



Mental Health Problems in Girls Who Committed Sexual Offenses: Similarities and Differences Compared to Girls With Non-sex Offenses and Boys With Sex Offenses

Madleina Manetsch^{1*}, Rebecca J. Nelson Aguiar², Daniel Hermann¹, Claudia van der Put³, Thomas Grisso⁴ and Cyril Boonmann^{1,5}

OPEN ACCESS

Edited by:

Daniel Boduszek,
University of Social Sciences and
Humanities, Poland

Reviewed by:

Elisa Puvia,
Independent Researcher,
Rome, Italy
Charlotte Lennox,
The University of Manchester,
United Kingdom

*Correspondence:

Madleina Manetsch
madleina.manetsch@upk.ch

Specialty section:

This article was submitted to
Forensic and Legal Psychology,
a section of the journal
Frontiers in Psychology

Received: 07 June 2021

Accepted: 12 November 2021

Published: 17 December 2021

Citation:

Manetsch M, Nelson Aguiar RJ,
Hermann D, van der Put C,
Grisso T and Boonmann C (2021)
Mental Health Problems in Girls Who
Committed Sexual Offenses:
Similarities and Differences
Compared to Girls With Non-sex
Offenses and Boys With Sex
Offenses.
Front. Psychol. 12:721927.
doi: 10.3389/fpsyg.2021.721927

¹Department of Forensic Child and Adolescent Psychiatry, Psychiatric University Hospitals (UPK) Basel, Basel, Switzerland, ²Department of Psychiatry and Health Behaviors, Augusta University, Augusta, GA, United States, ³Research Institute Child Development and Education, University of Amsterdam, Amsterdam, Netherlands, ⁴Center for Mental Health Services Research, Department of Psychiatry, University of Massachusetts Medical School, Worcester, MA, United States, ⁵Child and Adolescent Research Department, Psychiatric University Hospitals (UPK) Basel, Basel, Switzerland

Female juvenile offenders have only recently shifted into the focus of research. Moreover, a specific subgroup, female juveniles who sexually offended (JSO) are greatly overlooked. Therefore, there is a dearth of knowledge regarding the characteristics of female JSOs. The aim of the current study was to explore mental health problems (MHP) of female JSOs in more detail. Moreover, we compared their mental health with female juveniles who committed non-sexual offenses (JNSOs) and male JSOs. The sample comprised 33 female JSOs (Mean age 14.5, SD 1.8), 33 age-matched female JNSOs, and 33 age-matched male JSOs. We used the Massachusetts Youth Screening Instrument-version 2 to examine MHP. Although both internalizing and externalizing MHP were not uncommon in female JSOs, they reported fewer problems than female JNSOs. No differences were found between female and male JSOs. With regard to their mental health profile, female JSOs resemble male JSOs more than female JNSOs. These results should be taken into account in the assessment and treatment of this group. However, more research is needed.

Keywords: female juvenile sexual offenders, JSOs, mental health problems, MHP, MAYSI-2

INTRODUCTION

Sexual offenses committed by juvenile females have rarely been the focus of research or clinical practice. This lack of interest is due to various reasons, such as the assumption that females do not commit sexual crimes, the low prevalence of these types of crimes in females, and the belief that sex offenses committed by females are less harmful (Oliver and Holmes, 2015). As Cortoni (2015) noted, offending by females is not a new phenomenon and belittlement of these criminal acts is outdated. Despite the belief that sexual offending behavior is less common

in female compared to male juveniles, Slotboom et al. (2011) found that female and male adolescents reported similar rates of sexual aggression against other people. Furthermore, it has been suggested that many of the sexual offenses committed by females remain unnoticed, undetected, or even ignored by law enforcement (Denov, 2004; Hendriks and Bijleveld, 2004; Vandiver and Kercher, 2004). Still, the number of female offenders entering the juvenile justice system, including female juveniles who committed sex offenses (JSOs), has risen alarmingly (Yeater et al., 2015). Especially dire is the fact that the juvenile justice system (i.e., court, criminal justice, and prison), including assessment and treatment, seems to be more tailored toward male offenders than toward female offenders (Plotch et al., 1996). Therefore, more knowledge regarding female juvenile offenders, including female JSOs, is required. Hence, the main aim of the current paper was to examine mental health problems (MHP) in female JSOs. Additionally, we compare MHP in female JSOs to female juvenile non-sexual offenders (JNSOs) and to male JSOs.

Sexual offending behavior in female adolescents is relatively rare. It has been estimated that female adolescents account for about 5 to 10 percent of all juvenile sexual offenses (Matsuda et al., 1989; Lane and Lobanov-Rostovsky, 1997; Righthand and Welch, 2001; Finkelhor et al., 2009; Slotboom et al., 2011). Female JSOs often choose “victims of convenience” (e.g., family members) and their motives are often not of sexual nature (Oliver and Holmes, 2015). Research has shown that female JSOs have histories of abuse and neglect (Vandiver and Teske, 2006), predominantly experienced sexual victimization (Oliver and Holmes, 2015), with some studies reporting prevalence rates exceeding 80% (Schwartz et al., 2006; McCartan et al., 2011). Other forms of child maltreatment, such as physical abuse, emotional abuse, and/or neglect, were also frequently found (Ray and English, 1995; Kubik et al., 2002; Hickey et al., 2008). Additionally, MHP are highly prevalent in female JSOs (Hunter et al., 1993; Bumby and Bumby, 1997; Mathews et al., 1997; Roe-Sepowitz and Krysik, 2008). For example, in one study (Roe-Sepowitz and Krysik, 2008), almost half of 118 female JSOs had a current mental disorder, received mental health treatment, or took mental health-related medication. Furthermore, 30% reported anger-irritability, 39% depression-anxiety, and 23% suicide ideation problems, and 43% reported traumatic experiences, as measured with the Massachusetts Youth Screening Instrument-2 (MAYSI-2: Grisso and Barnum, 2006). In their summary of the literature, Oliver and Holmes (2015) listed depression, suicidal ideation/attempts, post-traumatic stress disorder, attention-deficit/hyperactivity disorder, and conduct disorder (CD) as frequent mental disorders. In addition, female JSOs often live in dysfunctional families, show inadequate social skills, or have few healthy friendships with their peers (Kubik et al., 2002; Oliver and Holmes, 2015).

The number of studies comparing female JSOs and JNSOs is limited. In one study (Kubik et al., 2002), a sample of 11 girls with sexual offense histories was compared to an age-matched sample of 11 girls with non-sexual victim-involved offense histories. Female JSOs had significantly fewer alcohol and/or drug abuse problems, fighting or aggressive behavior problems,

and school problems, than girls in the non-sexual offending group. In an additional study, Kubik and Hecker (2005) compared 11 female JSOs, 12 female JNSOs, and 21 female non-offenders on cognitive distortions about sexual offending. Cognitive distortions, such as “the offender was not responsible for initiating the sexual contact,” were more common in the sexual offending group than in the other two groups. A third study comparing adolescent girls with and without sexually abusive behavior referred to a forensic mental health outpatient setting (McCartan et al., 2011) found that JSOs were more likely to have a history of abuse, more likely to have a mental disorder, less aggressive, and less self-harmful behavior than JNSOs. Although not statistically significant, mainly due to the large group size difference and the small number of female adolescents with sexually abusive behavior, substance use problems were less common in JSOs. Finally, Van Der Put et al. (2014) compared a sample of 40 girls with sexual offense histories to a sample of 533 girls with non-sexual violent offense histories. They found that female JSOs less often had antisocial friends, family problems (e.g., running away, parental problems, and parenting style), and school problems (e.g., truancy, dropping out, and behavior problems) than female JNSOs. Experienced sexual victimization outside the family and social isolation, however, were more common in the sexual offending group. These results generally suggest that female JSOs show less externalizing, but more internalizing MHP compared to female JNSOs.

Research comparing female and male JSOs is also scarce. In general, female and male JSOs were often found to be similar regarding their criminal histories and psychosocial problems (Bumby and Bumby, 1997; Mathews et al., 1997; Kubik et al., 2002; Van Der Put et al., 2014). Mathews et al. (1997), for example, reported similar rates of prior mental health treatment, runaway behavior, and attempted suicide. Similarly, Van Der Put et al. (2014) found no differences on criminal history, MHP, family problems, peer problems, and school problems. Despite this high degree of similarity, both groups seem to differ in prevalence and context of adverse childhood experiences (Vandiver, 2010). Female JSOs often showed higher rates of experienced physical (Mathews et al., 1997; Kubik et al., 2002) and sexual abuse (Mathews et al., 1997; Kubik et al., 2002; Schwartz et al., 2006) compared to male JSOs. They were also more likely to be sexually victimized by multiple perpetrators and experienced more severe and longer lasting abuse than their male counterparts (Mathews et al., 1997; Schwartz et al., 2006). With regard to their own offending behavior, female JSOs were found to be younger at the time of the offense, had younger victims, were more likely to co-offend, and more likely to be involved in incidents with multiple victims (Finkelhor et al., 2009). Regarding MHP, higher rates of alcohol and/or drug abuse were found in female JSOs compared to male JSOs (Mathews et al., 1997; Van Der Put et al., 2014).

The treatment of JSOs has been the focus of a large part of research for quite some time (Worling, 1998; Seto and Lalumiere, 2010; Dwyer and Letourneau, 2011). Involved professions and researchers agree on the fact that a “one size fits all” approach falls short in view of the heterogeneity of this offender group.

For female JSOs, it is important to understand to what extent they differ from both female JNSOs and male JSOs (Ganon et al., 2010), as this could guide treatment. To the best of our knowledge, there are only two studies in which female JSOs were compared to both female JNSOs and male JSOs with regard to MHP (Kubik et al., 2002; Van Der Put et al., 2014). However, the sample of the study of Kubik et al. (2002) was small, which limits the generalizability. Results of the study of Van Der Put et al. (2014) did not examine MHP in detail.

The aim of the present study was to gain better insight into specific MHP of female JSOs by comparing them with both female JNSOs and male JSOs. More insight into similarities and differences in MHP between these groups could help us to improve the treatment of these juvenile female offenders.

MATERIALS AND METHODS

Procedures

We selected our sample from a study sample originally collected by Maney (2011). Maney's sample included scores made by juvenile offenders on the MAYSI-2 (Grisso and Barnum, 2006). At the time of data collection for Maney's study, 451 juvenile justice facilities in the United States were administering the MAYSI-2 to all youths at entry to their facilities, using a software called MAYSIWARE (Maney and Grisso, 2006). When Maney contacted these facilities, 65 sites provided their MAYSIWARE databases for research use, and these databases were merged to create a single nationwide MAYSIWARE database with 54,716 MAYSI-2 administrations. These sites spanned 17 U.S. states and represented juvenile intakes in probation, detention, and correctional facilities. The MAYSIWARE software program records youth demographics (age, gender, race, and ethnicity), offense information (up to six current charges/offenses leading to involvement in the juvenile justice system), type of facility (probation, detention, or corrections), and adjudication status of the youth (pre-trial or post-adjudication).

Participant Selection

A number of exclusion criteria were used to create our sample from Maney's MAYSIWARE database (see **Figure 1**). First, the sample of female JSOs needed to be identified. There were 13,517 cases of female adolescents from the original sample. In order to categorize our final sample into sexual offenders or non-sexual offenders, cases with missing charge or offense information were excluded, as were cases with minor charges or convictions (e.g., status offenses, breaches of orders; $n=10,658$), resulting in a sample of $n=2,859$. While the MAYSI-2 was validated for 12- to 17-year-olds, only cases with ages above 17 years were excluded from the sample ($n=46$), in order to retain as many cases of female JSOs as possible, without keeping cases closer to adulthood (i.e., 18 and older) than adolescence. This resulted in a sample of girls with full information cases and ages ≤ 17 years of $n=2,813$.

Youth were considered to be JSOs when their MAYSI-2 offense information contained at least one sex offense (e.g.,

sexual abuse of children, rape, or sexual assault) and were considered to be JNSOs when none of their MAYSI-2 offense information showed a sex-related offense. With a working database of 2,813 female adolescent cases, 42 youth cases had "sex offense" entered under charge information and were therefore classified as female JSOs. A total of nine cases were excluded due to user information entered as "test case" ($n=5$), missing information on facility type ($n=2$), invalid MAYSI-2 data ($n=1$), and a final case was excluded after being identified as a duplicate administration. Therefore, the final female JSO sample consisted of 33 cases.

The 2,813 female cleaned cases were used to select a matched sample of 33 general female offenders. The male JSO matching group ($n=33$) was randomly selected from a sample of 334 male JSOs from the original database, created, and utilized in a previous paper comparing male JSOs and JNSOs (Boonmann et al., 2016b).

Participant Characteristics

The sample consisted of 33 female JSOs, 33 female JNSOs, and 33 male JSOs. Participants across groups were matched on age, race/ethnicity, and type of facility. The ages in the sample ranged from 11 to 17 years old, with an average age of 14.5 years ($SD=1.8$; see **Table 1**). The majority of youth were White Non-Hispanic (52.5%), 25.3% were African-American, and 22.2% were Hispanic. Most juvenile offenders were in detention or correctional facilities (69.7%) compared to intake probation (30.3%) at the time of data collection. Thus, this must be taken into account regarding the different settings. Even though participants were not matched on disposition, the three groups did not significantly differ on adjudication status (i.e., pre-trial or post-adjudication), $\chi^2(2, n=99)=2.85, p=0.24$.

Measures

The MAYSI-2 (Grisso and Barnum, 2006) is a 52-item self-report mental health screening tool created for use in the juvenile justice system for youth aged 12- to 17-years-old. Youth report whether each item, referring to thoughts or feelings, has been true for them in the past few months. The MAYSI-2 consists of seven scales (alcohol/drug use, angry-irritable, depressed-anxious, somatic complaints, suicide ideation, thought disturbance, and traumatic experiences). The thought disturbance scale has been developed for boys only. Raw scores are calculated and used to identify young people whose self-report of particular psychological and emotional symptoms reaches the caution or warning level, which have been based on national norms and past research. A score above the caution cutoff suggests that the reported problem falls in the clinically significant range, while the warning cutoff reflects scores higher than those rendered for 90% of youth in the normative sample (Grisso and Barnum, 2006). They can be used by clinicians to determine which young people need further assessment. As a screening tool, it is not intended to be diagnostic of mental disorders. All scales have cutoff scores with the exception of the traumatic experiences scale, which is not considered a clinical scale, but

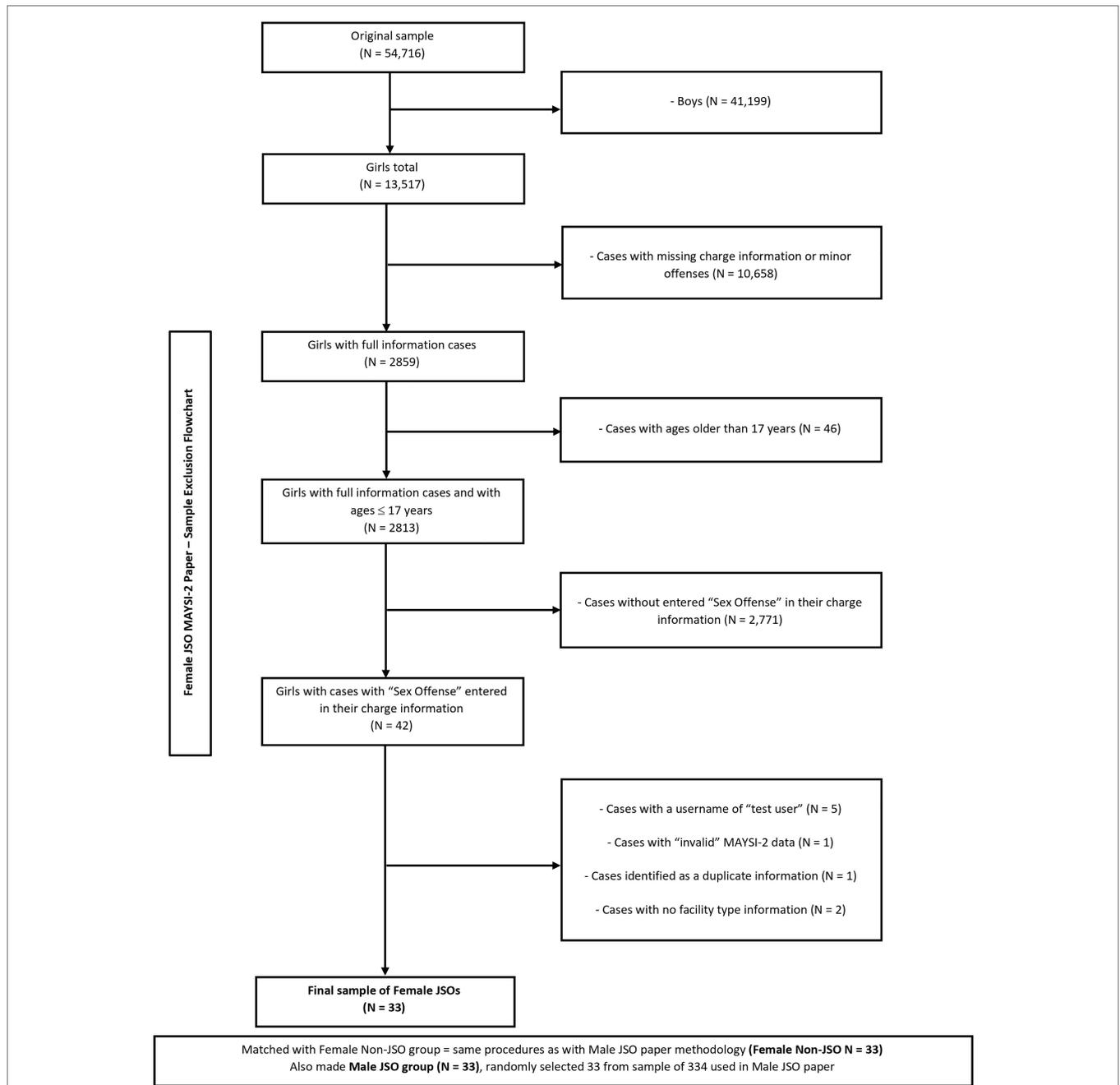


FIGURE 1 | Flowchart illustrating how the final sample was selected and the number of cases resulting after each step of applying the exclusion criteria.

rather a reported history of experienced trauma. The MAYSI-2 has been well researched, and studies have found it to have adequate reliability and validity (Grisso et al., 2012).

Although it differs by facility type (e.g., probation or corrections) and by facility resources (private solo administration or group format), most youth complete the MAYSI-2 within the first 24–72h of admission to a facility. Facilities may also re-administer the tool if a youth leaves the facility and comes back (e.g., a court date) or if a youth displays behavior causing concern (e.g., self-harm).

Data Analysis

First, descriptive statistics of the MAYSI-2 were performed, which included computation of the mean MAYSI-2 scale scores and the percentage of youth above the caution and warning cutoffs. Next, differences in mental health scores between the female JSOs, female JNSOs, and male JSOs were tested by means of ANOVA. The level of statistical significance for all statistical tests was set at $p \leq 0.05$. Subsequently, effect sizes were calculated using Cohen's d.

TABLE 1 | General Descriptives.

N	Total	Female JSO	Female NJSO	Male JSO	F/χ^2	P
	99	33	33	33		
Age						
Mean (SD)	14.5 (1.8)		14.4 (1.8)	14.6 (1.7)	$F=0.21$	0.813
Range	11–17			12–17		
Gender						
Male	33.3%					
Female	66.7%	100%		100%		
Race						
Black	25.3%	18.2%		39.4%	$\chi^2=5.68$	0.225
White	54.6%	63.6%		39.4%		
Other	19.2%	18.2%		15.2%		
Ethnicity						
Non-Hispanic	77.8%	78.8%		81.8%	$\chi^2=0.82$	0.664
Hispanic	22.2%	21.2%		18.2%		
Facility Type						
Probation	30.3%	36.4%		12.7%	$\chi^2=16.2$	0.003
Detention	64.6%	63.6%		72.7%		
Corrections	5.1%	–		15.2%		

TABLE 2 | MAYSI Descriptives for female JSO.

	Min.	Max.	Caution* % (N)	Warning % (N)
Alcohol/Drug Use	0	6	9.1 (3)	3.0 (1)
Angry-Irritable	0	8	33.3 (11)	3.0 (1)
Depressed-Anxious	0	6	33.3 (11)	6.1 (2)
Somatic Complaints	0	6	42.4 (14)	9.1 (3)
Suicide Ideation	0	5	15.2 (5)	9.1 (3)
Thought Disturbance	–	–	–	–
Traumatic Experience	0	5	–	–

*"Caution" means over the caution cutoff but below the warning cutoff.

The classification provided by Cohen (1988) was used to interpret the magnitude of the effect sizes (small: $d=0.20-0.49$; medium: $d=0.50-0.79$; large $d=0.80+$).

RESULTS

In total, 51.5% of female JSOs reported somatic complaints above the caution cutoff. Furthermore, 39.4% reported depressed-anxious problems and 36.3% angry-irritable problems in the clinically significant range (score above the caution cutoff). Finally, 24.3% reported above the caution cutoff on suicide ideation and 12.1% on alcohol and drug use problems. As mentioned before, there is no thought disturbance subscale for females and the traumatic experience subscale has no caution or warning cutoff points (Table 2).

Female JSOs scores were significantly lower than those of female JNSOs on angry-irritable problems, depressed-anxious problems, and somatic complaints (see Table 3). Furthermore, female JSOs did not significantly differ from male JSOs on any MAYSI-2 scale (see Table 3).

DISCUSSION

The main aim of the current paper was to gain better insight into MHP of female JSOs and to compare them with both female JNSOs and male JSOs. Our results showed that both internalizing and externalizing MHP were not uncommon in female JSOs, however, to a lesser extent than their female counterparts without sexual offenses (JNSOs). Compared to male JSOs, no differences were found.

Our results, which showed that JSOs have fewer MHP than JNSOs, are largely consistent with previous research (Kubik et al., 2002; Mccartan et al., 2011; Van Der Put et al., 2014; Van Der Put, 2015). Female JSOs were found to have less externalizing MHP than female JNSOs (Kubik et al., 2002; Mccartan et al., 2011; Van Der Put et al., 2014; Van Der Put, 2015). Results regarding internalizing MHP are somewhat less clear. In line with our results (i.e., less internalizing MHP in female JSOs than in female JNSOs), Mccartan et al. (2011) also found less self-harm. Van Der Put et al. (2014), otherwise, found more social isolation in females JSOs than in female JNSOs. Internalizing MHP are a very broad concept. In the MAYSI-2, anxiety and depression are summarized under one category. Given the increasing interest in internalizing MHP among juvenile offenders and taking into account gender differences as well as differences between offenders with and without sex offenses in this domain, more in-depth research on underlying internalizing MHP among

TABLE 3 | Comparison female JSOs, female NJSOs, and male JSOs.

	Female JSO		Female NJSO			Female JSO		Male JSO		
	<i>M (SD)</i>	<i>M (SD)</i>	<i>t</i>	<i>P</i>	<i>d</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>t</i>	<i>P</i>	<i>d</i>
Alcohol/Drug Use	0.9 (1.7)	1.9 (2.7)	1.70	0.093	0.044	0.9 (1.7)	1.0 (2.1)	0.13	0.898	0.052
Angry-Irritable	3.2 (2.2)	4.9 (2.9)	2.78	0.007	0.066	3.2 (2.2)	2.5 (2.7)	-1.14	0.259	0.284
Depressed-Anxious	2.0 (1.7)	3.2 (2.7)	2.09	0.041	0.053	2.0 (1.7)	1.7 (1.9)	-0.60	0.551	0.133
Somatic Complaints	2.3 (1.8)	3.4 (2.0)	2.28	0.026	0.058	2.3 (1.8)	2.4 (1.7)	0.29	0.775	0.057
Suicide Ideation	0.6 (1.3)	1.2 (1.9)	1.71	0.092	0.037	0.6 (1.3)	0.6 (1.3)	0.000	1.00	0.000
Traumatic Experience	1.4 (1.5)	2.1 (1.8)	1.73	0.088	0.042	1.4 (1.5)	1.6 (1.5)	0.66	0.513	0.133

female JSOs in general, as well as relative to JNSOs, is preferred. In contrast to our results, (i.e., no significant differences in traumatic experiences between both groups) other studies found more own sexual victimization in female JSOs (Mccartan et al., 2011; Van Der Put et al., 2014). A possible explanation could be that, in the current study, traumatic experiences were examined combined, whereas other studies specifically examined sexual abuse (Mccartan et al., 2011; Van Der Put et al., 2014). More research regarding traumatic experiences in female JSOs, potentially in combination with internalizing MHP, is warranted.

Our results regarding MHP in female JSOs compared to male JSOs are also generally in line with previous research (Bumby and Bumby, 1997; Mathews et al., 1997; Kubik et al., 2002; Van Der Put et al., 2014), which showed that female and male JSOs are more similar than different. However, unlike these studies which showed that female JSOs were overall more likely to suffer from sexual abuse, physical abuse, emotional abuse, and neglect than male JSOs, we found no significant differences in traumatic experiences between the two groups. The same argument as mentioned above could apply; in our study, we were not able to subdivide traumatic experiences into specific types of traumatic experiences, such as sexual abuse, physical abuse, emotional abuse, and neglect (Ray and English, 1995; Mathews et al., 1997; Kubik et al., 2002). More in-depth research regarding abuse and neglect and MHP are of great importance, as the relations between childhood sexual abuse and sexual antisocial behavior might be influenced by MHP more than is apparent at first sight (Boonmann et al., 2016a).

Based on our results, a mixed-gender approach for clinical practice could be reflected on. This mixed-gender approach, instead of a focus on “female” in females JSOs, is also in line with the results of Van Der Put (2015) who found more protective and fewer risk factors regarding school, relationships, and family in the female JSO compared to the female JNSO group. This underlines the fact that female JSOs and female JNSOs seem to have different treatment needs. Given the lack of validated treatment programs for female JSOs, it could be argued that (parts of) male JSOs treatment approaches

could be applied for the treatment of female JSOs, although adjusted to suit a female perspective (e.g., by including examples of female JSOs in treatment manuals). In addition, trauma-informed care, which is also receiving increasing attention within the forensic field (Branson et al., 2017; Schmid et al., 2020), could not only benefit female, but also male offenders. Nevertheless, there is a risk for a “one size fits all” approach, and despite the many similarities, the diversity of the group, however, should not be overlooked. Therefore, further research examining the existing variations more in-depth in order to better understand female JSOs is warranted.

The results of the current study should be interpreted in the light of some limitations. First, the current study consisted of a small sample and it is possible that statistically significant results went undetected due to limited statistical power. Although this is an important limitation, it unfortunately is often a reality in this field of research. However, given the lack of research on female JSOs the findings of this study significantly contribute to the literature. More research with larger samples is critical to confirm the results of this study and expand the body of research. In addition, JSOs are a very heterogeneous group (Van Wijk and Boonmann, 2017). This also seems to be the case for female JSOs (Van Der Put, 2013; Van Der Put et al., 2013). However, due to the limited sample size, we were not able to examine subgroups or female JSOs. More research in subgroups, for example based on offender age, victim age, and type of offense (hands-on vs. hands-off, number of offenders), will help us better understand this group of JSOs. Second, we classified female JSOs based on their MAYSI-2 offense history and not on official records. Hence, some young people could be included in (sex offense in MAYSWARE, but acquitted of this offense) or excluded from (history of sexual offending, unknown to MAYSWARE) this group incorrectly. Third, the MAYSI-2 is a self-report instrument and information reported by adolescents could have been biased due to factors such as social desirability, feelings of shame/embarrassment stemming from the stigmatization of having mental health concerns, and cultural norms or other

reasons to avoid expectations surrounding discussing and reporting mental health symptoms. In addition, it should be taken into account that the MAYSI-2 is a screening tool and not a diagnostic classification. Our results therefore only refer to MHP and not to mental disorders.

CONCLUSION

Our results demonstrated that although both externalizing and internalizing MHP were not uncommon in female JSOs, they reported fewer problems than female JNSOs. No differences were found between female and male JSOs. With regard to their mental health profile, female JSOs resemble male JSOs more than female JNSOs. This result could guide clinical conduct and treatment interventions.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, and further inquiries can be directed to the corresponding author.

ETHICS STATEMENT

The sample was constructed from archival intake records consisting of data sets that were obtained from 283 juvenile justice facilities in 19 U.S. states during a three-year period. The MAYSI-2 had been administered to these youths at

the time of their intake into the facilities as part of normal, clinical procedures and use, not for research purposes, when they entered juvenile justice facilities. Therefore, informed consent at the time the MAYSI-2 was administered was not required. Later, when facilities were invited to volunteer their archival data sets for research use, the identity of all youths was removed from each case before the data sets were transferred to the researchers. Compilation of the data base for research use under these conditions (without individual informed consent by youths) was reviewed and approved by the Internal Review Board of the University of Massachusetts Medical School as complying with U.S. federal regulations for ethical protection in research involving human subjects.

AUTHOR CONTRIBUTIONS

MM and CB wrote the first draft of this manuscript. The data set was collected by TG and colleagues, and the data analyses were conducted by RN and CB. All authors participated in the writing of the manuscript and were involved in designing and planning of the study. All authors contributed to the article and approved the submitted version.

ACKNOWLEDGMENTS

We thank the MAYSI Team for the opportunity to analyze our research question on their data set.

REFERENCES

- Boonmann, C., Grisso, T., Guy, L. S., Colins, O. F., Mulder, E. A., Vahl, P., et al. (2016a). Childhood traumatic experiences and mental health problems in sexually offending and non-sexually offending juveniles. *Child Adolesc. Psychiatry Ment. Health* 10:45. doi: 10.1186/s13034-016-0127-2
- Boonmann, C., Nelson, R. J., Dicaldo, F., Jansen, L. M., Doreleijers, T. A., Vermeiren, R. R., et al. (2016b). Mental health problems in young male offenders with and without sex offences: a comparison based on the MAYSI-2. *Crim. Behav. Ment. Health* 26, 352–365. doi: 10.1002/cbm.1961
- Branson, C. E., Baetz, C. L., Horwitz, S. M., and Hoagwood, K. E. (2017). Trauma-informed juvenile justice systems: A systematic review of definitions and core components. *Psychol. Trauma* 9, 635–646. doi: 10.1037/tra0000255
- Bumby, K., and Bumby, N. (1997) in *Adolescent Female Sexual Offenders From Sex Offender: New Insights, Treatment Innovations and Legal Developments Volume II*. eds. K. S. Barbara and R. C. Henry (New Jersey: Civic Research Institute, Inc.), 1–16.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. 2nd Edn. Hillsdale, NJ: Erlbaum.
- Cortoni, F. (2015). What is so special about female sexual offenders? Introduction to the special issue on female sexual offenders. *Sex. Abuse* 27, 232–234. doi: 10.1177/1079063214564392
- Denov, M. S. (2004). The long-term effects of child sexual abuse by female perpetrators: A qualitative study of male and female victims. *J. Interpers. Violence* 19, 1137–1156. doi: 10.1177/0886260504269093
- Dwyer, R. G., and Letourneau, E. J. (2011). Juveniles who sexually offend: recommending a treatment program and level of care. *Child Adolesc. Psychiatr. Clin. N. Am.* 20, 413–429. doi: 10.1016/j.chc.2011.03.007
- Finkelhor, D., Ormrod, R., and Chaffin, M. (2009). *Juveniles Who Commit Sex Offenses Against Minors. Juvenile Justice Bulletin*. Washington, DC: US Government Printing Office, 1–12.
- Ganon, T., Rose, M. R., and Cortoni, F. (2010). “Developments in female sexual offending and considerations for future research and treatment,” in *Female Sexual Offenders: Theory, Research and Treatment*. eds. A. G. Theresa and F. Cortoni (Chichester, UK: Wiley-Blackwell), 181–198.
- Grisso, T., and Barnum, R. (2006). *Massachusetts Youth Screening Instrument t- Version 2. User’s Manual and Technical Report*. (Sarasota, FL: Professional Resource Press).
- Grisso, T., Fusco, S., Paiva-Salisbury, M., Perraut, R., Williams, V., and Barnum, R. (2012). *The Massachusetts Youth Screening Instrument-Version 2 (MAYSI-2): Comprehensive Research Review*. Worcester, MA: University of Massachusetts Medical School.
- Hendriks, J., and Bijleveld, C. C. (2004). Juvenile sexual delinquents: contrasting child abusers with peer abusers. *Crim. Behav. Ment. Health* 14, 238–250. doi: 10.1002/cbm.591
- Hickey, N., Mccrory, E., Farmer, E., and Vizard, E. (2008). Comparing the developmental and behavioural characteristics of female and male juveniles who present with sexually abusive behaviour. *J. Sex. Aggress.* 14, 241–252. doi: 10.1080/13552600802389793
- Hunter, J. A., Lexier, L. J., Goodwin, D. W., Browne, P. A., and Dennis, C. (1993). Psychosexual, attitudinal, and developmental characteristics of juvenile female sexual perpetrators in a residential treatment setting. *J. Child Fam. Stud.* 2, 317–326. doi: 10.1007/BF01321228
- Kubik, E. K., and Hecker, J. E. (2005). Cognitive distortions about sex and sexual offending: a comparison of sex offending girls, delinquent girls, and girls from the community. *J. Child Sex. Abus.* 14, 43–69. doi: 10.1300/J070v14n04_03

- Kubik, E. K., Hecker, J. E., and Righthand, S. (2002). Adolescent females who have sexually offended: comparisons with delinquent adolescent female offenders and adolescent males who sexually offend. *J. Child Sex. Abus.* 11, 63–83. doi: 10.1300/J070v11n03_04
- Lane, S., and Lobanov-Rostovsky, C. (1997) in *Special Populations: Children, Females, the Developmentally Disabled, and Violent Youth From Juvenile Sexual Offending: Causes, Consequences, and Correction*. eds. G. Ryan and S. Lane (New York, John Wiley & Sons, Inc.), 322–359.
- Maney, S.M. (2011). *Violent and Nonviolent Juvenile Offenders: Comparisons Concerning Self-Report of Mental Health Symptoms and Response Styles*. United States: Massachusetts School of Professional Psychology.
- Maney, S., and Grisso, T. (2006). *MAYSIWARE User's Guide: The Electronic Version of the Massachusetts Youth Screening Instrument-Second Version (MAYSI-2)*. Sarasota, FL: Professional Resource Press.
- Mathews, R., Hunter, J. A., and Vuz, J. (1997). Juvenile female sexual offenders: clinical characteristics and treatment issues. *Sex. Abus.* 9, 187–199. doi: 10.1177/107906329700900304
- Matsuda, B., Rasmussen, L.A., and Dibble, A. (1989). *The Utah Report on Juvenile Sex Offenders*. Salt Lake City, UT: Utah State Juvenile Court.
- Mccartan, F. M., Law, H., Murphy, M., and Bailey, S. (2011). Child and adolescent females who present with sexually abusive behaviours: A 10-year UK prevalence study. *J. Sex. Aggress.* 17, 4–14. doi: 10.1080/13552600.2010.488302
- Oliver, B. E., and Holmes, L. (2015). Female juvenile sexual offenders: understanding who they are and possible steps That may prevent Some girls From offending. *J. Child Sex. Abus.* 24, 698–715. doi: 10.1080/10538712.2015.1058875
- Plotch, A., Hahn, J., and Reis, S. (1996). *Prevention and Parity: Girls in Juvenile Justice*. Washington: US Department of Justice.
- Ray, J. A., and English, D. J. (1995). Comparison of female and male-children with sexual-behavior problems. *J. Youth Adolesc.* 24, 439–451. doi: 10.1007/BF01537190
- Righthand, S., and Welch, C. (2001). *Juveniles Who Have Sexually Offended: A Review of the Professional Literature: Report. Office of Juvenile Justice and Delinquency Prevention*. Washington, DC: Department of Justice.
- Roe-Sepowitz, D., and Krysiak, J. (2008). Examining the sexual offenses of female juveniles: The relevance of childhood maltreatment. *Am. J. Orthopsychiatry* 78, 405–412. doi: 10.1037/a0014310
- Schmid, M., Ludtke, J., Dolitzsch, C., Fischer, S., Eckert, A., and Fegert, J. M. (2020). Effect of trauma-informed care on hair cortisol concentration in youth welfare staff and client physical aggression towards staff: results of a longitudinal study. *BMC Public Health* 20:21. doi: 10.1186/s12889-019-8077-2
- Schwartz, B. K., Cavanaugh, D., Pimental, A., and Prentky, R. (2006). Descriptive study of precursors to sex offending among 813 boys and girls: antecedent life experiences. *Vict. Offenders* 1, 61–77. doi: 10.1080/15564880500498986
- Seto, M. C., and Lalumiere, M. L. (2010). What is so special about male adolescent sexual offending? A review and test of explanations through meta-analysis. *Psychol. Bull.* 136, 526–575. doi: 10.1037/a0019700
- Slotboom, A. M., Hendriks, J., and Verbruggen, J. (2011). Contrasting adolescent female and male sexual aggression: A self-report study on prevalence and predictors of sexual aggression. *J. Sex. Aggress.* 17, 15–33. doi: 10.1080/13552600.2010.544413
- Van Der Put, C. E. (2013). The prevalence of risk factors for general recidivism in female adolescent sexual offenders: a comparison of three subgroups. *Child Abuse Negl.* 37, 691–697. doi: 10.1016/j.chiabu.2013.05.010
- Van Der Put, C. E. (2015). Female adolescent sexual and nonsexual violent offenders: a comparison of the prevalence and impact of risk and protective factors for general recidivism. *BMC Psychiatry* 15:236. doi: 10.1186/s12888-015-0615-6
- Van Der Put, C. E., Van Vugt, E. S., Stams, G. J., Dekovic, M., and Van Der Laan, P. H. (2013). Differences in the prevalence and impact of risk factors for general recidivism between different types of juveniles who have committed sexual offenses (JSOs) and juveniles who have committed nonsexual offenses (NSOs). *Sex. Abus.* 25, 41–68. doi: 10.1177/1079063212452615
- Van Der Put, C., Van Vugt, E. S., Stams, G. J., and Hendriks, J. (2014). Psychosocial and developmental characteristics of female adolescents who have committed sexual offenses. *Sex. Abus.* 26, 330–342. doi: 10.1177/1079063213492342
- Van Wijk, A. P., and Boonmann, C. (2017). “Juveniles who sexually abuse: The search For distinctive features,” in *The Safer Society Handbook of Assessment and Treatment of Adolescents Who Have Sexually Offended*. eds. S. Righthand and W. D. Murphy (Brandon, VT: Safer Society Press), 49–76.
- Vandiver, D. M. (2010). Assessing gender differences and co-offending patterns of a predominantly “male-oriented” crime: a comparison of a cross-national sample of juvenile boys and girls arrested for a sexual offense. *Violence Vict.* 25, 243–264. doi: 10.1891/0886-6708.25.2.243
- Vandiver, D. M., and Kercher, G. (2004). Offender and victim characteristics of registered female sexual offenders in Texas: a proposed typology of female sexual offenders. *Sex. Abus.* 16, 121–137. doi: 10.1177/107906320401600203
- Vandiver, D. M., and Teske, R. (2006). Juvenile female and male sex offenders: a comparison of offender, victim, and judicial processing characteristics. *Int. J. Offender Ther. Comp. Criminol.* 50, 148–165. doi: 10.1177/0306624X05277941
- Worling, J. R. (1998). “Adolescent sexual offender treatment at the SAFE-T Program,” in *Sourcebook of Treatment Programs for Sexual Offenders*. eds. L. M. Williams, M. F. Yolanda, M. S. Hudson and W. Tony (New York: Springer), 353–365.
- Yeater, E. A., Montanaro, E. A., and Bryan, A. D. (2015). Predictors of sexual coercion and alcohol use among female juvenile offenders. *J. Youth Adolesc.* 44, 114–126. doi: 10.1007/s10964-014-0166-z

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Copyright © 2021 Manetsch, Nelson Aguiar, Hermann, van der Put, Grisso and Boonmann. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.