has shown promise (Tolou-Shams et al., 2021), yet the literature contains few evidence-based, identity-responsive interventions targeted towards SM adolescents, including for females involved in the juvenile legal system.

Author contributions

E.O., L.W., and L.B. wrote the main manuscript. E.O. prepared the tables. E.O., L.B., and L.W. completed data analysis and interpretation. E.O., L.B., L.W., J.F., and M.T. contributed to the conception of the work. J.F., D.K., L.B., and M.T. contributed to the acquisition of the data and funding. J.F., M.T., A.B., and D.K. substantively revised the manuscript and the tables. All of the authors have reviewed and approved the submitted version and have agreed to be accountable for the integrity of the work.

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Data availability

The data that is discussed in this paper is included in the Results section as well as the Tables. Due to the confidential nature of the data utilized in this study (e.g., mental health, sexual health, and substance use history) and the need to protect participant privacy, information beyond what is in this paper cannot be shared openly. If there are any questions or concerns about this study's data, please contact the corresponding author who will be able to provide assistance.

Declarations

Ethics approval and consent to participate

The protocol for this research study was approved by the sponsoring institution and collaborating sites' committee of Human Subjects in accordance with the principles contained in the Belmont Report. A federal Certificate of Confidentiality was obtained to protect participant privacy. Informed consent and assent were then obtained from caregivers and adolescents, respectively. There were no penalties or adverse consequences for the adolescent participants if they declined participation in this study at any point in the process.

Competing interests

The authors declare no competing interests.

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References

Barnert, E. S., Perry, R., & Morris, R. E. (2016). Juvenile incarceration and health. *Academic Pediatric*, *16*(2), 99–109. https://doi.org/10.1016/j.acap.2015.09.004

Barnett, A. P., Houck, C. D., Barker, D., & Rizzo, C. J. (2022). Sexual minority status, bullying exposure, emotion regulation difficulties, and delinquency among Court-Involved adolescent girls. *Journal of Youth and Adolescence*, *51*(3), 471–485. https://doi.org/10.1007/s10964-021-01542-9

Belenko, S., Knight, D., Wasserman, G. A., Dennis, M. L., Wiley, T., Taxman, F. S., Oser, C., Dembo, R., Robertson, A. A., & Sales, J. (2017). The juvenile justice behavioral health services cascade: A new framework for measuring unmet substance use treatment services needs among adolescent offenders. *Journal of Substance Abuse Treatment*, *74*, 80–91. https://doi.org/10.1016/j.jsat.2016.12.012

Bouris, A., Everett, B. G., Heath, R. D., Elsaesser, C. E., & Neilands, T. B. (2016). Effects of victimization and violence on suicidal ideation and behaviors among sexual minority and heterosexual adolescents. *LGBT Health*, *3*(2), 153–161. https://doi.org/10.1089/lgbt.2015.0037

Bowleg, L. (2012). The problem with the phrase women and minorities: intersectionality-an important theoretical framework for public health. *American Journal of Public Health*, *102*(7), 1267–1273. https://doi.org/10.2105/AJPH.2012.300750

Branstrom, R., & Pachankis, J. E. (2018). Sexual orientation disparities in the co-occurrence of substance use and psychological distress: A National population-based study (2008–2015). *Social Psychiatry and Psychiatric Epidemiology*, *53*(4), 403–412. https://doi.org/10.1007/s00127-018-1491-4

Castrucci, B. C., & Martin, S. L. (2002). The association between substance use and risky sexual behaviors among incarcerated adoelscents. *Maternal and Child Health Journal*, *6*(1), 43–47.

Conrad, S. M., Tolou-Shams, M., Rizzo, C. J., Placella, N., & Brown, L. K. (2014). Gender differences in recidivism rates for juvenile justice youth: The impact of sexual abuse. *Law and Human Behavior*, *38*(4), 305–314. https://doi.org/10.1037/lhb0000062

Conrad, S. M., Queenan, R., Brown, L. K., & Tolou-Shams, M. (2017). Psychiatric symptoms, substance use, trauma, and sexual risk: A brief report of gender differences in Marijuana-Using juvenile offenders. *J Child Adolesc Subst Abuse*, *26*(6), 433–436. https://doi.org/10.1080/1067828X.2017.1322017

Corp, I. (2019). IBM SPSS Statistics for Windows. In (Vol. IBM Corp). Armonk, NY.

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *University of Chicago Legal Forum*, *1989(1*, 139–167. http://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8

Davis, M., Sheidow, A. J., & McCart, M. R. (2015). Reducing recidivism and symptoms in emerging adults with serious mental health conditions and justice system involvement. *The Journal of Behavioral Health Services & Research*, *42*(2), 172–190. https://doi.org/10.1007/s11414-014-9425-8

Development Services Group, I (2023). *Girls in the Juvenile Justice System. Literature Review: A Product of the Model Programs Guide*. Office of Juvenile Justice and Delinquency Prevention. Retrieved December 18 from https://ojjdp.ojp.gov/model-programs-guide/literature-reviews/girls-juvenile-justice-system

Donenberg, G. R., Emerson, E., Bryant, F. B., Wilson, H., & Weber-Shifrin, E. W. (2001). Understanding AIDS-risk behavior among adolescents in psychiatric care: Links to psychopathology and peer relationships. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*(6), 624–653. https://doi.org/10.1097/00004583-200106000-00008

Donohew, L., Zimmerman, R., Cupp, P. S., Novak, S., Colon, S., & Abell, R. (2000). Sensation seeking, impulsive decision-making, and risky sex: Implications for risk-taking and design of interventions. *Personality and Individual Differences*, *28*(6), 1079–1091. https://doi.org/10.1016/S0191-8869(99)00158-0

Elliott, D. S., Huizinga, D., & Ageton, S. S. (1982). *Explaining delinquency and drug use*. The National Youth Survey Project Report No. 21.

Fish, J. N., Russell, B. S., Watson, R. J., & Russell, S. T. (2020). Parent-child relationships and sexual minority youth: Implications for adult alcohol abuse. *Journal of Youth and Adolescence*, *49*(10), 2034–2046. https://doi.org/10.1007/s10964-020-01299-7

Goldbach, J. T., Tanner-Smith, E. E., Bagwell, M., & Dunlap, S. (2014). Minority stress and substance use in sexual minority adolescents: A meta-analysis. *Prevention Science*, *15*(3), 350–363. https://doi.org/10.1007/s11121-013-0393-7

Hamilton, Z. K., Sullivan, C. J., Veysey, B. M., & Grillo, M. (2007). Diverting multi-problem youth from juvenile justice: Investigating the importance of community influence on placement and recidivism. *Behavioral Sciences & the Law*, *25*(1), 137–158. https://doi.org/10.1002/bsl.720

Himmelstein, K. E., & Bruckner, H. (2011). Criminal-justice and school sanctions against nonheterosexual youth: A National longitudinal study. *Pediatrics*, *127*(1), 49–57. https://doi.org/10.1542/peds.2009-2306

Hirschtritt, M. E., Dauria, E. F., Marshall, B. D. L., & Tolou-Shams, M. (2018). Sexual minority, Justice-Involved youth: A hidden population in need of integrated mental health, substance use, and sexual health services. *Journal of*

Adolescent Health, *63*(4), 421–428. https://doi.org/10.1016/j.jadohealth.2018.05.020

Hirschtritt, M. E., Folk, J. B., Marshall, B. D. L., Li, Y., & Tolou-Shams, M. (2021). Cannabis use among Court-Involved minority sexual orientation and gender identity adolescents. *The Journal of the American Academy of Psychiatry and the Law*, *49*(3), 350–360. https://doi.org/10.29158/JAAPL.200104-20

HRSA *Overview of the State-Rhode Island-2022*. HRSA Maternal & Child Health. Retrieved January 16 from https://mchb.tvisdata.hrsa.gov/Narratives/Overview/80473301-e7a7-4b23-944b-6f47bdb5424f#:~:text=The%20racial%20distribution%20in%20Rhode,Island%20Residents%20are%20immigrants.

Irvine, A. (2010). We've had three of them: Addressing the invisibility of lesbian, gay, bisexual and gender Non-Conforming youths in the juvenile justice system. *Columbia Journal of Gender and Law*, *19*(3), 675–701.

Jonnson, M. R., Bird, B. M., Li, S. M. Y., & Viljoen, J. L. (2019). The prevalence of sexual and gender minority youth in the justice system: A systematic review and Meta-Analysis. *Criminal Justice and Behavior*, *46*(7), 999–1019. https://doi.org/10.1177/0093854819848803

Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., Lowry, R., Chyen, D., Whittle, L., Thornton, J., Lim, C., Bradford, D., Yamakawa, Y., Leon, M., Brener, N., & Ethier, K. A. (2018). Youth risk behavior Surveillance - United States, 2017. *MMWR Surveill Summ*, *67*(8), 1–114. https://doi.org/10.15585/mmwr.ss6708a1

LeBeau, R., Mischel, E., Resnick, H., Kilpatrick, D., Friedman, M., & Craske, M. (2014). Dimensional assessment of posttraumatic stress disorder in DSM-5. *Psychiatry Research*, *218*(1–2), 143–147. https://doi.org/10.1016/j.psychres.2014.03.032

Majd, K., Marksamer, J., & Reyes, C. (2009). *Hidden injustice: Lesbian, gay, bisexual and transgender youth in juvenile courts*. National Juvenile Defender Ctr, National Ctr for Lesbian Rights. http://www.modelsforchange.net/publications/237/Hidden_Injustice_Lesbian_Gay_BisexBis_and_Transgender_Youth_in_Juvenile_Courts.pdf

Marshal, M. P., Friedman, M. S., Stall, R., King, K. M., Miles, J., Gold, M. A., Bukstein, O. G., & Morse, J. Q. (2008). Sexual orientation and adolescent substance use: A meta-analysis and methodological review. *Addiction*, *103*(4), 546–556. https://doi.org/10.1111/j.1360-0443.2008.02149.x

Marshal, M. P., Sucato, G., Stepp, S. D., Hipwell, A., Smith, H. A., Friedman, M. S., Chung, T., & Markovic, N. (2012). Substance use and mental health disparities among sexual minority girls: Results from the Pittsburgh girls study. *Journal of Pediatric and Adolescent Gynecology*, *25*(1), 15–18. https://doi.org/10.1016/j.jpag.2011.06.011

McConnell, E. A., Janulis, P., Phillips, G. 2nd, Truong, R., & Birkett, M. (2018). Multiple minority stress and LGBT community resilience among sexual minority men. *Psychol Sex Orientat Gend Divers*, *5*(1), 1–12. https://doi.org/10.1037/sgd0000265

McReynolds, L. S., Schwalbe, C. S., & Wasserman, G. A. (2010). The contribution of psychiatric disorder to juvenile recidivism. *Criminal Justice and Behavior*, *37*(2), 204–216. https://doi.org/10.1177/0093854809354961

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Needham, B. L., & Austin, E. L. (2010). Sexual orientation, parental support, and health during the transition to young adulthood. *Journal of Youth and Adolescence*, *39*(10), 1189–1198. https://doi.org/10.1007/s10964-010-9533-6

NIDA (2016). *Self-report delinquency scale*. National Institute on Drug Abuse. Retrieved September 21 from https://datashare.nida.nih.gov/instrument/self-report-delinquency-scale)

Pearson, J., & Wilkinson, L. (2013). Family relationships and adolescent well-being: Are families equally protective for same-sex attracted youth? *Journal of Youth and Adolescence*, *42*(3), 376–393. https://doi.org/10.1007/s10964-012-9865-5

Perry, R. C., & Morris, R. E. (2014). Health care for youth involved with the correctional system. *Primary Care*, *41*(3), 691–705. https://doi.org/10.1016/j.pop.2014.05.007

Perry, A. E., Martyn-St James, M., Burns, L., Hewitt, C., Glanville, J. M., Aboaja, A., Thakkar, P., Santosh Kumar, K. M., Pearson, C., Wright, K., & Swami, S. (2019). Interventions for drug-using offenders with co-occurring mental health problems. *Cochrane Database Systematic Review*, *10*(10), CD010901. https://doi.org/10.1002/14651858.CD010901.pub3

Reynolds, C. R., & Kamphaus, R. W. (2006). *BASC-2: Behavior Assessment System for Children* (2nd edition ed.). Pearson Education, Inc.

Shufelt, J. L., & Cocozza, J. J. (2006). *Youth with mental health disorders in the juvenile justice system: Results from a Multi-State prevalence study*. Research and Program Brief.

Teplin, L. A., Elkington, K. S., McClelland, G. M., Mericle, A. A., & Washburn, J. J. (2005). Major mental disorders, substance use disorders, comorbidity, and HIV-AIDS risk behaviors in juvenile detainees. *Pscyhiatr Serv*, *56*(7), 823–828.

Thornberry, T. P., & Krohn, M. D. (2000). The Self-Report method for measuring delinquency and crime. *Measurement and Analysis of Crime and Justice*, *4*, 33–83.

Tolou-Shams, M., Brown, L. K., Marshall, B. D. L., Dauria, E., Koinis-Mitchell, D., Kemp, K., & Poindexter, B. (2019). Substance use, sexual risk and mental health. *J Child Adolesc Subst Abuse*, *28*(5), 291–303. https://doi.org/10.1080/1067828x.2020.1774023. The Behavioral Health Needs of First-Time Offending Justice-I nvolved Youth.

Tolou-Shams, M., Dauria, E. F., Folk, J. B., Shumway, M., Marshall, B. D. L., Rizzo, C. J., Messina, N., Covington, S., Haack, L. M., Chaffee, T., & Brown, L. K. (2021a). VOICES: An efficacious trauma-informed, gender-responsive cannabis use intervention for justice and school-referred girls with lifetime substance use history. *Drug and Alcohol Dependence*, *228*, 108934. https://doi.org/10.1016/j.drugalcdep.2021.108934

Tolou-Shams, M., Folk, J., Marshall, B., Dauria, B. D. L., Kemp, E. F., Li, K., Koinis-Mitchell, Y., D., & Brown, L., K (2021b). Predictors of cannabis use among first-time justice-involved youth: A cohort study. *Drug and Alcohol Dependence*, *225*, 108754. https://doi.org/10.1016/j.drugalcdep.2021.108754

Tolou-Shams, M., Dauria, E. F., Rosen, R. K., Clark, M. A., Spetz, J., Levine, A., Marshall, B. D. L., Folk, J., Gopalakrishnan, B., & Nunn, L. (2022). A., & project em, P. D. e. c. p. Bringing juvenile justice and public health systems together to meet the sexual and reproductive health needs of justice-involved youth. *Am J Orthopsychiatry*, *92*(2), 224–235. https://doi.org/10.1037/ort0000604

Tolou-Shams, M., Folk, J. B., Holloway, E. D., Ordorica, C. M., Dauria, E. F., Kemp, K., & Marshall, B. D. L. (2023). Psychiatric and Substance-Related problems predict recidivism for First-Time Justice-Involved youth. *The Journal of the American Academy of Psychiatry and the Law*, *51*(1), 35–46. https://doi.org/10.29158/JAAPL.220028-21

Vieira, A., Sheerin, K. M., Williamson-Butler, S., Pederson, C. A., Thompson, E. C., Soriano, S., Wolff, J. C., Spirito, A., & Kemp, K. (2023). Non-suicidal Self-Injury, suicidal behaviors, and mental health symptoms among sexual minority youth with juvenile justice system involvement. *Children and Youth Services Review*, *155*. https://doi.org/10.1016/j.childyouth.2023.107196

Wilson, B. D. M., Jordan, S. P., Meyer, I. H., Flores, A. R., Stemple, L., & Herman, J. L. (2017). Disproportionality and disparities among sexual minority youth in custody. *Journal of Youth and Adolescence*, *46*(7), 1547–1561. https://doi.org/10.1007/s10964-017-0632-5

Winkelman, T. N. A., Frank, J. W., Binswanger, I. A., & Pinals, D. A. (2017). Health conditions and Racial differences among Justice-Involved adolescents, 2009 to 2014. *Academic Pediatric*, *17*(7), 723–731. https://doi.org/10.1016/j.acap.2017.03.003

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