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Juvenile probation officers (JPOs) are increasingly using risk/needs assessments to evaluate delinquency risk, identify criminogenic needs and specific responsivity factors, and use this information in case planning. Justice-involved youth are exposed to traumatic events and experience traumatic stress symptoms at a high rate; such information warrants attention during the case planning process. The extent to which JPOs identify specific responsivity factors, in general, and trauma history, specifically, when scoring risk/need assessments is understudied. In the current study, 147 JPOs reviewed case vignettes that varied by the adolescents' gender (male vs. female), traumatic event exposure (present vs. absent), and traumatic stress symptoms (present vs. absent), and then scored the YLS/CMI and developed case plans based on that information. JPOs who received a vignette that included trauma information identified a higher number of trauma-specific responsivity factors on the YLS/CMI. Despite an overall high needs match ratio (57.2%), few JPOs prioritized trauma as a target on case plans. The findings underscore the importance of incorporating trauma screening into risk/needs assessment and case planning.

Public Significance Statement
Juvenile probation officers (JPOs) who received information about trauma exposure and posttraumatic stress symptoms were able to identify that information on a risk assessment instrument. Despite JPOs' ability to recognize such information, they did not prioritize trauma as a rehabilitation target during the case planning process.

Keywords: juvenile justice, responsivity, risk assessment, RNR, trauma

Approximately 1.5 million youth under the age of 18 are arrested each year (Sickmund & Puzzanchera, 2014). Regardless of whether they are detained or released, the most common disposition in the juvenile justice system is supervised probation in the community (Puzzanchera & Hockenberry, 2013). Whether immediately following disposition or postrelease from an out-of-home placement, many justice-involved youth are supervised by juvenile probation officers (JPOs) in the community. JPOs develop individualized case plans that guide specific case management and supervision strategies as well as service referrals. Increasingly, case plans are developed based on the results of structured risk assessment tools that facilitate identification of criminogenic needs (e.g., educational difficulties, unstructured leisure time) or impaired functioning (e.g., adverse living conditions, mental health problems; see Vincent, Guy, & Grisso, 2012).

Case planning should also account for current mental health symptoms given converging evidence of the elevated prevalence of mental health disorders among justice-involved youth (Robertson, Dill, Husain, & Undesser, 2004; Teplin et al., 2006; Wasserman, McReynolds, Ko, Katz, & Carpenter, 2005). Often, justice-involved youth are screened for mental health concerns at probation intake and screening results inform referrals for subsequent mental health services. Researchers have begun to examine how JPOs analyze and translate results of risk assessment and mental health screening information into case plans (Peterson-Badali, Skilling, & Haqanee, 2015; Wasserman et al., 2008) and predispositional reports (Morin, Cruise, Hinz, Holloway, & Chapman, 2015). The focus of this research has been to identify how JPOs consider criminogenic needs when making case planning decisions (Vincent, Paiva-Salisbury, Cook, Guy, & Perrault, 2012); however, less attention has been paid to how JPO case plan decision making is affected by responsivity factors (e.g., learning styles, mental health symptoms). Thus, the aims of the current study were to examine how justice-involved youths' histories

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of traumatic event exposure and current traumatic stress symptoms impacted JPO scoring of a risk assessment tool and whether such information was incorporated into case plans.

Juvenile Risk Assessment and the Risk-Needs-Responsivity Model

Juvenile justice systems increasingly utilize risk assessment tools to guide case planning and decision making (Vincent et al., 2012). Results from a 1989 survey of juvenile courts found that 49% reported using some type of risk assessment tool to classify juvenile offenders and guide decisions regarding postdispositional case plans (Barton & Gorsuch, 1989). More recent research found that 63% of JPOs and judges reported using a risk assessment tool to guide case processing (Shook & Sarri, 2007). A recent survey found that most states employed juvenile risk assessment tools in at least a few of their jurisdictions (Wachter, 2014). Reflecting this increase, a recent review of statutes from 50 states and the District of Columbia found that assessment of criminogenic needs and responsivity factors was a legally prescribed function of JPOs in at least 10 jurisdictions (see Hsieh et al., 2016), whereas no jurisdiction had legislated this type of assessment as a legally prescribed function prior to 2002.

Risk assessment tools based on the Risk-Need-Responsivity (RNR) model (Andrews & Bonta, 1994, 2010) provide a framework to conceptualize risk management and reduction strategies and promote effective treatment of offenders by matching interventions to identified needs (Andrews, Bonta, & Hoge, 1990). The Risk Principle suggests that the dosage and intensity of services should be matched to an individual's risk for reoffending; those at highest risk should receive a higher dosage/intensity of services and intervention strategies. The Needs Principle states that services and strategies should target empirically identified dynamic risk factors associated with recidivism; such factors are commonly known as criminogenic needs. The Responsivity Principle states that cognitive–behavioral interventions should be prioritized and rehabilitative services and community supervision strategies should account for individual learning styles, motivations, abilities, and strengths. Mental health disorders can be conceptualized as noncriminogenic needs or specific responsivity factors; such conceptualization reflects that mental health symptoms are associated with impairment in daily functioning and can subsequently impact how justice-involved youth may respond to probation supervision and rehabilitation services, perhaps limiting their effectiveness.

The two most commonly used RNR-based juvenile risk and needs assessments are the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2006) and the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2002). Olver and colleagues (2009) performed a meta-analysis ($k = 9$) and found that the SAVRY summary risk rating predicted general, nonviolent, and violent recidivism for juvenile offenders. Recently, researchers have examined whether case handling changed after implementation of the SAVRY in juvenile probation settings and found some evidence that use of the SAVRY impacted disposition decision making and juvenile probation supervision strategies (Vincent, Guy, Gershenson, & McCabe, 2012). Specifically, after SAVRY implementation, Vincent et al. (2012) reported a 50% reduction in both nonsecure and secure placements and a 30% reduction in intensive supervision. Consistent with the Risk Principle, the highest risk youth were mandated to fewer services postrisk assessment implementation but accessed those services at a higher rate (Vincent, Guy, Gershenson, et al., 2012).

There is also evidence that the YLS/CMI predicts general, nonviolent, violent, and sexual recidivism (Olver et al., 2009). Onifade and colleagues (2008) found that a one-point increase in YLS/CMI total scores was associated with a 5% increase in recidivism risk at 12 months for 10- to 16-year-olds supervised by JPOs in the community. In addition to risk, multiple studies have focused on the match between criminogenic needs identified via the YLS/CMI when scored by clinicians and case plan priorities targeted by JPOs (Peterson-Badali et al., 2015; Vitopoulos, Peterson-Badali, & Skilling, 2012). Vitopoulos and colleagues (2012) found no gender differences on the number of identified YLS/CMI criminogenic needs and a comparable case plan match rate for male and female youth. However, a greater match between criminogenic needs identified on the YLS/CMI and those targeted on the case plan predicted a reduction in recidivism for males but not for females. The same research team found that a poor needs/case plan match predicted significantly higher recidivism rates in two studies. When the need match ratio was between 75% to 100%, the recidivism rate was 27.3%; youth with a 26% to 74% match ratio had a recidivism rate of 42.5% and those with a 0% to 25% match rate had the highest recidivism rate (76.2%; Vieira, Skilling, & Peterson-Badali, 2009). Similarly, a greater needs/case plan match was associated with lower recidivism after controlling for static risk (e.g., criminal history; Peterson-Badali et al., 2015).

To date, only one study has addressed the relationship between specific responsivity factors identified by RNR-based risk assessment tools and recidivism. Vieira et al. (2009) examined whether JPOs addressed specific responsivity factors on their case plans following identification by clinicians on the YLS/CMI. They found that a randomly selected youth whose responsivity match ratio was less than 50% had a 62% probability of reoffense, while a randomly selected youth whose responsivity match ratio was 50% or greater had a 44% probability of reoffense.

Therefore, evidence supports that risk assessment instruments are useful to JPOs in determining overall risk, and that when JPOs exercise discretion in selecting criminogenic needs and responsivity factors that are in line with risk assessment results, juvenile probationers' risk to recidivate decreases. While match ratios for dynamic criminogenic needs and specific responsivity factors have rarely been studied, the latter have received even less attention; thus, identification of specific responsivity factors by JPOs is a research priority. It is important to examine how JPOs identify responsivity factors and to what extent such factors are incorporated into case plans. One specific responsivity factor worthy of investigation is exposure to traumatic events and associated posttraumatic stress symptoms.

Trauma Among Justice-Involved Youth

Trauma is a broad term that can reference traumatic event (TE) exposure (e.g., sexual abuse, witnessing community violence), trauma reactions (e.g., symptoms of PTSD), and associated mental health difficulties (e.g., anxiety, depression, dissociation) with current research findings addressing the prevalence and impact of

TE and trauma reactions on justice-involved youth. Evidence suggests that male and female justice-involved youth experience different types of TEs. One study found that 25.9% of juvenile female detainees reported forced sexual activity compared with only 5.7% of males (Wasserman et al., 2005). Alternatively, males were twice as likely to have been threatened with a weapon (43.3%) than females (21.8%). However, there is evidence that females are more likely than males to be exposed to variety of TE types; these individuals are classified as polyvictims (Ford, Grasso, Hawke, & Chapman, 2013). Youth involved in the juvenile justice system are exposed to TE at higher rates than noninvolved youth and such exposures are quite common. In a national sample of adolescents, McLaughlin and colleagues (2013) documented a 61.8% lifetime rate of exposure to at least one TE while estimates for juvenile detainees were between 86 to 92.5% (Abram et al., 2004; Stimmel, Cruise, Ford, & Weiss, 2014). Dierkhising and colleagues (2013) documented that justice-involved youth were exposed to about five different types of traumatic events during their lifetimes ($SD = 2.9$). Traumatic event exposures include noninterpersonal (e.g., accidents) and interpersonal (e.g., family and community violence) victimization experiences (see Dierkhising et al., 2013). Dierkhising and colleagues (2013) documented gender differences in type of TE; there were higher rates of emotional abuse, forced displacement, sexual abuse, assault, and rape among justice-involved female youth and higher rates of exposure to community violence for justice-involved males. Stimmel and colleagues (2014) found that exposure to more TE types was associated with greater severity of Post-Traumatic Stress Disorder (PTSD) symptomatology in detained males. Additionally, commentators have noted that the lifetime prevalence of PTSD for justice-involved youth is four to eight times higher than the rate for noninvolved peers (Ford, Chapman, Connor, & Cruise, 2012). Justice-involved female youth also report higher rates of PTSD than their male peers (Conrad et al., 2014; Dierkhising et al., 2013). Given the higher lifetime prevalence of TE and PTSD among justice-involved youth, examining how trauma information impacts JPO decision making is important. Reflecting the potential impact on risk assessment ratings, recent research has demonstrated various associations between traumatic event exposure, trauma reactions, and delinquent behavior, which may affect recidivism risk.

Trauma as a Risk Factor

Exposure to multiple TEs may be viewed by JPOs as a risk factor for continued involvement in the juvenile justice system. For example, results from one longitudinal study documented that youth who had been exposed to multiple adverse childhood events were at greater risk for offending, after accounting for individual and family static and dynamic risk factors (Baglivio, Wolff, Piquero, & Epps, 2015). Justice-involved youth who had been exposed to more than five adverse events were 345% more likely to have an early onset offending trajectory and had the highest number of arrests throughout adolescent and into adulthood (Baglivio et al., 2015). Consistent with these findings, another study found that being exposed to multiple types of victimization, but not PTSD symptoms, predicted self-reported delinquency in a sample of justice-involved youth (Ford, Elhai, Connor, & Frueh, 2010). Converging evidence from a retrospective record review documented that justice-involved youth who had experienced at least one TE had twice the number of previous arrests and more out-of-home placements than youth with no documented TEs (Romaine, Goldstein, Hunt, & DeMatteo, 2011). These authors also found that youth who reported a history of TEs were more likely to have their petition to return to juvenile court denied. There is also some evidence that recidivism risk varies by gender when the adolescent has been sexually abused. Conrad and colleagues (2014) found that justice-involved females who had been sexually abused were five times more likely to recidivate compared with nonsexually abused females; however, there was no such difference between males who had experienced childhood sexual abuse and those who did not. This finding suggests gender-specific impacts from exposures to different traumatic events; however, more research is needed examining a broader range of traumatic event exposure types.

Despite this evidence, current risk assessment tools provide minimal coverage of TEs. For example, the SAVRY includes only two historical risk items that are limited to witnessed family violence and child abuse/neglect; the YLS/CMI has no items addressing TEs within the criminogenic risk/need section of the tool. Given research findings supporting an association between TE and delinquency risk, combined with the limited coverage of TEs on common risk assessment tools, it is possible that JPOs may account for prior traumatic events in their final risk judgments or by using professional overrides to adjust final risk estimates.

Trauma as a Need Factor

PTSD symptomatology has generally been conceptualized as a noncriminogenic need that is more strongly associated with patterns of overall impairment rather than delinquent behavior per se. Evidence supporting the former conceptualization includes research concluding that active PTSD symptoms are associated with anger (Ford, Steinberg, Hawke, Levine, & Zhang, 2012; Kimonis, Ray, Branch, & Cauffman, 2011), comorbid mental health problems (Kerig, Ward, Vanderzee, & Arnzen Moeddel, 2009), and substance use (Adams et al., 2013). However, Becker and Kerig (2011) found that PTSD symptom severity in male juvenile detainees predicted lifetime and past-year delinquent behavior. Similarly, Stimmel and colleagues (2014) found that PTSD arousal symptoms predicted rates of reactive aggression among male juvenile detainees. These findings suggest that active PTSD symptoms can directly (e.g., reactive aggression) and indirectly affect delinquency via associations with other criminogenic needs (e.g., substance use). Given the minimal evidence that directly links PTSD symptoms with delinquent behavior, symptom severity may be best conceptualized as a noncriminogenic need. However, when such symptoms are present, JPOs may identify a greater number of criminogenic needs or increase risk ratings on individual criminogenic need factors given the history of TEs and presence of active PTSD symptoms. For instance, a history of community violence exposure that occurred in the context of peer groups could result in a JPO identifying a negative peer group as a high-risk factor. Given the multidimensional nature of PTSD symptoms (e.g., intrusive recollections, avoidance, arousal, negative changes in thoughts and mood; see Armour, Műllerová, & Elhai, 2016) active PTSD symptoms may be reflected in risk factor ratings focused on a variety of criminogenic needs such as substance use, attention/

concentration problems, impulsivity, and anger management problems. It should be noted that PTSD symptoms identified in the *DSM–5* do not represent all posttraumatic stress reactions and there are a variety of trauma-related sequelae that may present in those exposed to TEs. For example, older justice-involved youth who were diagnosed with PTSD reported higher levels of substance use, more anger/irritability, somatic complaints, and depressed/anxious symptoms than those without the diagnosis; however, this relationship was not present for younger adolescents (Becker, Kerig, Lim, & Ezechukwu, 2012). Furthermore, only females diagnosed with PTSD were more likely to recidivate; this effect was even stronger for African American girls. Thus, some evidence suggests that associated mental health problems may play an important role in the trauma/recidivism connection and this relationship may vary by demographic characteristics.

Trauma as a Specific Responsivity Factor

Specific PTSD symptoms and associated trauma-exposure sequelae can also be conceptualized as responsivity factors. Ford and colleagues (2012) reported a relationship between PTSD symptoms and deficits in emotion regulation. Some youth with complex trauma (e.g., traumatic event exposure that fundamentally disrupts the development of self-regulation or primary attachment bonds) experienced deficits in attention, learning, memory, sensorimotor functions, emotion regulation, and attachment (Ford, Chapman, et al., 2012). Such youth may also have interpersonal deficits (e.g., ambivalent or avoidant attitudes toward others) that could serve as a barrier to treatment engagement. There is evidence that posttraumatic dissociative symptoms could be treated as responsivity factors as well. To illustrate, justice-involved youth classified in a high-dissociation group reported more severe PTSD symptomatology, dissociative amnesia, depersonalization/derealization, and emotion dysregulation (Bennett, Modrowski, Kerig, & Chaplo, 2015). There is some evidence that youth with higher levels of callous-unemotional (CU) traits may be less responsive to treatment (Hawes & Dadds, 2007) and other evidence that a subgroup of justice-involved youth with CU traits may possess a distinct trauma-related etiology (Bennett & Kerig, 2014). Thus, sequelae of traumatic events (deficits in self-regulation, attachment, and CU traits) could impact how traumatized youth respond to intervention attempts. Furthermore, there are a number of trauma-specific interventions that have been used to treat justice-involved youth with posttraumatic stress symptoms including Trauma-focused Cognitive Behavioral Therapy (TF-CBT; Cohen et al., 2016), Trauma and Grief Component Therapy for Adolescents (TGCT-A; Olafson et al., 2016), and Trauma Affect Regulation: Guide for Education and Treatment (TARGET; Ford, Steinberg, et al., 2012). These interventions have resulted in reduced trauma-specific symptoms; however, less is known about the impact on delinquency risk factors or recidivism.

The YLS/CMI is the only adolescent risk assessment tool that specifically outlines possible specific responsivity factors and structures how responsivity factors are to be integrated into the final risk estimate. Only six of 29 youth-specific responsivity factors reference traumatic event exposures and one factor references potential trauma symptoms, in addition to trauma-related responsivity factors scored as "other.' As such, existing research suggests that trauma reactions (e.g., PTSD symptoms) can be conceptualized as a specific responsivity factor and explicitly scored as such on the YLS/CMI.

The Current Study

Despite increases in RNR-based risk assessment tools used to guide JPO decision making and practice, it is unclear how JPOs address information about TEs and PTSD symptoms when scoring risk/needs assessment tools and if this information impacts case planning. As noted above, risk assessment instruments have been helpful in identifying areas for intervention; however, they have limited coverage of traumatic event exposure (TEE) and traumatic stress symptoms (TSS), despite growing evidence that these experiences are associated with delinquent behavior and impact youth functioning.

Therefore, the aims of the current study were to (a) examine whether information about TEE and TSS impacted JPO scoring of the YLS/CMI, (b) identify whether the presence of TEE and TSS affected summary risk ratings on the YLS/CMI, (c) identify whether the presence of TEE and TSS affected the number of criminogenic needs and trauma-based specific responsivity ratings on the YLS/CMI, and (d) examine how often JPOs considered TEE and TSS as a relevant target on case plans. Based on prior literature, three primary hypotheses were examined. Our first hypothesis was that JPOs who received case information depicting a history of TEE and TSS would elevate risk and identify more high-risk criminogenic needs when scoring the YLS/CMI Parts I (i.e., Assessment of Risk and Needs) and II (i.e., Summary of Risk and Needs). This hypothesis is consistent with prior research findings that patterns of TEE are associated with delinquency risk (Baglivio et al., 2015; Ford et al., 2010) and impacted legal decision making (Romaine et al., 2011). Our second hypothesis was that participants who received case information depicting a history of TEE and TSS would document more trauma-based specific responsivity factors on the YLS/CMI. This hypothesis is broadly consistent with TEE and TSS as responsivity factors and with the structure of the YLS/CMI Part 3 (i.e., Assessment of Other Needs and Special Considerations) as it includes a limited set of TEE and TSS items. Finally, we explored how JPOs who received case information describing a youth with a history of TEE and current TSS represented such information on case plans. For our third hypothesis, we predicted that JPOs would be more likely to recommend either a trauma-specific intervention or a more general mental health evaluation or treatment when they received case information describing a youth with a history of TEE and/or current TSS.

Method

Participants

Participants were JPOs recruited from five counties in a large northeastern state. This state was selected for this study because JPOs across the state were trained in the YLS/CMI and utilized it as a standard part of their intake and case planning process. The inclusion criterion was active employment as a JPO in one of the five counties selected as data collection sites. There were no exclusion criteria. Out of 187 possible participants, 161 (86%) returned data collection packets to the research team. However,

there was between-jurisdiction variation in the return rate; three jurisdictions returned at least 92.9% of their packets, one jurisdiction returned 77.8%, and one returned just 36.7% of their packets. As a result, the majority of participants who declined to participate worked in one county. However, there were no between-county differences on any independent or dependent variables between this county and the high-return counties. Of the 161 participants who returned their packets, 147 provided consent and completed all data collection materials, which resulted in a 78.6% participation rate.

Sample demographic and job characteristics are reported in Table 1. The sample consisted of 92 males (66.2%) and 46 females (33.1%); one participant identified gender as other (0.7%), and eight neglected to identify their gender identity (5.4%). Participants' age ranged from 25 to 65 ($M = 41.6$, $SD = 8.8$). The sample was predominantly Non-Hispanic White ($n = 107$, 79.3%); participants who identified as Black ($n = 18$, 13.3%), Hispanic/Latinx ($n = 8$, 5.9%), or other ethnicities ($n = 4$, 3.0%) were represented at a much lower rate; 10 participants neglected to identify their race or ethnicity (6.8%). All participants had at least a bachelor's degree, and 51 (36.7%) reported some graduate school training or having earned a Masters degree; eight participants did not report their educational attainment (5.4%).

The majority of participants reported currently working as a JPO supervising youth in the community ($n = 106$, 76.3%); an additional two supervisors of JPOs also carried a caseload (1.4%). The remainder of participants worked as intake JPOs ($n = 16$, 11.5%), specialized JPOs ($n = 9$, 6.5%), or JPO supervisors without a caseload ($n = 6$, 4.3%). Participants reported an average of 13.8 years ($SD = 8.1$) of experience working in juvenile probation and over 15 years ($M = 15.4$, $SD = 8.1$) of experience in the juvenile justice system. Excluding those participants without a caseload (e.g., intake JPOs and JPO supervisors without a caseload), participants reported an average of 23 youth ($SD = 9.7$) on their caseload. Participants reported an average of 5.7 hour ($SD = 4.8$) of training on the YLS/CMI and an average of 5.1 hour ($SD = 4.0$) of training on case planning in the past 12 months. Additionally, participants reported completing the YLS/CMI with an average of 65.8% of their caseload ($SD = 34.7$) and a case plan with 52.7% of their caseload ($SD = 42.4$). All participants without an active caseload reported receiving YLS/CMI and case plan training. Given that the scope of the current study was an evaluation of trauma information in standardized vignettes that mirror the structure and content of vignettes used in annual trainings used across the state, rather than the presence of trauma with actual cases, intake and supervisor JPOs who had received training for risk assessment and case planning were included in the study sample.

Table 1
Demographic Characteristics of the Total Sample (N = 147)

Variable	*n* (%) / *M* (*SD*)
Gender	
Male	92 (66.2%)
Female	46 (33.1%)
Other	1 (.7%)
Age	41.6 (8.8)
Race/Ethnicity	
White	107 (79.3%)
Black	18 (13.3%)
Asian	0 (0%)
Pacific Islander/Hawaiian	0 (0%)
Hispanic/Latinx	8 (5.9%)
Native American	0 (0%)
Other	4 (3.0%)
Educational attainment	
Two-year degree	0 (0%)
Bachelors	88 (63.3%)
Some graduate school/Masters	51 (36.7%)
Current position	
Probation Officer (PO)	106 (76.3%)
Intake PO	16 (11.5%)
PO supervisor with caseload	2 (1.4%)
PO supervisor without caseload	6 (4.3%)
Other[a]	9 (6.5%)
Job characteristics	
Years in juvenile justice	15.4 (8.1)
Years in juvenile probation	13.8 (8.1)
Caseload size	23.0 (9.7)
YLS/CMI (YLS) and Case Plan (CP)	
YLS training hours past 12 mos.	5.7 (4.8)
CP training hours past 12 mos.	5.1 (4.0)
% Caseload with YLS	65.8 (34.7)
% Caseload with CP	52.7 (42.4)

[a] "Other" includes aftercare and school-based JPOs.

Design

The study utilized case vignettes to present information describing a typical justice-involved youth under community supervision. Vignettes systematically varied using a two (male/female) by two (TEE+/TEE−) by two (TSS+/TSS−) factorial design, which resulted in a total of eight vignettes representing all possible combinations of the three between-subjects factors. Primary study hypotheses were specific to TEE and TSS. Given the known gender differences regarding specific TEEs and TSS, gender was included as a vignette manipulation to examine its potential impact on variables of interest. Each vignette was approximately eight pages long, double-spaced, and described a biracial (Black and White) 15-year-old. Excluding the manipulations described above, all other demographic, background, and delinquency history information was identical across vignettes. History of TEE was manipulated whereby four vignettes (TEE+) included a description of the youth as having experienced "multiple neglect cases," "exposure to domestic violence," and being the victim of a "serious physical assault" where the youth was "attacked and beaten by two men and had all of [his/her] possessions taken" during commission of the assault; the other four vignettes did not include this information (TEE−). Current TSS were manipulated in a section of the vignette documenting "psychological history." Four vignettes described that the youth was having problems sleeping and experiencing nightmares, was feeling sad, and that such problems had recently become much worse. Furthermore, the youth saw him/herself as someone who was "weak, feels depressed, and admits to being fearful of walking alone, especially at night" and feels on edge since the assault (TSS+); the other four vignettes did not include this information (TSS−). Three national experts in juvenile risk assessment and traumatic stress reviewed the content of the vignette manipulations to ensure content and face validity.

Measures

Demographics. Participants were asked to identify demographic information, including their gender, age, race/ethnicity, and educational attainment. Furthermore, they were asked to report job characteristics (i.e., length of time working in the juvenile justice system, length of time as a JPO, and caseload size). Lastly, JPOs were asked to estimate the amount of training they had received on using a risk assessment tool and case planning in the past 12 months as well as the percentage of their caseload with whom they utilized a risk assessment tool and wrote a case plan.

YLS/CMI. The Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2002) is a structured risk assessment tool based on the RNR model. The YLS/CMI contains 42 risk items that are rated as present or absent across eight criminogenic need domains. Next, 41 other needs and special considerations (i.e., specific responsivity factors) were scored as present or absent. Criminogenic need domain scores were summed to establish a total risk score, which was then used to categorize youth into a risk level (low, moderate, high, very high). Lastly, based on additional factors rated under the other needs and special considerations section, the rater has the opportunity to retain the numerically identified risk level or utilize a professional override to raise or lower the overall risk level.

There is evidence of good reliability for the YLS/CMI with justice-involved youth; one research team documented ICCs ranging from .61 to .85 across criminogenic needs (Schmidt, Hoge, & Gomes, 2005). The YLS/CMI also has acceptable validity as both individual criminogenic needs (Jung & Rawana, 1999) and total risk scores (Schmidt et al., 2005) predicted reoffending and recidivism. Further, Olver and colleagues (2009) conducted a meta-analysis of 22 YLS/CMI studies and demonstrated evidence of predictive validity of YLS/CMI total scores in predicting general, nonviolent, and sexual recidivism.

Case plan. JPOs in this state utilize a standardized electronic case plan form. The first page of the case plan imports the results of the YLS/CMI. The case plan requires JPOs to utilize professional discretion in selecting specific YLS/CMI criminogenic needs to target on the case plan. Next, JPOs document specific supervision strategies, referrals, or conditions for each criminogenic need. The standardized electronic case plan form also allows JPOs to designate any additional mental health concerns as a need area and specific supervision strategies or referrals to respond to identified mental health needs.

Procedures

Study procedures were approved by the Fordham University Institutional Review Board. Five juvenile probation departments housed in both urban ($n = 2$) and rural ($n = 3$) counties were identified as study sites by the Deputy Director of the Juvenile Court Judges' Commission (JCJC; also the study's third author). The JCJC provided contact information for chief JPOs from each county. Data collection occurred over a 2-week time period as designated by the chief JPO in June 2015. Either the chief JPO, or their designee, distributed data collection packets to all eligible participants in each office. Data collection packets were identified with a unique research identification number. Random assignment of JPOs to vignette condition was achieved by sequential ordering of vignettes by research identification number by the researchers with instructions given to the chief JPO that packets were to be distributed in the predetermined order by research identification number. A reminder e-mail was sent midway through the 2-week data collection period requesting that chief JPOs remind participants of the deadline for participation.

Data collection was conducted anonymously in an effort to minimize possible coercion, to maintain confidentiality, and to ensure that participants felt comfortable refusing to participate. All participants provided consent via checkbox to ensure anonymity. Participants were informed that data collection procedures involved completing a one-page demographics form, reading a vignette that described a typical youth on a JPO's caseload, completing the YLS/CMI based on the information presented in the enclosed vignette, and using information from the vignette and YLS/CMI to develop a case plan as they would for any youth on their caseload.

Scoring of the YLS/CMI and documentation of the case plan was accomplished through the statewide electronic case management system. Participants printed the YLS/CMI and case plan from the JCMS, sealed all data collection materials in the data packet, and deposited the packet at a designated drop-off point in the probation department. At the end of the 2-week data collection period, all packets were mailed to the researchers for data entry and analysis.

Data Analysis

A number of dependent variables were calculated based on the YLS/CMI scoring. First, the YLS/CMI total risk score was extracted based on standard scoring and accordingly used as the indicator of overall risk. Second, a total criminogenic needs score was created by summing the number of YLS/CMI criminogenic needs rated as high risk. Third, three responsivity scores were calculated: a total specific responsivity score (sum of all specific responsivity factors), TEE specific responsivity (sum of 7 YLS/CMI responsivity items that capture instances of traumatic event exposure including abusive mother, abusive father, significant family trauma, victim of physical abuse, victim of neglect, child protection issues, and any open-ended TEE documented by the JPO in the other category), and TSS specific responsivity (sum of 2 YLS/CMI responsivity items that capture trauma symptoms including depression and any open-ended TSS documented by the JPO in the other category). To develop consensus coding by the research team, the first and second authors independently scored the YLS/CMI based upon the male TEE+ and TSS+ vignette. The two authors met to reconcile any differences in individual coding by consulting the YLS/CMI manual and decided on final consensus coding.

A number of variables were calculated from the case plan based on a truncated sample of those participants who completed both the YLS/CMI and the case plan ($n = 142$). First, a total needs match ratio was calculated by summing the number of high-risk criminogenic needs targeted for intervention on the case plan divided by the total number of high-risk criminogenic needs on the YLS/CMI. Second, two trauma-specific responsivity match ratios were calculated by dividing the number of TEE and TSS responsivity factors on the YLS/CMI by the number of trauma-specific services targeted on the case plan.

Descriptive statistics were calculated to examine YLS/CMI scoring and comparison with consensus coding of the TEE−/TSS− vignette. Descriptive statistics representing the case plan match were also calculated. Prior to testing the primary hypotheses, a series of inde-

pendent samples *t* tests and ANOVAs were conducted to examine mean differences between male and female participants, other demographics, and between-county variation on all dependent variables to determine the need to control for these variables in subsequent analyses. Primary hypotheses were tested through a series of two-way factorial ANOVAs with TEE and TSS as the independent variables and the associated YLS/CMI and case plan variables serving as dependent variables. An a priori power analysis indicated a sample of 128 participants was needed to detect a medium effect size at 80% power, at the $p < .05$ level of statistical significance. Finally, chi-square analyses were used to evaluate whether receiving a vignette that included a description of TEE or TSS were more likely to include a recommendation for a mental health evaluation or mental health treatment in their case plans.

Results

Descriptive Statistics

YLS/CMI. Participants reported completing the YLS/CMI in just less than 45 min ($M = 43.5$, $SD = 19.8$). Participants demonstrated good consistency in identification of high risk needs on the YLS/CMI and were aligned with consensus coding by the research team (see Table 2). For example, 86.4% ($n = 127$) of participants' coding matched consensus coding of the YLS/CMI high-risk summary risk rating. No participant utilized a professional override option to raise or lower the final summary risk rating on the YLS/CMI. Five YLS/CMI domains (Prior and Current Offenses/Dispositions, Education/Employment, Substance Abuse, Leisure/Recreation, Attitudes/Orientation) were highly

Table 2
YLS/CMI Descriptive Statistics for the Total Sample (N = 147)

YLS/CMI need domain	*n* (%) / *M* (*SD*)	Range	Consensus
Prior and current offenses/dispositions (5 items)	1.4 (.6)	0–4	2
Low	4 (2.7%)		—
Moderate	140 (95.2%)		Mod.
High	3 (2.0%)		—
Family circumstances/parenting (6 items)	4.6 (1.1)	2–6	3
Low	4 (2.7%)		—
Moderate	66 (44.9%)		Mod.
High	77 (52.4%)		—
Strength	1 (.7%)		—
Education/Employment (7 items)	5.0 (.9)	3–7	6
Low	0 (.0%)		—
Moderate	7 (4.8%)		—
High	140 (95.2%)		High
Strength	14 (9.6%)		Strength
Peer relations (4 items)	3.6 (.8)	0–4	3
Low	3 (2.0%)		—
Moderate	37 (25.2)		Mod.
High	107 (72.8%)		—
Strength	0 (.0%)		—
Substance abuse (5 items)	2.9 (.5)	1–5	3
Low	0 (.0%)		—
Moderate	23 (15.6%)		—
High	124 (84.4%)		High
Strength	0 (.0%)		—
Leisure/Recreation (3 items)	2.2 (.5)	1–3	2
Low	0 (.0%)		—
Moderate	10 (6.8%)		—
High	137 (93.2%)		High
Strength	6 (4.1%)		—
Personality/Behavior (7 items)	4.4 (1.1)	1–7	6
Low	0 (.0%)		—
Moderate	78 (53.1%)		—
High	69 (46.9%)		High
Strength	0 (.0%)		—
Attitudes/Orientation (5 items)	2.3 (1.1)	0–5	2
Low	9 (6.1%)		—
Moderate	122 (83.0%)		Mod.
High	16 (10.9%)		—
Strength	9 (6.2%)		Strength
Total score (42 items)	26.3 (3.5)	15–36	27
Low	0 (.0%)		—
Moderate	17 (11.6%)		—
High	127 (86.4%)		High
Very high	3 (2.0%)		—
Responsivity factors	5.76 (4.67)	0–20	—

consistent with the risk level classifications (e.g., moderate or high); percentage agreement for these domains ranged from 83.0% (n = 122) to 95.2% (n = 140). Greater discrepancies were noted on the remaining three domains. Family Circumstances was scored as high risk by 77 participants (52.4%) while 66 JPOs (44.9%) scored this domain as moderate risk; a moderate risk rating was determined by the researchers' consensus coding. Similar inconsistency between the sample and consensus coding was found for Personality/Behavior, with 78 (53.1%) of the sample scoring this domain as moderate risk, while 46.9% scored it as high risk; a high-risk rating was determined by consensus coding. Peer Relations was scored as high-risk by the majority of the total sample (n = 107, 72.8%) and the second most common risk designation for this need was moderate (n = 37, 25.2%); consensus coding identified this domain as moderate risk.

Participants infrequently endorsed strengths in any of the criminogenic need areas (see Table 2). Consensus coding identified strengths in two domains: Education/Employment (attributable to the vignette's description of the youth as an avid reader with above average intelligence and plans to attend college) and Attitudes/Orientation (attributable to the vignette's description of the youth's successful completion of probation in the past and compliance with previous court-mandated programming). Consistent with researchers' consensus coding of strengths, Education/Employment and Attitudes/Orientation were the most commonly endorsed areas of strength in the total sample, but were still endorsed at very low rates (9.6% and 6.2%, respectively).

Case plans. Of the overall sample that completed the YLS/CMI (n = 147), five participants declined to complete a case plan, resulting in 142 participants with a YLS/CMI and a case plan. Participants reported completing the case plan in approximately 25 min (M = 23.8, SD = 11.1). Case plans had an average of 4.4 recommendations (SD = 2.0, range: 0–9) for criminogenic needs and mental health issues. Participants incorporated an average of 3.8 criminogenic needs (SD = 1.9) from the YLS/CMI on the case plan. The most commonly incorporated need areas were Substance Abuse (n = 108, 76.1%) and Family Circumstances/Parenting (n = 102, 71.8%; see Table 3). Greater variation was found for other need areas. For example, 50% of JPOs (n = 71) included Peer Relations on the case plan. Leisure/Recreation was selected as a criminogenic need on the case plan by only 53 participants (37.3%) despite high-risk classification by 93.2% (n = 127) of the sample, indicating that participants used discretion when selecting high-risk criminogenic needs to target on the case plan. While not treated as a specific criminogenic need on the YLS/CMI, mental health was targeted on the case plan by 77 participants (53.8%).

High-risk needs and case plan match. In accordance with the Needs principle, high-risk criminogenic needs from the YLS/CMI should be prioritized in case planning. High-risk domains based on consensus coding included: Education/Employment, Substance Abuse, Leisure/Recreation, and Personality/Behavior (see Table 2). Three of those four domains were rated as high risk by more than 80% of the participants in the sample, which further reflected consistency with the researchers' consensus coding. However, there was wide variation in terms of the number of YLS/CMI high-risk needs that were included on the case plan as targets for intervention (see Table 4). For example, when Substance Abuse was designated as a high-risk need on the YLS/CMI (n = 124, 84.4%), it was only identified on the case plan by 93 participants (66.4% of total case plans) resulting in a needs match ratio of 75.0%. Family/Parenting was most likely to be matched as a target for intervention on the case plan, reflecting a needs match ratio of 81.8%. Education/Employment and Leisure/Recreation were the most common high-risk needs on the YLS/CMI (n = 140, 95.2% and n = 137, 93.2%, respectively) but were included on the case plan at much lower rates; each criminogenic need produced a needs match ratio of 53.5% and 36.5%, respectively. Attitudes/Behavior was rarely endorsed as a high-risk need (n = 16, 10.9%) and targeted for intervention on the case plan by seven JPOs (5.0% of total case plans), which resulted in a 43.8% needs match ratio. The total needs match ratio was 57.2%.

Table 3
Case Plan Descriptive Statistics (N = 142)

Case plan need domain	n (%) / M (SD)
Prior and current offenses/dispositions	
No need	131 (92.3%)
Need	11 (7.7%)
Family circumstances/parenting	
No need	40 (28.2%)
Need	102 (71.8%)
Education/Employment	
No need	60 (42.3%)
Need	82 (57.7%)
Peer relations	
No need	71 (50.0%)
Need	71 (50.0%)
Substance abuse	
No need	34 (23.9%)
Need	108 (76.1%)
Leisure/Recreation	
No need	89 (62.7%)
Need	53 (37.3%)
Personality/Behavior	
No need	69 (48.6%)
Need	73 (51.4%)
Attitudes/Orientation	
No need	96 (67.6%)
Need	46 (32.4%)
Mental health	
No need	65 (45.5%)
Need	77 (53.8%)
Total case plan needs	3.8 (1.9)

Responsivity factors. Of the total sample that completed the YLS/CMI (n = 147), 107 (72.8%) participants scored the responsivity section (see Table 4). TEE was rated as a responsivity factor more often than TSS (n = 87, 59.2% and n = 32, 21.8%, respectively). However, trauma-related responsivity items were rarely mentioned on the case plan; more specifically, TEE factors were mentioned on one case plan (0.7%) and TSS factors were mentioned on two (1.5%) case plans. As such, responsivity match ratios for TEE and TSS were both low (1.1% and 6.3%, respectively).

JPO gender and county-level differences. To determine whether there were gender or county differences, analyses were conducted to evaluate whether either variable should be included as a covariate in subsequent analyses. Independent samples t tests were calculated to test for mean differences between participant gender on four YLS/CMI (total risk score, total high-risk needs, TEE responsivity, and TSS responsivity) and two case plan variables

Table 4
Case Plan Criminogenic Needs and Responsivity Factors Matched to YLS/CMI

Domain	YLS/CMI high-risk needs (n = 147)		YLS/CMI high-risk needs targeted on case plan (n = 142)		Needs match ratio (n = 142)
	n	%	*n*	%	%
Dynamic needs					
Family/Parenting	77	52.4	63	45.0	81.8
Education/Employment	140	95.2	75	53.6	53.5
Peer relations	107	72.8	55	39.3	51.4
Substance abuse	124	84.4	93	66.4	75.0
Leisure/Recreation	137	93.2	50	35.7	36.5
Personality/Behavior	69	46.9	40	28.6	58.0
Attitudes/Behavior	16	10.9	7	5.0	43.8
Responsivity type	**YLS/CMI responsivity (n = 147)**		**YLS/CMI responsivity on case plan (n = 142)**		**Responsivity match ratio (n = 142)**
	n	%	*n*	%	%
General					
Any	107	72.8	—	—	—
Generic mental health	—	—	65	45.7	—
Traumatic					
Event exposure	87	59.2	1	.7	1.1
Stress symptoms	32	21.8	2	1.5	6.3
Total	94	63.9	3	2.1	3.2

(needs match ratio and responsivity match ratio). There were no mean differences between male and female participants on YLS/CMI criminogenic needs that were designated as high risk or on the summary risk rating.

A series of one-way ANOVAs were calculated to examine county-level differences on all variables of interest. Only the one-way ANOVA that tested the total number of YLS/CMI high-risk criminogenic needs that were addressed on the case plan was statistically significant, $F(4, 142) = 3.62$, $p < .01$. Post hoc comparison tests identified only one pairwise county difference; on average, participants in one county ($M = 3.42$, $SD = 1.89$) included one more high-risk need from the YLS/CMI on the case plan relative to participants in another county ($M = 2.27$, $SD = 1.56$). While noting this result, county was not controlled for in subsequent analyses given the minimal impact on the dependent variables, overall, and given that the result was isolated to one comparison between two jurisdictions.

Finally, before examining the impact of TEE and TSS on risk assessment scoring and case plans, all dependent variables were evaluated for differences based on vignette gender. The results indicated no differences in scoring of the YLS/CMI based on the gender of the youth described in the vignette. As such, vignette gender was not examined as a between-subjects factor in testing the study hypotheses.

TEE and TSS Impact on Risk Assessment Scoring

Trauma, risk, and criminogenic needs. To test the first hypothesis that JPOs who received case information depicting a history of TEE and TSS would elevate risk and identify more high-risk criminogenic needs when scoring the YLS/CMI, two two-way factorial ANOVAS were calculated with TEE and TSS as the between-subjects factors. The YLS/CMI total risk score was the dependent variable (DV) for the first ANOVA. The interaction between TEE and TSS was not significant, $F(1, 143) = 0.11$, $p = .74$, $\eta^2 = .001$, 95% CI [.000, .032], which indicated that main effects were interpretable. The main effect of TEE was not significant, $F(1, 143) = 0.54$, $p = .46$, $\eta^2 = .004$, 95% CI [.000, .048], nor was the main effect of TSS, $F(1, 143) = 0.64$, $p = .42$, $\eta^2 = .004$, 95% CI [.000, .050]. History of TEE or current TSS did not result in significantly different YLS/CMI total risk scores (see Table 5).

The number of high-risk needs on the YLS/CMI was the DV for the second ANOVA. The interaction between TEE and TSS was not significant, $F(1, 143) = 0.15$, $p = .70$, $\eta^2 = .001$, 95% CI [.000, .035]. Therefore, main effects were interpretable. The main effect of TEE was not significant, $F(1, 143) = 0.95$, $p = .33$, $\eta^2 = .007$, 95% CI [.000, .056] nor was the main effect of TSS, $F(1, 143) = 0.04$, $p = .84$, $\eta^2 = .001$, 95% CI [.000, .012]. History of TEE or current TSS did not result in JPOs identifying more high-risk criminogenic needs on the YLS/CMI.

Trauma and responsivity. To test the second hypothesis that participants who received a vignette depicting past TEE or current TSS would document more trauma specific responsivity factors, two two-way factorial ANOVAs were calculated with the number of TEE and TSS specific responsivity factors serving as the dependent variables.

The total number of endorsed YLS/CMI TEE responsivity items was the DV for the first ANOVA. The interaction effect between

Table 5
YLS/CMI Descriptive Statistics by Vignette Manipulation

	Sample size	Total risk score		High risk needs		TEE responsivity		TSS responsivity	
Vignette	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Gender									
Male	70	26.17	3.17	4.61	1.20	1.37	1.62	.21	.41
Female	77	26.43	3.85	4.51	1.47	1.26	1.34	.25	.49
TEE									
Absent (−)	72	26.53	3.58	4.67	1.28	$.90_a$	1.17	.31	.49
Present (+)	75	26.09	3.50	4.45	1.40	1.71_b	1.63	.16	.40
TSS									
Absent (−)	71	26.06	3.31	4.58	1.27	1.17	1.34	$.06_a$	.23
Present (+)	76	26.54	3.73	4.54	1.41	1.45	1.59	$.39_b$	.54
Total	147	26.31	3.53	4.56	1.34	1.31	1.48	.23	.45

Note. TEE = Traumatic Event Exposures; TSS = Traumatic Stress Symptoms. Different subscripts denote between-vignette differences at $p < .05$.

TEE and TSS was not significant, $F(1, 143) = 0.37$, $p = .55$, $\eta^2 = .003$, 95% CI [.000, .043]. Therefore the main effects were interpretable. The main effect of TEE was significant, $F(1, 143) = 11.73$, $p = .001$, $\eta^2 = .076$, 95% CI [.014, .168] which represents a medium effect size (see Cohen, 1969; Richardson, 2011). Participants who received a TEE− vignette only identified about one ($M = 0.90$, $SD = 1.17$) trauma-exposure specific responsivity item whereas participants who received a TEE+ vignette endorsed an average of 1.71 ($SD = 1.63$) trauma-exposure specific responsivity items on the YLS/CMI. The main effect of TSS was not significant, $F(1, 143) = 1.55$, $p = .22$, $\eta^2 = .011$, 95% CI [.000, .066].

The total number of TSS specific responsivity items from the YLS/CMI (two items; depression and TSSs that were specified in the "other" item explanation) was the DV for the second ANOVA. There was no interaction between TEE and TSS, $F(1, 143) = 1.17$, $p = .28$, $\eta^2 = .008$, 95% CI [.000, .060] which allowed for interpretation of the main effects. The main effect of TEE approached significance, $F(1, 143) = 3.87$, $p = .051$, $\eta^2 = .026$, 95% CI [.000, .097]. Participants who received a TEE+ vignette scored a mean of 0.16 ($SD = 0.40$) YLS/CMI TSS specific responsivity items, whereas participants who received a TEE− vignette scored 0.31 ($SD = 0.49$) YLS/CMI TSS specific responsivity items. The main effect of TSS was significant, $F(1, 143) = 23.82$, $p < .001$, $\eta^2 = .143$, 95% CI [.052, .248], which represents a large effect size. For participants who received a vignette TSS+ vignette, 0.39 YLS/CMI TSS specific responsivity items ($SD = 0.54$) were scored, whereas participants who received a TSS− vignette rated 0.06 ($SD = 0.23$) TSS specific responsivity items.

Case plan characteristics and mental health recommendations. To test the third hypothesis, three chi-square analyses were calculated to evaluate whether case plans were more likely to include a mental health recommendation (yes/no) given the presence of TEE or TSS in the vignette. Recommendations for generic mental health services or a psychological evaluation were included on half of case plans ($n = 65$, 52.8%; see Table 6), whereas only one case plan (1.4%) included a mental health recommendations to address TEE, and two (2.7%) case plans included a mental health recommendation to address TSS when they were identified as specific responsivity factors on the YLS/CMI. Given how rare trauma-specific service recommendations were included on case plans, it was important to explore whether JPOs were more likely to recommend mental health services in the presence of TEE and TSS. There were no proportional differences for case plans that included a mental health recommendation between participants who received a vignette that included a history of TEE ($n = 27$, 45.8%) versus those with no mention of such a history ($n = 38$, 59.4%), $\chi^2(1, N = 123) = 2.28$, $p = .13$, OR =

Table 6
Case Plan Match Ratios and Generic Mental Health Recommendation by Vignette Manipulation

	TEE responsivity match ratio			TSS responsivity match ratio			High-risk needs match ratio			Mental health recommendation	
Vignette	Match *n*	Total *n*	Ratio %	Match *n*	Total *n*	Ratio %	Match *M*	Total *M*	Ratio %	Yes *n* (%)	No *n* (%)
Gender											
Male	0	70	.0	1	70	1.4	2.71	4.61	58.8	34 (52.3)	22 (37.9)
Female	1	72	1.4	1	72	1.4	2.51	4.51	55.7	31 (47.7)	36 (62.1)
TEE											
Absent (−)	0	68	.0	1	68	1.5	2.72	4.67	58.2	38 (58.5)	26 (44.8)
Present (+)	1	74	1.4	1	74	1.4	2.49	4.45	56.0	27 (41.5)	32 (55.2)
TSS											
Absent (−)	1	68	1.5	0	68	.0	2.56	4.58	55.9	34 (52.3)	27 (46.6)
Present (+)	0	74	.0	2	74	2.7	2.64	4.54	58.1	31 (47.7)	31 (53.4)
Total	—	—	—	—	—	—	2.61	4.56	57.2	65 (52.8)	58 (47.2)

Note. TEE = Traumatic Event Exposures; TSS = Traumatic Stress Symptoms.

0.58, 95% CI [0.28, 1.18] $\varphi = -.14$. Similarly, there was no proportional difference for case plans that included a recommendation for mental health services between participants who received a vignette that included current TSS ($n = 31$, 50.0%) and those with no mention of TSS ($n = 34$, 55.7%), $\chi^2(1, N = 123) = 0.41$, $p = .52$, OR = 0.79, 95% CI [0.39, 1.61], $\varphi = -.06$.

Vignette gender was not associated with mental health recommendations. There was no proportional difference between vignettes describing a male ($n = 34$, 52.3%) versus a female client ($n = 31$, 47.7%) regarding the presence of a mental health recommendation, $\chi^2(1, N = 123) = 2.55$, $p = .11$. In summary, none of the between-subjects factors affected case plan recommendations for mental health services.

To examine differences in the average ratio of high-risk needs that were targeted for intervention on the case plan, we calculated the ratio of high-risk needs that were identified on the YLS/CMI and subsequently targeted for intervention on the case plan by the total number of high-risk needs identified on the YLS/CMI; this formed a needs match ratio. This variable served as the DV for a one-way ANOVA. The interaction between TEE and TSS was not significant, $F(1, 143) = 0.01$, $p = .92$, $\eta^2 < .001$, 95% CI [.000, .003]. Therefore, main effects were interpretable. The main effect of TEE was not significant, $F(1, 143) = 0.25$, $p = .62$, $\eta^2 = .002$, 95% CI [.000, .039], nor was the main effect of TSS, $F(1, 143) = 0.70$, $p = .41$, $\eta^2 = .005$, 95% CI [.000, .051]. History of TEE or current TSS did not affect the ratio of high-risk needs that were targeted for intervention on the case plan.

Discussion

Most youth in the juvenile justice system are exposed to at least one potentially traumatic event (Abram et al., 2004; Stimmel et al., 2014), and rates of PTSD are significantly higher than their non-justice involved peers (Ford, Chapman, et al., 2012). In contrast, little is known regarding how juvenile justice professionals, and JPOs in particular, prioritize information about TEE and TSS when engaging in assessment and case planning. The aims of the current study were designed to address this research gap. Specifically, the aims were to (a) examine whether information about TEE and TSS impacted JPO scoring of the YLS/CMI, (b) identify whether the presence of TEE and TSS affected summary risk ratings on the YLS/CMI, (c) identify whether the presence of TEE and TSS affected the number of criminogenic needs and trauma-based specific responsivity ratings on the YLS/CMI, and (d) examine how often JPOs considered TEE and TSS as a relevant target on case plans. These aims were addressed through a field-based study utilizing a large sample of JPOs who have received extensive training in scoring the YLS/CMI and using risk/needs assessment results to develop case plans. Mirroring the process employed in the participants' annual booster training, a vignette was developed that manipulated the presence of TEE and TSS to examine the impact of this information on YLS/CMI scoring and case plan development.

Results were mixed regarding the impact of TEE and TSS on YLS/CMI scoring and case plans. First, there were no differences in overall risk rating between participants who received a vignette describing TEE or TSS and those who received a vignette with no mention of trauma. Similarly, the number of high-risk needs identified on the YLS/CMI did not differ by vignette type. Second, JPOs who received a vignette describing a youth with TEE or TSS scored more trauma-relevant YLS/CMI responsivity factors. Therefore, JPOs correctly scored trauma-related information from the vignette on the corresponding section of the YLS/CMI. Although JPOs identified trauma-specific responsivity factors on the YLS/CMI, only three JPOs specifically targeted this information on the case plan. Likewise, JPOs who received a vignette with trauma information were not more likely to make a recommendation for further mental health evaluation or treatment. As this is the first study to specifically examine the impact of trauma on risk/needs assessment scoring and case planning, the study findings are discussed in relation to the broader YLS/CMI risk/need match literature and the Risk-Needs-Responsivity (RNR) model.

Risk/Need Assessment and Case Plan Match

Previous research has examined how JPOs make decisions regarding intervention targets and found that in the absence of structured risk and needs assessment, intervention targets selected by JPOs did not align with those factors most relevant to recidivism (Lin, Miller, & Fukushima, 2008). However, when risk was evaluated via the YLS/CMI, recidivism rates were lower when there was a higher match between criminogenic needs and juvenile probation supervision strategies/service referrals (Vieira et al., 2009).

Needs match ratio. In the current study, the overall needs match ratio was 57.2%, which is higher than the 35% needs match ratio reported by Vieira and colleagues (2009). In that study, a clinician rated the YLS/CMI and the results of the evaluation were subsequently transferred to the JPO. One possible reason for the discrepancy is that JPOs may be more likely to match their supervision strategies and service referrals to criminogenic needs when they identify the needs themselves, rather than a clinician. This explanation connotes that JPOs may consider the relevance of criminogenic needs and anchor their selection and use of case management strategies differently when information is directly gathered by the JPO. It is also possible that the difference may be attributable to variability in JPO training on the RNR model. The extent and quality of training on the RNR model in the Vieira study was unclear. In contrast, JPOs in the current sample reported having received between one and two days of training combined in the preceding 12 months on both the YLS/CMI and case planning, However, similar to Vieira and colleagues findings, there was comparable variability in the needs-match ratio in the current study. Taken together, the results indicate that JPOs use a great deal of discretion in selecting which criminogenic need are incorporated into case plans and that some JPOs do not identify high-risk factors from the YLS/CMI as targets for intervention on the case plan.

Trauma-specific responsivity match ratio. Compared with previous research that examined responsivity-match ratios, only trauma-specific responsivity factors were examined in the current study. In contrast to the relatively high needs match ratio, trauma-specific responsivity factors were rarely addressed on case plans; one case plan addressed TEE specific responsivity factors and two case plans addressed TSS specific responsivity factors. As a result, responsivity match ratios were very low for both vignettes that included trauma-specific information (1.1% and 6.3%, respectively). These findings indicate that although JPOs were able to

accurately identify trauma-specific responsivity factors when scoring the YLS/CMI, these factors were rarely targeted for intervention on the case plan.

Impact of youth gender. There is limited evidence that needs/case plan match has a greater impact on recidivism reduction for males compared with female justice-involved youth (Vitopoulos et al., 2012). Additionally, justice-involved females are more likely to endorse specific TEEs (e.g., sexual victimization), overall higher rates of PTSD, and intrusion symptoms than male justice-involved youth (Dierkhising et al., 2013). In the current study, youth gender had no impact on the scoring of the YLS/CMI. There were no between-groups differences for the number of high-risk dynamic criminogenic needs identified on the YLS/CMI, the number of responsivity factors identified on the YLS/CMI, or the respective match ratios on the case plan. There was also no evidence that JPOs were more attuned to possible trauma reactions in females versus males. These findings suggest that when JPOs receive extensive training on the YLS/CMI and case planning, variability in assessing risk may be mitigated. However, the overall low trauma responsivity case plan match ratios prevent any firm conclusions about whether JPOs are more or less likely to identify trauma-specific needs as treatment targets given the known gender differences in specific traumatic event exposures and rates of PTSD.

Trauma and the RNR Model

Trauma and risk. No prior studies have directly examined whether information about trauma impacts risk ratings by JPOs, despite the fact that a history of exposure to traumatic events has been associated with delinquency risk (Romaine et al., 2011) and future offending trajectories (Baglivio et al., 2015). The presence of TEE and TSS did not result in elevated YLS/CMI risk scores. Although contrary to the hypothesis, this null result is in fact a positive indicator that information about history of traumatic events and specific trauma reactions do not bias ratings of criminogenic needs or inflate the overall risk level. For example, Romaine and colleagues found youth with trauma histories were more likely to receive a punitive sanction, which suggests that judges may perceive youth with trauma histories as higher risk. The use of a structured risk/needs assessment tool, such as the YLS/CMI, may help mitigate potential bias. Nonsignificant differences in the YLS/CMI total risk score indicate that JPOs followed standard scoring of criminogenic needs as operationalized on the tool with their scoring not impacted by either TEE or TSS. It is also noteworthy that TEE or TSS could have had an impact on overall risk level through use of professional overrides. On the YLS/CMI, professional overrides can be used to raise or lower the overall risk level after a review of responsivity factors. As yet a further indicator of no overall risk bias, no JPOs utilized a professional override to elevate the overall risk level after reviewing responsivity factors. However, some evidence suggests that many JPOs do exercise professional overrides (50–60% rate reported by JPOs; Shook & Sarri, 2007). Differences in use of overrides may be related to study methodology or jurisdiction-specific training and policies that affect the use of professional overrides. More research is needed in this area to determine how often professional overrides are used and what factors are associated with raising or lowering risk level.

Trauma and criminogenic needs. TEE and TSS did not affect the number of high-risk needs documented on the YLS/CMI, the number of those needs targeted on the case plan, or the needs-match ratio. This finding is consistent with research demonstrating that TEE and TSS are associated with factors that interact or are related to criminogenic needs, but are not viewed as criminogenic needs on their own (Adams et al., 2013; Ford, Steinberg, et al., 2012; Kerig et al., 2009; Kimonis et al., 2011). The presence of TEE or TSS could have impacted the scoring of individual items comprising YLS/CMI domains. For example, angry outbursts are one potential expression of hyper-arousal symptoms of PTSD. Anger is associated with aggression and may be expressed as a tantrum, verbal aggression, or physical aggression, all of which are present on the YLS/CMI under the Personality/Behavior domain. Researchers have identified links between PTSD symptom severity and anger problems, particularly for boys (see Bennett & Kerig, 2014), as the combination of both problem areas has been linked to recidivism (Tossone, Butcher, & Kretschmar, 2017). One recent investigation found that after controlling for comorbid mental health symptoms, youth diagnosed with PTSD reported higher levels of anger than trauma-exposed youth with no PTSD symptoms and a control group with no trauma exposure (Saigh, Yasik, Oberfield, & Halamandaris, 2007). That there were no differences in the total number of need areas identified as high risk, and the Attitudes/Orientation and Personality/Behavior domains in particular, indicates that JPOs in the current study coded these items based on the youth's behavior described in the vignette and did not elevate YLS/CMI domain scores due to potential underlying drivers of the behavior (i.e., hyper-arousal symptoms increasing the likelihood for anger problems). This finding has both positive and negative implications for case planning. On a positive note, the presence of TEE or TSS did not bias scoring of needs or inflate overall decisions about risk. However, when these same needs were elevated in the presence of TEE or TSS, the overall case plan results suggested that JPOs may be less likely to consider trauma as a driver of such behaviors and not consider to what extent these needs could be addressed through trauma-specific or trauma-informed interventions.

Trauma and specific responsivity. Just over 70% of the sample scored any specific responsivity factors on the YLS/CMI. The RNR model clearly delineates the relevance of specific responsivity factors when developing overall rehabilitation plans. Despite extensive training on the YLS/CMI and case planning, the fact that 30% of participants scored no specific responsivity factors suggests the need for additional training on the responsivity principle. This broad finding is consistent with previous qualitative findings that JPOs paid relatively little attention to specific responsivity compared with criminogenic needs (Haqanee, Peterson-Badali, & Skilling, 2015).

However, when JPOs were presented with a vignette that described exposure to traumatic events (TEE+), they appropriately identified trauma exposure-specific responsivity items on the YLS/CMI at a higher rate than JPOs in the TEE− condition. The same was true for TSS, as participants who received a TSS+ vignette identified traumatic stress responsivity factors on the YLS/CMI at a higher rate than JPOs who were not presented with this information (TSS−). As noted above, 24 (32.0%) of the JPOs who received the TEE+ vignette rated no specific responsivity factors and 48 (63.2%) JPOs who received the TSS+ vignette rated no

specific responsivity factors. These findings suggest that being trained on the YLS/CMI does not guarantee that JPOs will identify specific responsivity factors related to trauma when such information is clearly identified as part of a youth's history and current functioning.

It logically follows that JPOs very rarely targeted TEE or TSS for intervention on case plans; only three case plans specifically targeted trauma. Although Vieira and colleagues (2009) found a low responsivity match rate (26%,) for five specific responsivity factors identified by clinicians, the responsivity match ratio was even lower in the current study (3.2%). This is a particularly troubling finding given the high rate of TEE (see Dierkhising et al., 2013) and PTSD diagnoses among justice-involved youth (see Ford, Chapman, et al., 2012). It is possible that this finding was impacted by the study methodology and the specificity of trauma-specific responsivity factors on the YLS/CMI. Presenting TEE and TSS in a vignette without specific reference to general mental health or trauma-specific screenings, or via a specific diagnosis (e.g., PTSD), may have impacted JPOs' assessment of either the relevance or severity of trauma-specific information in relation to the criminogenic needs present in the vignette. JPOs may not be confident in making recommendations specific to exposure to traumatic events or posttraumatic stress symptoms without the presence of more detailed information such as trauma-specific screening results or a formal diagnosis. In light of Welch-Brewer and colleagues' (2011) findings that the presence of a mental health diagnosis increased the number of probation services, it could be that mental health diagnoses, not merely a description of symptoms, affect JPO case planning.

Additionally, there are limited options to code trauma-specific responsivity factors on the YLS/CMI. Only six specific responsivity items correspond to TEE and one specific responsivity item corresponded to TSS, in addition to the opportunity to identify TEE or TSS in the "other" item. Therefore, it is possible that JPOs in the TEE+ and TSS+ conditions simply did not find a relevant responsivity item that corresponded to the information in the vignette. This limitation would then further limit their ability to make a trauma-specific recommendation on the case plan. It is also possible that JPOs considered TEE/TSS information when making a general mental health case plan recommendation. Just under half of the case plans included a recommendation for mental health services (counseling, therapy, or an evaluation), indicating that a number of JPOs recognized the importance of mental health services for the youth described in the vignette. However, JPOs in the TEE+ and TSS+ conditions were no more likely to recommend a general mental health evaluation or services, which indicates that the presence of trauma information did not result in a greater likelihood of mental health referrals.

These findings suggest that youth under probation supervision who have a history of TEE, or are currently experiencing TSS, are unlikely to be referred or connected to trauma-specific services by their JPO. Given that youth rarely seek care on their own (Stiffman, Pescosolido, & Cabassa, 2004), such youth are unlikely to receive the potential benefits of trauma-specific assessment or treatment unless JPOs are able to identify trauma and develop case plans that support such referrals. These findings are generally consistent with previous research findings that JPOs are better able to identify externalizing symptoms (e.g., aggressive or delinquent behavior) than internalizing symptoms (e.g., sleep difficulties, negative mood, or PTSD; Wasserman et al., 2008). About 50% of JPOs included general mental health referrals in their case plans. This is a generally positive finding if it can be assumed that clinicians receiving that referral will accurately identify the specific mental health problems contributing to delinquent behavior. However, a generic mental health recommendation, in the presence of specific information about trauma-related symptoms, provides little guarantee that these symptoms will either be further evaluated or effectively treated. The purpose of rating responsivity factors on the YLS/CMI is to ensure that case planning and service referrals are properly informed and targeted. Thus, the fact that almost 30% of the current sample did not utilize the responsivity section of the YLS/CMI indicates that JPOs prioritize criminogenic needs over responsivity factors in case planning.

Future research should examine how JPOs consider the relevance of mental health-related specific responsivity factors. It is possible that JPO orientation, whether JPOs see their role as being more aligned with law enforcement or rehabilitation efforts (Anderson & Spanier, 1980; Shearer, 2002), impacts identification of mental health difficulties and prioritizing this information on case plans. Regardless of orientation, evidence suggests that JPOs who do not feel competent to address mental health concerns with youth on their caseload may be less likely to use strategies associated with treatment (Holloway, Cruise, Downs, Monahan, & Aalsma, 2017). Taken together, these findings suggest that JPOs may feel more comfortable deferring to clinicians to confirm a diagnosis and provide guidance as to how mental health information in general, and trauma information in particular, should guide case management practices. However, the relative lack of case plan strategies specifically targeting trauma in the presence of TEE and TSS is problematic; youth with this history will not be identified for further trauma screening and assessment, which represents a missed opportunity to link trauma-exposed youth to appropriate treatment services. This finding also has implications for JPOs' role as gateway providers to mental health care among justice-involved youth with mental health concerns. For example, a recent study found that when justice-involved youth who screened positive for mental health concerns in juvenile detention were connected to mental health care, clients and their caregivers perceived their JPO as playing a gatekeeper role in their connection to care (Holloway, Brown, Suman, & Aalsma, 2013). Additionally, recent findings suggest that receipt of mental health treatment is associated with addressing more criminogenic needs, and when case plans addressed both areas, recidivism rates were lower compared with youth with only one or neither area addressed (McCormick, Peterson-Badali, & Skilling, 2017). These findings underscore the importance of identifying and targeting mental health-based specific responsivity factors on case plans and connecting youth to appropriately matched services.

Limitations and Future Directions

There were a number of limitations in the current study. First, TEE and TSS were presented to participants without specific mental health screening information. Vignettes mirrored those used in annual booster trainings by participating jurisdictions and therefore did not include general or trauma-specific mental health screening results. Since mental health screening is increasingly used in juvenile probation settings (Coker et al., 2014), the exclu-

sion of mental health screening results represents a threat to external validity. Trauma screening has also been identified as an essential element of a trauma-informed juvenile justice system by the National Child Traumatic Stress Network (NCTSN, 2016), whereas a recent task force on community violence commissioned by the Attorney General called for universal trauma screening for all youth exposed to community violence, including those involved in the juvenile justice system (U.S. Attorney General's National Task Force on Children Exposed to Violence, 2012). Hence, future studies should examine whether systematic variation of TEE and TSS in the context of mental health and trauma screening information or a psychological assessment would result in improved identification.

The current sample consisted of frontline JPOs, supervisors without caseloads, and other specialized positions. Although it is clear that frontline JPOs comprised in the sample had received YLS/CMI and case plan training, such training does not guarantee competent practice. Inclusion of JPOs based on training alone met the needs of this study. However, future research should exclusively focus on frontline staff that routinely score risk assessments and develop case plans as risk assessment scoring and case plan development may differ between those who routinely engage in these activities and those who do not.

Despite a high overall participation rate, one county evidenced a significantly lower response rate with just over one third of eligible participants in that county returning a completed data packet. Although no county-level differences were found on the study variables, future studies should carefully attend to potential county-level differences in participation rates and examine impact on similar study variables. Such county-level differences could reflect jurisdiction-specific risk/need assessment and case planning practices that could impact aggregate data.

Another limitation was the lack of a manipulation check to ensure that participants in the TEE+ and TSS+ vignettes attended to this information in the vignette. Future studies utilizing vignettes should consider including a series of multiple-choice questions that verify identification of key vignette risk assessment. However, in this study, such a manipulation check would have alerted JPOs to the key manipulation and could have impacted the YLS/CMI scoring and case plan development.

Finally, findings in the current study are not directly generalizable because of the vignette design. Using vignettes allowed for experimental manipulation of TEE and TSS while holding all other client information constant. The use of the vignettes also allowed for testing of possible gender differences. Such a design limits generalizability of this study's results to real-world settings. However, the vignette design does not mirror the depth or range of information available to a JPO in conducting an intake interview. Therefore, these findings are a more accurate reflection of JPOs identification of case information presented in training vignettes than decision making in a real world setting. For example, JPOs in the field may have access to collateral records from past mental health assessments or treatment services, be able to interview a parent/guardian or contact other third-party collateral sources for more information (e.g., treatment providers). This information may reinforce the need to document and prioritize mental health histories on case plans. The lack of gender differences in this study should not preclude further investigation of gender differences in risk assessment coding or case plan match. Thus, these findings should be considered preliminary as convergent findings from studies with actual justice-involved youth are needed.

Conclusions

The results of the current study suggest that given training with annual booster sessions, JPOs are well equipped to rate overall risk and needs on the YLS/CMI to identify which criminogenic needs are the most relevant to recidivism risk and should thus be targeted for intervention in case plans. JPOs did identify more trauma-related responsivity factors on the YLS/CMI when these variables were present in the vignettes. However, in contrast to the adequate match ratio of high-risk needs identified on the YLS/CMI that were targeted on the case plan, JPOs did not incorporate specific TEE or TSS responsivity factors into case plans. These findings suggest the need for additional training on the Responsivity Principle in general, as well as TEE and TSS, specifically. Consistent with prior research, training appears to be effective in fostering adherence to the Risk and Needs Principles in juvenile probation practice (Vincent, Guy, Gershenson, et al., 2012), but more research is needed to examine adherence to the Responsivity Principle by JPOs. JPOs are gateway providers to mental health care (Holloway et al., 2013) and are naturally positioned to respond to trauma-based needs with referral for further assessment or treatment. Such referrals could positively impact a number of client-specific factors that are associated with recidivism risk reduction. Furthermore, risk/needs assessments, such as the YLS/CMI, may not provide adequate coverage of trauma as a specific responsivity factor; such lack of coverage reinforces the need for mental health screening in general, and trauma screening in particular, as important components of service planning for youth who come into contact with the juvenile justice system.

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