5-11-2011

Predicting Recidivism Among Juvenile Sex Offenders: The Validity of the ERASOR

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Abstract

Clinicians are often called upon to estimate the level of risk of a juvenile sex offender to sexually reoffend. Risk assessment evaluations often employ measures utilizing structured professional judgment to weigh empirically supported risk factors associated with recidivism in order to determine an overall level of risk. However, there is a lack of empirically validated risk assessment measures specifically developed for adolescent sex offenders. This study will examine the ability of the Estimate of Risk of Adolescent Sexual Offender Recidivism (ERASOR) to predict sexual and nonsexual reoffending. The archived records of 100 juvenile sex offenders, who had previously been the subject of a risk assessment by a forensic psychologist, were rated on the ERASOR and were coded for other relevant historical and clinical information. The predictive validity of the ERASOR was examined using Receiver Operating Characteristic (ROC) and Cox regression analyses. Results indicate that the ERASOR did not accurately predict sexual recidivism and had limited ability to accurately predict nonsexual or general recidivism. Implications on the future use of sexual recidivism specific risk assessment tools are discussed.

Predicting Recidivism Among Juvenile Sex Offenders: The Validity of the ERASOR

Adolescent males are estimated to be responsible for 20% of sexual assaults, a significant minority of all sexual crimes (Worling & Curwen, 2000, p. 965). This is further confirmed by Snyder (2006) who found that juveniles between the ages of 12 to 17 committed 19.5% of sexual assaults. These percentages are consistent with research findings accumulated over the last decade with best estimates reporting that adolescent males are responsible for 20% of all forcible rapes and between 30% to 50% of all child molestations (Barbaree & Marshall, 2006). Accordingly, clinicians are frequently asked to conduct risk assessment evaluations on juvenile sex offenders (JSO) to judge the level of risk they pose to the community.

Risk assessment is a process of evaluating an individual with two distinct goals: 1) to determine the risk that this person will commit future violence and 2) to develop treatment interventions aimed at reducing that risk (Boer, Hart, Kropp, & Webster, 1997). In the case of the juvenile sex offender, the risk assessment evaluation seeks to estimate the risk that a particular adolescent will reoffend. Risk assessments typically make predictions (an attempt to forecast the future), based on the potential (the likelihood that something will happen) of a behavior to occur (Rich, 2003). These predictions are founded on the idea that the behavior is likely to occur if things remain unchanged. While many argue that risk assessment does not make predictions, the literature on violence assessment is teeming with references to predictions of risk (Hanson, 2001; Hanson & Thornton, 1999; Hoge & Andrews, 1996, Prentky & Burgess, 2000). However, there is no way to determine if a juvenile sex offender will reoffend with absolute certainty; it is only possible to assess the likelihood or potential for reoffense. As a result, risk assessment aims to capture the potential risk for reoffending, rather than foretell future events (Rich, 2003).

The potential of risk is determined and conveyed using a risk-category assignment most often seen through levels of severity classified as low, moderate, and high. This risk-category assignment becomes the basis for important decisions regarding the type and intensity of treatment, length and location of placement, and the degree of supervision required (Rich, 2003; Prentky, Nien-Chen, Righthand, Schuler, Cavanaugh, & Lee, 2010; Elkovitch, Viljoen, Scalora, & Ullman, 2008). In addition to their use in treatment decision-making, risk assessments are also greatly relied upon in court proceedings where judges turn to these evaluations to assist them in their decisions regarding the potential rehabilitation of a juvenile sex offender, the severity of their sentence, and their need for involuntary confinement in secure settings. Risk assessment evaluations are increasingly used for these vital legal purposes.

Due to the growing public concern over the protection of communities from these adolescent offenders, legislation has been enacted that seeks to identify and incapacitate juvenile sex offenders (Prentky et al., 2010; Salerno, Najdowski, Stevenson, Wiley, Bottoms, Vaca Jr., & Pimental, 2010). In 2006, the Sex Offender Registration and Notification Act mandated that juveniles who have committed sexual offenses with aggravating circumstances (e.g. use of force, threat of serious violence) are subject to sex offender public registration and notification (Prentky et al., 2010; Salerno et al., 2010). In addition, juveniles are now subject to civil commitment laws where adolescents can have their commitments extended indefinitely if they are deemed to still be a significant threat to the community (DiCataldo, 2009; Wollart & Caldwell, 2010).

While these laws were implemented with the intention of protecting society from dangerous sexual predators, registration and civil commitment have unintended negative effects on a juvenile. The associated mental distress, harassment, and social isolation experienced may

in fact make the juvenile offender more likely to reoffend (Letorneau & Miner, 2005; Levenson & Cotter, 2005; Levenson, D'Amora, & Hern, 2007; Robbers, 2009). Risk assessments of juvenile sex offenders have become a critical foundation in legal and clinical decisions and have a significant impact on the lives of adolescent offenders. Given the importance of juvenile sex offender risk assessments, it is crucial to utilize reliable and valid assessment methods when evaluating a youth's level of risk.

Assessment of Juvenile Sex Offenders

Assessment has many forms and designs that range in complexity. It can be a single step process where a solitary checklist is completed or it can be a multifaceted process that gathers information from various sources. Minimally, it is recommended that the assessment of a juvenile sex offender contain a psychosocial history and a risk assessment (Rich, 2003, 2009). Even so, many advocate for an extensive, multistep assessment that bases its designation of risk on multiple sources: clinical interview with the juvenile, their family, correctional or treatment staff, and a review of records containing information regarding the juvenile (Douglas & Kropp, 2002; Douglas, Yeomans, & Boer, 2005; Rich, 2003; Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008).

Despite the existence of a variety of assessment methods and approaches that adhere to the same core rules, the assessment of juveniles is significantly different than for adults. Mainly, the assessment of juveniles must appreciate and consider the juvenile's stage of development. Adolescence is characterized as a period of dramatic growth and change regarding a youth's physical, emotional, neurological, and social development. Researchers commonly describe assessing the risk of an adolescent as analogous to assessing "moving targets" (Borum, 2003;

Grisso, 1998; Prentky & Righthand, 2003). This is evident through the research that has found many adolescents desist from violent behavior as they mature (Moffit, 1993).

A primary example of the effects of maturation can be demonstrated in the brain and neuro-imaging research that has been conducted on adolescents (Steinberg, 2004a, 2005b, 2007c). Research has found that the brain development of juveniles continues well through adolescence and this incomplete development directly affects their behavior. Specifically, the prefrontal cortex, an area of the brain responsible for executive functioning, experiences significant growth and change during the course of adolescence. The prefrontal cortex has been found to control executive processes, such as self-regulation, impulse control, foresight, and long-term planning, which are factors related to juvenile delinquency (Steinberg, 2005). Research has shown that once this area has developmentally matured, most often delinquent behavior has desisted. This research on the neurological development of adolescents suggests that juvenile sex offenders as a group do not inevitably grow up to become adult sex offenders. Rather, it is evident that the majority of delinquent behavior exhibited by adolescents is developmentally-related, not personality or trait related; only a small minority of adolescent offenders will continue to violently offend through their life course.

Most of the research to date has focused on the validation of risk assessment instruments for adult sex offenders. Less is known about the assessment of recidivism for juvenile sex offenders. The use of poorly validated techniques and measures can result in a variety of problems with real world implications for the juveniles who are the subject of such procedures. The problem lies in incorrectly assigning risk levels which can result in false positives and false negatives (Rich, 2003). False positives happen when an individual is assigned a high risk level when there is actually little to no risk. This is particularly detrimental to the juvenile sex offender

who is now labeled as high risk to sexually reoffend and may face severe consequences, such as civil commitment or community notification. False negatives occur when a low risk is assigned when the individual is actually dangerous. A false negative jeopardizes the safety of the public and allows the opportunity for possible future victims. It is the goal of risk assessment to capture the actual level of risk a juvenile sex offender poses to protect both the adolescent and society from potentially harmful situations (Rich, 2003; DiCataldo, 2009; Prentky et al., 2010). Therefore, the possibility of false positives and false negatives need to be considered when choosing an assessment approach.

Risk Assessment Approaches

The risk assessment approaches most often described in the violence risk assessment literature are unstructured clinical, actuarial, and structured professional judgment (Douglas & Kropp, 2002). Historically, risk assessment evaluations have been conducted from an unstructured clinical approach which imposes minimal guidelines or rules. Unstructured clinical assessment focuses on the interaction and exchange between the clinician and the individual. The clinician uses observations, interviews, and direct contact with the individual to inform their decisions on assigning a risk level (Rich, 2003). The main characteristic of the clinical approach is that the final assessment of risk is based solely on the clinician's experience, intuition, and judgment (Douglas & Kropp, 2002; Douglas et al., 2005; Welsh et al., 2008).

Because the unstructured clinical approach does not have strict rules governing its approach, it provides two significant advantages. The first advantage is that it allows for idiographic or situation-specific aspects to be considered in the evaluation of an individual (Douglas & Kropp, 2002). The second advantage is that the unstructured clinical approach focuses on the evaluation of dynamic factors which are associated with current behaviors, such

as thoughts, feelings, attitudes, and relationships. These factors often change over time for a variety of reasons from growth, both personal and developmental, to intervention, such as positive changes associated with treatment. While past behavior can often be used to predict future behavior, it cannot account for changes in risk the way dynamic factors can (Rich, 2003).

The strengths of this approach are tempered by a set of weaknesses also found in unstructured clinical assessment. The main criticism of this approach is that without rules or guidelines the unstructured clinical assessment lacks the reliability and validity that is crucial to determining risk (Litwack, 2001; Quinsey, Harris, Rice, & Cormier, 1998). The lack of empirical grounding within the clinical approach increases the likelihood of inconsistent (unreliable) and inaccurate (invalid) judgments. This is specifically seen in the unstructured clinical assessment of sex offenders where clinicians do not consistently arrive at the same level of risk (a reliability problem) and the risk level is often over-estimated (a validity problem) (Barbaree, Seto, Langton, & Peacock, 2001; Hanson, 2000). As a result, the unstructured clinical approach has been criticized by more empirically guided clinicians who believe that it is unscientific and based on "gut feeling". Often deeming it flawed and have labeled it as "informal, subjective, [and] impressionistic" (Grove & Meehl, 1996, p. 293).

Actuarial assessment is an approach involving a set or rules or algorithms that provide a structured and standardized approach to rating the risk level of an offender (Rich, 2003). The goal of the actuarial method is to make a prediction by comparing an individual to a norm-based group and by providing a precise estimate of the probability or likelihood future violence will occur (Douglas & Kropp, 2002). In an actuarial assessment, risk assignations are based on variables that have been empirically supported and statistically relevant to factors that contribute to future reoffending (Hanson, 2000). The majority of actuarial assessments heavily weigh static

variables that are based on historical factors that are not liable to change over time. In order to properly implement the actuarial approach, evaluators are forced to use a fixed set of factors and cannot consider unique or context-specific variables (Douglas & Kropp, 2002; Hart, 1998).

While they are not mutually exclusive from one another, the actuarial and unstructured clinical assessments are two different methods that have been subject of a long standing debate within the field of risk assessment (Rich, 2003; DiCataldo, 2009). It is most commonly held in the literature that actuarial assessments are more accurate, that is more highly predictive, than unstructured clinical assessments. Many researchers have even advocated for replacing all other practices with the actuarial method (Steadman, Silver, Monahan, Applebaum, Robbins, Mulvey, Grisso, Roth, & Banks, 2000; Hanson & Thornton, 2000; Quinsey et al., 1998). Conversely, other researchers have contended that it is premature to substitute actuarial for unstructured clinical methods claiming that the research has not presented an actuarial equation or scale that is suitable for the area of violence prediction (Litwack, 2001; Boer et al., 1997; Melton, Petrila, Poythress, & Slobogin, 1997).

Although there exists a movement toward actuarial over unstructured clinical assessment, actuarial methods alone do not suffice when making a risk prediction for future sex offending. Actuarial methods lack the necessary flexibility and range, as well as the ability to account for situation specific aspects or changes in life (Rich, 2003). Actuarial assessments are primarily based on what has happened (static historical factors) and cannot properly account for other clinical processes that change over time (dynamic factors) which could shift the predicted outcome (re-offense). Therefore, the need for clinical judgment in risk assessment still exists (Doren, 2002).

Because these two approaches have significant shortcomings, clinicians have come to rely upon a preferred approach to risk assessment for juvenile sex offenders. Today, the majority of risk assessment evaluations use structured professional judgment which incorporates the strengths of the unstructured clinical and actuarial assessments, resulting in the elimination of some of the weaknesses in the other approaches reviewed here. Structured professional judgment does not solely rely on static statistically significant factors or purely on unmeasured or unsystematized clinical judgment. Instead clinicians follow a set of guidelines based on the current theoretical, clinical, and empirical knowledge of the field (Douglas & Kropp, 2002). These guidelines also provide a minimum set of risk factors to be considered and recommendations for gathering information and communicating risk levels.

The structured professional judgment approach calls for the evaluator to consider and weigh a delimited set of risk factors, and to make a final estimate of risk that also incorporates their clinical judgment (Douglas & Kropp, 2002; Hart, 1998; Webster et al., 1997). Accordingly, this method does not completely eliminate the intuition or judgment of a clinician, but does try to improve the reliability and validity of risk assignments by centering and systematizing them in a defined way (Douglas & Kropp, 2002). The advantage of employing this method lies in its ability to combine the strengths of both unstructured clinical and actuarial assessments. This method is far more standardized than the unstructured clinical approach, yet without the inflexible, rigid nature of the actuarial assessment. The structure is rooted in the guidelines which provide empirically relevant factors for consideration, as well as the operational definitions and criteria for scoring the factors (Douglas & Kropp, 2002). The flexibility of the method is in the opportunity for the clinician to use their professional judgment in a systematized way rather than be limited to the algorithmic combining of risk factors (Douglas & Kropp, 2002). Finally, the

structured professional judgment approach accounts for both static and dynamic risk factors, yet places a greater emphasis on dynamic risk factors. This ensures that while past behavior is considered, the current circumstances and changes are appropriately weighed when estimating an individual's present risk level. Structured professional judgment is an advantageous aid in risk assessment as it provides a systematic, organized process to determining the risk level of a juvenile sex offender.

Risk Assessment Tools for Juvenile Sex Offenders

In recent years, a variety of risk assessment tools utilizing a structured professional judgment approach have been developed specifically for juvenile sex offenders. These instruments are commonly modeled after risk assessment tools created for adults, but contain risk factors found or believed to be associated with developmental issues related to sex offending in juveniles. Currently, there is little research that supports the predictive validity of these instruments. Predictive validity is the extent to which the clinical judgment yielded from the instrument accurately predicts the likelihood that a juvenile sex offender will sexually reoffend. However, research has found evidence for the reliability of these measures through reports of interrater reliability. Research has demonstrated that the factors comprising the tools can be consistently scored for the same juvenile by more than one evaluator. Still, whether these instruments can sufficiently predict recidivism for juvenile sex offenders has yet to be firmly established. The predictive validity of these measures is a crucial standard when evaluating the utility of a risk assessment tool (DiCataldo, 2009).

The efforts to establish the predictive utility of risk assessment instruments for juvenile sex offenders is in progress. The elusive success of these efforts is related to the low base rate of reoffense for juvenile sex offenders. The fact that only a low percentage of these adolescent

offenders sexually recidivate is an obstacle in validating these measures. This is because juvenile sex offenders do not reoffend at high enough rates that would allow these risk assessment instruments to demonstrate their accuracy adequately (DiCataldo, 2009). For an instrument to work, a sufficient degree of variability is required. Predicting human behavior is an already difficult task, but adding a low base rate of occurrence makes it even more difficult to detect the behavior of interest, in this case the sexual reoffending of adolescents (DiCataldo, 2009; Rich, 2003).

Recidivism

Recidivism rates for juvenile sex offenders vary drastically throughout the literature, ranging from 0% to 40%, with the majority of studies estimating recidivism rates for juvenile sex offenders to be between 5% and 15% (DiCataldo; Caldwell, 2009; Worling & Curwen, 2000; Worling & Langstrom, 2003, 2006). This is a relatively low base rate of sexual reoffense when compared to the 20% to 40% of adult sex offenders who have been found to recidivate (Hanson & Bussiere, 1998). This sentiment is further echoed in research that has found evidence that juvenile sex offenders are much less likely than adult sex offenders to go on to sexually reoffend and that established base rates for this population are very low (Zimring, 2004; Caldwell, 2002; Caldwell, 2007; Worling and Langstrom, 2006). Furthermore, rates of reoffending for juveniles may be even lower when they undergo treatment, as research has shown that adolescents are more amenable to rehabilitation (Caldwell, 2009; Worling & Curwen, 2000; Worling & Langstrom, 2003; Worling, Litteljohn, & Bookalam, 2010).

Two meta-analyses recently published capture the consistently low reoffense rates found among the recidivism literature. The first study conducted was by Worling and Langstrom (2006) who examined 22 published follow-up investigations of juveniles who had previously

committed a sexual offense. The mean follow-up periods varied from six months to nine years. Worling and Langstrom found that researches who used criminal charges as their measure for reoffense had an average recidivism rate of 15%. When researchers used the more conservative measure of conviction, a 14% recidivism rate was reported. Despite the differences in the criteria used in the outcome variable, there were no significant differences between the two estimates. However, when the outcome examined was any criminal reoffense, including sexual reoffending, the recidivism rate greatly increased to 54% for a new charge and 42% for a new conviction. The higher rates of recidivism for nonsexual offending found by Worling and Langstrom is consistently found in the recidivism literature for juvenile sex offenders.

The second meta-analysis, and one of the most recent to be published, was conducted by Caldwell in 2009. Sixty-three data sets were examined that comprised over 11,000 juvenile sex offenders. The mean follow-up period was 59.4 months. Caldwell (2009) found that the weighted sexual reoffense rate was 7% while the general recidivism rate was much higher at 43%. The recidivism rate for sexual reoffending did not significantly differ when studies relied on arrests or used the more conservative outcome measure of conviction. These results are similar to those found by Worling and Langstrom (2006) and reiterate the reported results of many other studies.

Two issues can be concluded from the published research on juvenile sex offender recidivism; 1) juvenile sex offenders sexually reoffend at a very low rate and 2) juvenile sex offenders are more likely to nonsexually reoffend than to sexually recidivate. There are a number of reasons that could explain the low sexual recidivism rates found for juvenile sex offenders. One reason is the heterogeneous makeup of juvenile sex offenders. Under this large umbrella category exists offenders that widely differ from low risk to high risk, deviant and non-deviant,

and solitary versus repetitive offenders (DiCataldo, 2009). This heterogeneity of risk reduces the overall recidivism rate for sexual offending.

Another reason that can greatly affect the recidivism rate and is commonly noted is the length of follow-up time utilized in a study (DiCataldo, 2009; Rich, 2003; Worling & Langstrom, 2006 add more sources). Recidivism rates will vary depending on the period of time reoffending is tracked for a juvenile sex offender. Generally, higher recidivism rates are reported as the length of follow-up increases (Hanson & Bussiere, 1998; Caldwell, 2002). Finally, how researchers choose to define recidivism can significantly impact the recidivism rates yielded for juvenile sex offenders. Low recidivism rates will be found when conservative measures are used (e.g. convictions) while broader definitions of recidivism (e.g. arrests) obtain greater reoffense rates (Hanson & Bussiere, 1998).

The retrospective report of adult offenders on the onset of their sexual offending is a measure fraught with problems. This measure of recidivism is often used in studies in an attempt to achieve a more global estimate of sexual reoffending for juveniles (DiCataldo, 2009). This commonly produces inaccurate results that suggest sexual deviance is established in adolescence, leading to faulty reasoning that juveniles who sexually offend in adolescence will go on to become adult sex offenders. This faulty reasoning fuels the view often held by the public that juvenile sex offenders progress to more serious sexual offending as adults. However, research shows that the vast majority of juvenile sex offenders do not make this progression. In fact, the majority of juvenile sex offenders stop committing sexual offenses, and more often continue their criminal activity in nonsexual ways during adolescence before ceasing all criminal behavior before reaching adulthood (DiCataldo, 2009; Caldwell, 2002, 2007; Worling & Curwen, 2002; Zimring, 2004). This notion is supported in recidivism research that has found juvenile sex

offenders to be between two and four times more likely to be reconvicted for new nonsexual offenses than to be reconvicted for a new sexual offense (Worling & Langstrom, 2006). The use of retrospective reports focusing on a small, unique subgroup of high risk adult sex offenders will over-estimate the prevalence of sexually offending of juveniles (DiCataldo, 2009).

While the number of research studies examining the recidivism of juvenile sex offenders is increasing, the empirical literature documenting the validity of risk assessment instruments for this population as a whole is lacking. The combination of low recidivism data significantly limits the ability to develop actuarial tools to be used in the risk assessment of juvenile sex offenders (DiCataldo, 2009; Caldwell, 2009; Rich, 2003). Without sufficient empirical knowledge, the risk assessment of juvenile sex offenders remains an impressionistic and faulty clinical endeavor. However, the absence of empirical validation and support for risk assessment instruments for juvenile sex offenders has not slowed down their development. Currently, there are a number of risk assessment instruments utilizing a structured professional judgment approach that have been reported in the literature.

Juvenile Sex Offender Typologies

It has been established in research that juvenile sex offenders vary greatly across factors such as demographics, early childhood, family dynamics, personality and clinical factors, and criminal histories. As a result, juvenile sex offenders, as a group, have been described as heterogeneous (Butler & Seto, 2002; DiCataldo, 2009; Van Wijk, Vermeiren, Loeber, Hart-kerhoffs, & Bullens, 2006; Zimring, 2004; Hunter, Figueredo, Malamuth, & Becker, 2003). To bring more order to the heterogeneity of juvenile sex offenders, researchers have begun to develop typologies in which to categorize juvenile sex offenders and make them into more manageable homogeneous subgroups. It is hoped that through this separation that meaningful

differences, believed to be hidden by the vast diversity among juvenile sex offenders, will be found and would improve the understanding of the risk factors, treatment needs, and risk for future offending for this population of offenders (DiCataldo, 2009; Rich, 2009).

While there are a variety of methods to create and develop typologies, there are two typologies, age of offender and type of victim, which are regularly seen in juvenile sex offender research. Separating juvenile sex offenders by their age is one of the most researched and basic typologies (Viljoen et al., 2009; Elkovitch et al., 2008; DiCataldo, 2009). In this typology, juveniles are divided into two groups, adolescent and preadolescent. Older youth, typically 16 years of age and older, comprise the adolescent group, while younger youth, commonly 12-15 years of age, are placed in the preadolescent group. This typology has been in research investigating the effect of developmental differences on the predictive validity of risk assessment measures for juvenile sex offenders. Research has found that the Juvenile Sex Offender Assessment Protocol-II (JSOAP-II; Prenty & Righthand, 2003) and the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2003) were less predictive of reoffending among younger adolescents (12 to 15 years of age) than for older juveniles (16 years and older) (Elkovitch, Viljoen, Scalora, & Ullman, 2008). Specially, the occurrence of false positives was more common in younger juvenile sex offenders.

Similarly, another study found that there were age related differences in the predictive ability in the Estimate of Risk of Adolescent Sex Offender Recidivism (ERASOR; Worling, 2004), where ERASOR total scores were significantly better in predicting nonsexual violence in adolescents 16 years and older. Both studies found that age had a significant effect on the ability of risk assessment tools for juvenile sex offenders to predict reoffending. Researchers continue to examine the effect of this typology because literature suggests that there may be important

developmental differences, most likely due to immaturity of youth rather than stable characteristics indicative of long-term risk, between these two groups (Viljoen et al, 2009). Furthermore, it is important to examine if the predictive validity of these measures is more or less effective for juveniles who are members of these subgroups.

The second most researched typology for juvenile sex offenders is determined by the type of victim found in their sexual offenses. Juvenile sex offenders are typically separated into child molesters and peer/adult offenders (Hunter, Hazelwood, and Slesinger, 2000; Hunter et al., 2003; Seto & Laumiere, 2006; DiCataldo, 2009). This method of division is drawn from the literature on adult sex offenders, which commonly separates sex offenders into child molesters and rapists. Empirical support exists for this typology among adult sex offenders where research has found child molesters and rapists to greatly differ across aspects such as sexual abuse history, criminal history, and recidivism (Barbaree, Hudson, & Seto, 1993; Hanson & Bussiere, 1998; Segal & Marshall, 1985; Seghorn, Prentky, & Boucher, 1987). The success for differentiating adult sex offenders by the type of victim has lead to the common application of this typology to juvenile sex offenders.

Research on the type of victim typology has yielded significant differences between juvenile sex offenders with child victims and peer/adult victims (Hunter et al., 2003). One important difference between these two groups can be seen in the gender of the victims. Juvenile sex offenders with peer/adult victims tend to offend against women, whereas child molesters target males about half of the time. Another difference lies in the familiarity with the victim and research has found that juvenile sex offenders with peer/adult victims tend to offend against strangers and acquaintances, while child molesters have familial victims, usually siblings or relatives. The situational context of the offense is yet another meaningful difference seen, where

peer/adult juvenile sex offenders' crimes are more likely to be group based and happen in context of another criminal act (e.g. burglary) and child molesters often act alone and independent of another crime. Finally, the type of victim of a juvenile sex offender highlights the difference in the use of violence between these two groups. Juveniles with peer/adult victims tend to commit their assaults outdoors with a modus operandi of surprise and violent force that causes injury. Conversely, child molesters tend not to have assaults that require physical force for compliance and instead use their familiarity with the victim and subtle coercive techniques (e.g. the idea of play or bribes) to gain compliance. These important distinctions found from utilizing the type of victim typology indicate that juvenile sex offenders with peer/adult victims better resemble violent delinquents than child molesters (Hunter et al., 2000; Hunter et al., 2003).

Research has found important differences between peer/adult and child molesters for more than the criminal characteristics of their sex offenses. Similar and important differences have also been found on the psychological aspects between groups based on type of victim. Research has demonstrated that child molesters have greater Psychosocial Functioning deficits which are primarily seen in their social immaturity and emotional control problems. Child molesters are also less aggressive in their sexual offenses, less likely to have been abusing substances at the time of their offense, and less likely to use a weapon than peer/adult offenders (Hunter et al. 2003). While these are important differences related to psychological factors, their utility as a predictor of group membership is small and some research has yielded inconsistent results (Kemper & Kistner, 2007; Kemper & Kistner, 2010). Accordingly, further research on the effect of the type of victim of a juvenile sex offender is needed before the validity of this typology can be extended to psychological and clinical aspects (Hunter et al, 2003; DiCataldo, 2009).

Typically, the dichotomous division of this typology has been repeatedly seen in research. However, there has recently been a small body of research that has expanded the examination and investigation for the existence of meaningful differences among juvenile sex offenders by their type of victim (Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001; Hunter et al. 2003; Nisbet, Wilson, & Smallbone, 2004; Parks & Bard, 2006; Kemper & Kistner, 2007; Worling, 2001). Primarily, researchers have become interested in investigating juvenile sex offenders with mixed victims, that is, offenders who have both child and peer/adult victims. While little research currently exists, there is still some indication from a few studies that mixed offenders are a distinct group from child molesters and peer/adult offenders. Parks and Bard (2006) found that juvenile sex offenders with mixed victims consistently produced higher risk scores on the JSOAP-II and scored higher on The Hare Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) scales when compared to child molesters and peer/adult offenders.

Similarly, researchers have found a distinction for mixed offenders while examining the differences between these subgroups on sexual and nonsexual offense history, treatment outcomes, and recidivism. Specifically, mixed offenders presented with more diverse and more physically intrusive sexual offense histories and were less likely to successfully complete treatment (Kemper & Kistner, 2007). These two studies suggest that juvenile sex offenders with mixed victims are a distinct group who should be examined to highlight further important differences among this typology. Despite the limited number of studies containing mixed offenders, this subgroup is extremely important to examine. This subgroup frequently appears in juvenile sex offender samples and to disregard their presence is problematic as it can misrepresent important characteristics of the sample and fail to detect significant differences

between juvenile sex offenders with a specific preference of victim and those offenders who are more diverse in their victim selection (Parks & Bard, 2006; Kemper & Kistner, 2007; Kemper & Kistner, 2010). Future research including the examination of mixed offenders should be conducted as the next step in validating this typology.

While research on this typology has been largely successful in consistently finding important differences, there are still aspects of this typology which have yielded inconclusive and inconsistent results. Primarily, this is seen on the little research that has investigated the predictive validity of risk assessment measures and the varying rates of recidivism between the two groups. Research on sexual reoffending for juvenile sex offenders has reported inconsistent results for rates of recidivism. Some studies have found juvenile sex offenders with peer/adult victims sexually reoffend at higher rates (Nibet et al., 2004), while others report higher sexual recidivism rates for child molesters (Kahn & Chambers, 1991; Vandiver, 2006). Furthermore, a few studies have not found any statistically significant differences in rates of sexual reoffending for juvenile sex offenders with child, peer/adult, or mixed victims (Hagan & Cho, 1996; Kemper & Kistner, 2007; Parks & Bard, 2006). Only a handful of studies have examined how the predictive validity of risk assessment measures for juvenile sex offenders differ by group membership for the type of victim typology (e.g. Parks & Bard, 2006). Without further research, it cannot be determined how victim type affects the ability of available risk assessment measures to accurately predict the likelihood that juvenile sex offenders will reoffend.

Differentiating juvenile sex offenders into subgroups by type of victim has shown potential to become a fully developed and validated typology. Important differences have already been highlighted across these subgroups pertaining to the characteristics and context of the offending behavior. However, there are still important areas that merit further examination of the

distinctions across subgroups, such as its role and effect on Psychosocial Functioning risk factors, risk assessment measures' predictive validity, and recidivism rates. This typology holds great promise and more research is needed to validate this typology in hopes to move on to its application to treatment and determining risk for future sexual reoffense.

Another typology that shows potential is dividing juvenile sex offenders by type of offender. This typology was developed based on theoretical models of sexual aggression (Rajlic & Gretton, 2010). This theoretical framework is based on the idea that there are developmental differences between those sex offenders who offend in the context of larger antisocial behavior ("delinquency path") and those more solely concentrated on sexual offending ("sexual interest pattern path") (Becker & Kaplan, 1997; Rajlic & Gretton, 2010). Accordingly, in this typology juvenile sex offenders are divided into two groups based on the criminal versatility found in the history of their offenses; juvenile sex offenders with other nonsexual offenses and juvenile sex offenders with only sex offenses.

This method of division was first suggested by Butler and Seto (2002) and later implemented by other researchers (Way & Urbaniak, 2008; Van Wijk, Mali, & Bullens, 2007; Rajlic & Gretton, 2010). Butler and Seto (2002) labeled the two subgroups of this typology as sex-only and sex-plus and found consistent differences between these two groups of juvenile sex offenders. They found that the sex-only group had less childhood conduct problems, more prosocial attitudes, and a lower risk prediction for future delinquency when compared to the sex-plus group who appeared to be more antisocial and were at higher risk for future general offending.

Further research utilizing this developed dichotomous typology, found additional differences between these two groups. It was found that juvenile sex offenders in the sex-plus

group had criminal careers that began earlier and continued their criminal behavior for a longer period of time (Van Wijk et al., 2007). Also, research has found that juveniles with sexual and nonsexual crimes (sex-plus) presented with higher rates of childhood maltreatment, drug and alcohol use and abuse, mental health histories, and greater caregiver substance abuse and criminality (Way & Urbaniak, 2008).

Most recently, Rajlic and Gretton (2010) explored the effect of the type of offender typology had on the predictive validity of two risk assessment instruments for juvenile sex offenders (JSOAP-II and ERASOR). They labeled adolescent sex offenders (ASO) with a history of general offending as "delinquent ASO" and adolescent sex offenders without a history of general offending as "sex offense-only ASO". This study found the predictive accuracy of the risk assessment measures to differ across the subgroups. The delinquent ASO group had significantly higher total scores and risk domain scores on both the JSOAP-II and ERASOR. A moderating effect of type of offender on the predictive validity of both measures was found. Both the JSOAP-II and the ERASOR predicted sexual recidivism in the sex offense-only ASO group, but did not predict sexual recidivism better than chance in the delinquent ASO group. These findings suggest that juvenile sex offenders with a history of both sexual and nonsexual offenses (delinquent ASO group) are more problematic when predicting sexual recidivism.

Furthermore, Rajlic and Gretton found that juveniles in the delinquent ASO group resembled the versatile, nondelinquents in the study conducted by Butler and Seto (2002). This is illustrated by the high rates of nonsexual recidivism found in the delinquent ASO group. At the same time, they also found evidence contrary to the idea that delinquent ASO are similar to other nonsexual delinquents. In their study the delinquent ASO group scored higher not only on the

scales measuring general antisociality compared to the sex offense-only group, but also scored higher on scales assessing sexual deviancy.

A particularly interesting finding in this study was the detection of an existing overlap between the two typologies of type of victim and type of offender. Rajlic and Gretton (2010) found that there was a significant association between the type of offender (delinquent ASO and sex offense-only ASO) and the type of victim in the index offense (child and peer/adult). In other words, the delinquent ASO group where more likely to have peer/adult victims and the sex offense-only ASO group tended to have child victims. This study found some consistent, divergent, and interesting results which merit the attention of future research to continue the exploration of this typology.

Given the results of the research on juvenile sex offender typologies, further exploration on its role in sexual and nonsexual reoffending is warranted. Differentiating among juvenile sex offenders according to typology (age of offender, type of victim, type of offender) is proving to be a promising direction for better managing the heterogeneity of this population. If the heterogeneity of juvenile sex offenders is managed, characteristics of juvenile sex offenders can be better understood helping to improve the accuracy of assessing risk for reoffending and thus aid in determining the appropriate placement and treatment needs of an individual offender.

Estimate of Risk of Adolescent Sex Offender Recidivism

One of the most popular and widely used risk assessment instruments for juvenile sex offenders is the Estimate of Risk of Adolescent Sexual Offender Recidivism (ERASOR), developed by Worling and Curwen (2001). It is the second most used tool to evaluate the level of risk of a juvenile sex offender, after the Juvenile Sex Offender Assessment Protocol-II (Prenty & Righthand, 2003). The ERASOR is an empirically guided checklist intended to be used with

juveniles who have been adjudicated for sexual offenses and are between 12 to 18 years of age (Worling, 2004). The ERASOR was designed to be used by evaluators directly following a clinical assessment and while this is its preferred use, the ERASOR can also be coded from archival data (Worling & Langstrom, 2006). This risk assessment measure was modeled after two well-known risk assessment tools developed to estimate the likelihood of future offending for adults: Historical–Clinical–Risk (HCR-20; Webster, Douglas, Eaves, & Hart, 1997) and Sexual Violence Risk-20 (SVR-20; Boer, Hart, Kropp, and Webster, 1997). These two measures were designed to have an overall risk rating that was empirically guided to increase accuracy, while remaining primarily a clinical judgment. The HCR-20 and the SVR-20 have been extensively researched with findings supporting their psychometric properties (Worling, 2004). Similarly, the ERASOR does not tally risk scores to calculate a total score that dictates the probability of reoffense. Instead, the ERASOR allows clinicians to insert their judgment when determining the risk level of an individual offender.

The ERASOR has 25 items primarily selected from three sources of information. The first source was studies published on adolescent sexual-offense recidivism (Worling, 2004). The number of studies investigating recidivism risk factors specifically for adolescents was limited in quantity. The authors of the ERASOR mainly relied upon ten studies that focused upon the relationship between sexual-offense recidivism and any other variable. The second source of information was published checklists and guidelines on the assessment of risk and/or protective factors using clinical judgment. These guidelines and checklists had been developed by expert clinicians and used to address risk, placement, and treatment questions. Finally, the authors relied upon the vast research on adult sexual recidivism that has been amassed over the past few decades. This research was used to determine the risk factors that had been empirically supported

for adults that could extend or apply to adolescents. After selecting specific risk factors, a pilot version of the ERASOR was circulated among researchers and clinicians to gain valuable feedback. After considering the comments collected, the authors refined the included risk factors and decided upon the final 25 items (Worling, 2004).

The items of the ERASOR are arranged into five subscales. The subscales include Sexual Interests, Attitudes, and Behaviors (e.g. deviant sexual interests), Historical Sexual Assaults (e.g. ever sexually assaulted a child), Psychosocial Functioning (e.g. antisocial interpersonal orientation), Family/Environmental Functioning (e.g. high-stress family environment), and Treatment (e.g. incomplete sexual-offense-specific treatment). Items are scored as p*resent* if it can be readily observed in the adolescent, *possibly* or *partially present* if there is some evidence of the item existing, *not present* if the item does not apply to the youth, or *unknown* if there is insufficient information available to make a decision. The coding manual provides specific criteria, examples of behaviors, and the research/clinical support for each risk factor (Worling & Curwen, 2001).

The ERASOR does not have a specific formula to calculate risk and instead relies upon evaluator judgment in determining the final risk estimate for sexual reoffense (Worling & Curwen, 2001). An overall rating of Low, Moderate, or High is given to communicate the level of risk of an adolescent offender. It is anticipated that there will be a general relationship between the scores on individual risk factors (e.g. the number of high ratings) and the overall rating of risk (e.g. high risk summary rating). However, the authors maintain that the final risk estimate will be more dependent on the combination of risk factors rather than a simplistic linear summation of the number of risk factors scored as p*resent*. Furthermore, they also account for the possibility that the presence of a single risk factor (e.g. an offender stating he plans to

reoffend) could be indicative of high risk. The ERASOR relies upon clinical judgment as there is currently no empirical research supporting the use of a specific algorithm for combining risk factors to predict sexual reoffending (Worling & Curwen, 2001).

Research on the ERASOR has found the measure to have acceptable reliability. Worling (2004) found that the average-rating intra-class coefficient (ICC) was at or above .60 for all but one factor. Worling also found that the estimate for internal consistency for the Total ERASOR score was .75. Furthermore, he found that the overall clinical risk rating (low, moderate, or high) was .92. The results of this study suggest that there is sufficient interrater agreement supporting the reliability and item composition of the ERASOR. Similarly, several studies have found adequate interrater reliability with coefficients ranging from .75 to .92 (Edwards, Beech, Bishopp, Erikson, Friendship, & Charlesworth, 2005; Hersant, 2007; Morton, 2003; Skowron, 2004; Viljoen et al., 2009; Rajlic & Gretton, 2010) further supporting the psychometric properties of the ERASOR.

Regarding the criterion validity of the ERASOR, Worling (2004) found supportive results. In his study, the ERASOR was found to be able to discriminate first-time adolescent offenders from known repeat juvenile sex offenders. Additionally, Worling (2004) found overall risk ratings on the ERASOR were significantly higher from adolescents in residential programs (higher risk) than for community based juvenile offenders (presumably lower risk).

While the reliability and criterion validity of the ERASOR has been supported, studies investigating the predictive validity of the measure have yielded inconsistent results. Skowron (2004) investigated the predictive ability of the ERASOR in a sample of 110 adolescents with a history of sexual offenses. Results found the ERASOR to significantly predict any reoffense (.67), any nonsexual reoffense (.64) and any sexual reoffense (.71). Likewise, Morton (2003)

found that the ERASOR was significantly predictive of violent recidivism (AUC = .65), including sexual reoffending. Morton (2003) also reported that a modified score, based solely on nine ERASOR items, significantly predicted sexual assault recidivism (AUC = .74).

Viljoen and colleagues (2009) conducted one of the most recent studies investigating the predictive validity of the ERASOR and found contrasting results. Viljoen and researchers examined the predictive validity of the ERASOR along with other risk assessment instruments for both adults and juveniles. The study focused on determining the various tools' ability to predict sexual reoffending, as well as general recidivism. The sample comprised 193 male adolescents enrolled in a non-secure residential sex offender treatment program between 1992 and 2006. The researchers hypothesized that the ERASOR would significantly predict sexual reoffending but not general recidivism. The ERASOR was rated using case file information and criminal records were obtained to detect recidivism. The average follow-up period in which recidivism was tracked for the juveniles was 7.24 years after the youths were discharged from the program. The study found base rates for reoffending consistent with the literature; 8.3% for a sexual reoffense and 42% for any reoffense.

This study did not find the ERASOR to significantly predict sexual reoffending; however, the total ERASOR score approached significance. None of the subscales of the ERASOR predicted sexual reoffense, but the Psychosocial Functioning and Treatment subscale scores accurately predicted nonsexual violence and any reoffense (AUC score of at least .60). Viljoen and colleagues (2009) also found that the ERASOR total scores were significantly better at predicting nonsexual violence in adolescents who were 16 years of age and older than for younger juveniles. These three studies and others (Bremer and Dellacecca, 2006; Bourgon, Morton-Bourgon, & Madrigrano, 2005; Edwards et al., 2005; McCoy, 2008) highlight the mixed

results rendered by research examining the predictive ability of the ERASOR. These inconsistent findings highlight the need for further research examining the predictive validity of the ERASOR.

Rationale for this Study

While the development of risk assessment tools for juveniles, such as the ERASOR, is a significant step, there is still a need for research to validate these measures. There are currently a limited number of studies that have included the ERASOR as the risk assessment tool primarily under investigation. To meet the demand for further empirical validation, this proposed study will add to the growing literature by examining the ability of the ERASOR to significantly predict sexual reoffending for juvenile sex offenders. It is hypothesized that the ERASOR will accurately predict sexual recidivism, as well as nonsexual and any reoffense in our sample of adolescent sex offenders. In addition, it is hypothesized that when the overall accuracy of the ERASOR is compared with the accuracy of guided clinical judgments form forensic psychologists who offered risk estimates at the time of their assessment without the benefit of a structured professional judgment approach, that the ERASOR will more accurately predict recidivism for juvenile sex offenders.

Typologies of juvenile sex offenders are important to examine within research investigating the predictive validity of risk assessment measures for adolescents. Specifically, it is crucial to examine what effect developed typologies have on the predictive validity of risk assessment measures and determine the role group membership has on the likelihood for a juvenile to reoffend. Accordingly, this study will also examine the predictive accuracy of the ERASOR for three different sex offender typologies; age of offender (adolescent and pre-adolescent), type of victim (child, peer/adult, or mixed), and type of offender (sex offense-only

JSO and delinquent JSO). It is hypothesized that there are differential patterns across typologies and within subgroups on ERASOR ratings and for the predictive accuracy of the ERASOR for recidivism.

Method

Participants

Participants were male juvenile sex offenders committed to the Massachusetts Department of Youth Services (DYS), a state juvenile justice agency, after an adjudication of delinquency for a sexual offense. The sample was assembled by selecting 100 cases of juvenile offenders with a prior sexual offense who were evaluated by the Forensic Evaluation Service of the Bedford Policy Institute upon request from the Department of Youth Services. The Forensic Evaluation Service began in 1996 and through 2003 had completed approximately 2800 evaluations and compiled an extensive computer database. Evaluations were conducted by doctoral-level forensic psychologists to assess the risk and treatment needs for an individual offender. These clinical assessments were based on a review of records, a clinical interview with the juvenile, and interview with collateral sources such as parents, therapists and case workers. The evaluators did not use a structured professional judgment instrument in their evaluations. The psychologists produced a report of their findings containing an estimate of risk and treatment recommendations.

Seven cases of juvenile sex offenders were excluded from the sample due to incomplete data and unobtainable reoffense records. The final sample consisted of 93 juvenile sex offenders ranging in age from 12 to 19 years of age (M = 15.5, SD = 1.5). Fifty-three percent of the sample was White, 17% were African American, 15% were Hispanic, 2% were Asian American, and 13% were mixed race/ethnicity or other. Ethnicity and race data was missing for two cases of

juvenile sex offenders (n = 91). Participants were divided into various subgroups for the three sex offender typologies of interest in this study. For the age typology, juveniles were divided into older adolescents (16 and older) and younger adolescents (12-15 years) as seen in previous research (Viljoen et al., 2008, 2009). These two groups were formed based upon the documented age of the offender when they were committed to DYS. Of the sample of 93 juvenile sex offenders, information for the age of the adolescent was only missing for one youth. Of the remaining 92 juveniles, 40 (43%) fell between 12 to 15 years of age, and 52 (57%) were 16 years of age or older.

Participants were also divided into three subgroups for the type of victim typology: child victims, peer/adult victims, and mixed victims. Archival reports, police reports, and reoffense records were used to make these group subscriptions. Victims of the juvenile sex offenders were considered children if they were under the age of 12 and were four or more years younger than the adolescent offender. This definition for what constitutes a child victim was employed as it is the criteria used in the ERASOR when rating items regarding children (Worling & Curwen, 2001). Data was missing for three participants (n = 90). More than half of the sample perpetrated against children (53%), 38.9% offended against peers/adults, and 7.8% had mixed victims. Finally, juveniles were divided into two subgroups for the offender typology. Adolescents were placed in the sex offense-only JSO group if they had exclusively committed past sexual crimes or placed in the delinquent JSO group if they had a nonsexual criminal history in addition to their committed sexual offenses. Again, archival reports, police reports, and reoffense records were used to make these divisions. The sex offense-only JSO group consisted of forty youth (43%) while the delinquent-JSO group was formed by 52 (57%) adolescent offenders.

Data pertaining to the adolescent offender was collected solely from case files and forensic reports. The names and identifiers of the participants were redacted from all case files and kept strictly confidential. The study adhered to the ethical guidelines set forth by the American Psychological Association. Approval was gained from the DYS Institutional Review Board as well as Roger Williams University Human Subject Review Board (see Appendix A).

Materials and Procedure

Research materials. Archival case information was gathered from the psychological reports completed by a forensic evaluation service. The reports contained a complete clinical interview that included detailed information regarding the adolescent's psychosocial history, current mental status and Psychosocial Functioning, and important risk factors that are specific to the youth. In addition, the reports included the juvenile's account of the offense, particularly the circumstances preceding and reactions, attitudes, or behaviors following the sexual offense. Reports also included all relevant records pertaining to the juvenile, such as police and DYS reports, as well as educational, medical, and psychological records. Consultations from case workers, treatment staff, and program clinicians were also included. Evaluation reports comprised the data needed to assist in classifying and developing treatment for juvenile offenders.

Forensic Evaluation Data Sheet (FEDS). Information obtained from the forensic evaluation was extracted, coded, and compiled to complete the forensic evaluation sheet (FEDS; see Appendix B). Six broad areas are represented on the data sheet and include: 1) demographics (e.g., age, gender, race); 2) history of delinquency (i.e., list of prior delinquency adjudication and legal findings); 3) mental health history and data (e.g., history of suicide attempts, medications, and psychiatric hospitalization); 4) clinical data/risk factors (e.g., history of abuse, substance

abuse problems, peer associations); 5) nature of the offense (e.g., age and gender of victim, relationship to victim); and 6) clinical judgments (e.g., identified risk factors, overall risk level, treatment needs, recommendation of services). The "clinical judgments" section of the FEDS form contains an overall risk level rating (high, moderate, low) estimated by the psychologist and based on the global assessment of the juvenile sex offender's likelihood to reoffend. This guided clinical judgment was determined using the evaluator's knowledge and consideration of the relevant risk factors identified in the literature, yet has no set structure. It was used to compare to the risk level rendered from the structured professional judgment assessment tool to see if one method was more accurate than the other. This collected information was entered into a computer database.

ERASOR. The ERASOR (see Appendix C) was scored using the case files of the juvenile sex offenders. For the present study, each item was scored 2 = p*resent*, 1 = *possibly or partially present*, and 0 = *not present* or *unknown*. These scores on the 25 items of the ERASOR were summed to create total scores with a possible range of 0 to 50. Scores for the five ERASOR domains were calculated by summing the items that constitute each domain. The Overall Risk Rating, the final risk estimate of the rater, was coded 2 = *high risk*, 1 = *moderate risk*, and 0 = *low risk*.

Criminal Offender Record Information (CORI). CORI records are an official criminal history record maintained by the Criminal History Systems Board (CHSB). The Criminal History Systems Board is the state agency in charge of criminal justice information, including CORI services, for the state of Massachusetts. The CHSB is primarily composed of criminal justice agency representatives who are responsible for the administration, regulation of use, and access to a CORI. A CORI is a record of any appearance before a judge and contains

any arrests, prior convictions, serious violations, case dismissals, and any pending charges of an individual. CORI records were used in the study as the outcome variable to determine which juvenile sex offenders in the sample had a sexual or nonsexual reoffense. CORI records were requested and received by November 2010.

Procedure

Case files were accessed and used to score the ERASOR. Raters were four graduate students studying forensic psychology at Roger Williams University who received one day of training on the administration and scoring of the ERASOR. Specifically, training focused on a basic understanding of the purpose of the tool, as well as on teaching the raters how to appropriately rate individual risk factors and derive a final risk estimate (i.e. high, moderate, or low).

As part of training, raters completed five practice cases using actual case files, which were reviewed and discussed. After the training, cases were randomly assigned and independently completed to compile the 93 ratings for the sample of juvenile sex offenders. The case files raters received had the names of the adolescents redacted and replaced with research identification numbers in order to ensure anonymity. Raters also completed a standardized ERASOR scoring sheet with a cover page to ensure the privacy of information when recording ratings of risk (see Appendix C). ERASOR ratings were completed before collecting any other data and without the knowledge of a youth's recidivism.

Twenty cases (20% of the sample) were selected to assess the interrater reliability of the ERASOR ratings. For these 20 cases, a second, independent rater also rated the same case and Intra-class correlation coefficients (ICC) were calculated for the ERASOR Overall Risk Rating (.64), ERASOR Total Score (.76), Deviant Sexual Interests, Attitudes, Behavior Domain (.67),

Historical Sexual Assaults Domain (.93), Psychosocial Functioning Domain (.71), Family/Environmental Functioning Domain (-.031), and the Treatment Domain (.30). The ICCs for the majority of the scales indicated acceptable interrater reliability (ranging from good to excellent). However, the reliability coefficients for the Family/Environmental Functioning and Treatment Domains fell in the poor range. These results are lower than originally expected but still generally indicate acceptable interrater reliability.

After all cases have recorded ERASOR ratings, CORI records were used to identify which adolescents criminally recidivated and the type of reoffense committed. Motor vehicle and registration/notification violations were not counted as reoffending. Sexual reoffense was defined as an arrest, charge, or conviction for any new sexual offense during the follow-up period. Both contact and non-contact (e.g. exhibitionism) sexual offenses were included. Nonsexual recidivism was defined as an arrest, charge, or conviction for any new violent or nonviolent offense. Finally general recidivism was defined as an arrest, charge, or conviction for any offense during the follow-up period (sexual and nonsexual). Because general recidivism is a combination of sexual and nonsexual crimes, its use was for descriptive purposes and the predictive validity analyses were limited to sexual and nonsexual recidivism.

Data Analyses

Receiver Operating Characteristic

The area under the Receiver Operating Characteristic (ROC) curve was used to measure the accuracy of the ERASOR and the guided clinical judgments in predicting the recidivism of juvenile sex offenders. In addition, ROC analyses were used to examine the predictive ability of the ERASOR for juvenile sex offender typologies. The ROC curve estimates predictive accuracy by generating an area under the curve (AUC) score derived from plotting sensitivity against

specificity (Hanson, 1998; Hanson & Thornton, 1999; Viljoen et al., 2008, 2009; Prentky et al., 2010). Sensitivity is the true positive rate prediction, or the likelihood that the prediction will accurately identify recidivists. Specificity is the percentage of the group who were correctly identified (true negative) as not having the characteristic of interest (high levels of risk or dangerousness). Thus, the ROC curve depicts both types of error: false positives and false negatives.

The AUC score represents the probability that an individual who reoffends will receive a higher score on the measure than an individual who does not reoffend. The area under the ROC curve can range from .50 indicating the prediction is no better than chance, to 1.0 signifying perfect prediction with no overlap between recidivists and non-recidivists. In general an AUC score over .70 indicates strong and consistent predictive efficacy. One of the most significant advantages of the ROC is that it is not restrained by base rates. This is especially important when looking at juvenile sex offenders who have a low base rate of recidivism. Using the ROC will increase the likelihood of yielding significant results, making it more beneficial to use over other measures utilized in predictive accuracy (e.g. correlation coefficients). As a result, ROC analyses are widely used in risk assessment research with both adult and juvenile offenders (Hanson, 1998; Hanson & Thornton, 1999; Prentky et al., 2010; Viljoen et al., 2009; Rajlic & Gretton, 2010).

Cox Regression

Cox Regression analyses were conducted to examine the accuracy of the ERASOR in predicting time to first reoffense for juvenile sex offenders. Cox Regression is a statistical method of survival analysis that is used to investigate the relationship between predictor variables and an event. Survival analysis is a method of determining whether or not an event will

happen, in this case, the event in question is the juvenile sex offender sexually and nonsexually recidivating. Positive regression coefficients for predictor variables decrease survival times (JSO recidivates sooner after release), while negative regression coefficients increase survival times (JSO recidivates later). Cox Regression produces the proportional hazard function where hazard is probability of the event of interest (recidivism) occurring. A hazard ratio, also called an odds ratio, is produced in a Cox Regression. Cox Regression predicts the ratio of hazard rates (the probability of recidivism happening) for predictor variables.

The predictor variables that are of interest in this study are ERASOR total scores, ERASOR overall risk ratings, and the guided clinical judgments. In Cox Regression analyses a value of 1 was assigned for juvenile sex offenders who reoffend and a value of 0 if they did not recidivate. Time to first reoffense was measured in days starting at the date of discharge from DYS custody. The final follow-up date was used to calculate time at risk for juvenile sex offenders who did not reoffend. Time at risk was calculated separately for each type of recidivism (i.e. sexual, nonsexual, and general). Researchers were not able to track and account for the times when the offenders may not have been at risk to recidivate (e.g. time in jail).

Results

Risk Judgments

On the ERASOR 43% of youth were classified as low risk, 27% as moderate risk, and 30% as high risk for sexual reoffending. The mean ERASOR Total Score for the sample was 16.03 (SD = 8.20). For the Guided Clinical Judgments (n = 78; 84% of the sample) 16 youth (21%) were classified as low risk, 26 (33%) as moderate risk, and 36 (46%) as high risk for reoffending by the evaluating clinician.

ERASOR Total Scores and Overall Risk Ratings were compared to examine differences across juvenile sex offender typologies. For the age of offender typology older (M = 15.69, SD = 8.62) and younger (M = 16.55, SD = 7.78) juvenile sex offenders did not significantly differ in their ERASOR Total Scores, $t(90) = 2.07$, $p = .15$. Similarly, no significant differences were found for the ERASOR Overall Risk Rating, $\chi^2(2) = .15$, $p = .93$. Forty-three percent of younger adolescents were found to be at low risk, 25% at moderate risk, and 33% to be at high risk for sexual reoffending. According to the guided clinical judgments rendered by the forensic psychologists, 6 younger youth (17%) were found to be of low risk, 15 (42%) of moderate risk, and 15 (42%) to be of high risk for re-offense. For older youth half of the sample (50%) was found to be at high risk for re-offense and the other half to be almost evenly split between low (24%) and moderate risk (26%). However, no differences were found across the subgroups when examining the guided clinical judgments, $\chi^2(2) = 2.17$, $p = .34$.

In the type of victim typology of those with child victims 40% were found to be of low risk, 33% at moderate risk, and 27% and at high risk. Forty-nine percent of offenders with peer/adult victims were low risk, 23% at moderate risk, and 29% at high risk. Adolescents with mixed victims were found to be at either pole of the risk continuum; two (29%) were low risk, five (71%) were of high risk, and no youth were deemed to be of moderate risk for reoffense. Juvenile sex offenders in this typology did not significantly differ in their Overall Risk Ratings, $p > .05$. Likewise, there were no differences between child offenders, peer/adult, and mixed offenders on the guided clinical judgments assigned to them, $\chi^2(2) = 1.41$, $p = .84$. However, there were significant differences found between these subgroups and their ERASOR Total Scores, $F(2, 87) = 5.41$, $p = .006$. A one-way analysis of variance found juveniles who had mixed victims (i.e. both child and peer/adult) received the highest ERASOR Total Scores (M = 11.24,

SD = 11.24), child offenders had the second highest scores (M = 17.42, SD = 7.36), and offenders who perpetrated against peer/adult victims had the lowest ERASOR Total Scores (M = 13.29, SD = 7.76).

Finally, examining the type of offender typology did not yield any significant results for any judgments of risk. There were no significant differences between sex offense-only JSOs (M = 17.55, SD = 8.27) and delinquent JSOs (M = 14.92, SD = 8.20) for ERASOR Total Score, $t(90) = .05$, $p = .83$. Differences between these two subgroups were not found for ERASOR Overall Risk Ratings or for the guided clinical judgments, $p > .05$.

Recidivism Rates

Total Sample. Information about criminal reoffense was collected from CORI data requested in August 2010. The mean follow-up time (time from date of discharge from DYS to CORI collection) was 6.3 years (*SD* = 3.02). Fifty-eight JSOs (62%) were charged with at least one new offense (sexual or nonsexual) during the follow-up period. Ten youth (11%) sexually reoffended, whereas 56 JSOs (60%) nonsexually reoffended. The average time to first nonsexual reoffense was 472.4 days, (*SD* = 639.2) while the average time to first sexual reoffense was nearly doubled (*M* = 822.6, *SD* = 932.5). Of the 58 JSOs who recidivated, 3% committed a sex offense only, 83% committed a nonsexual offense only, and 14% committed both a sexual and nonsexual reoffense.

Age Typology. For general recidivism 60 % (n = 24) of younger adolescents and 65% (n = 34) of older adolescents reoffended. Of the ten juveniles who sexually reoffended, 6 (15%) were between 12 to 15 years of age and four (8%) were 16 years of age or older. Fifty-five percent (n = 22) of younger adolescents nonsexually reoffended and 65% (n = 34) of older adolescents committed a nonsexual re-offense. There were no significant differences found

between subgroups in this typology for average time to recidivism. Younger youth (M = 396.96, SD = 446.04) and older adolescents (M = 495.41, SD = 721.99) had comparable lengths of time to commit any re-offense. Likewise, younger adolescents (M = 351.00, SD = 347.62) and older youth (M = 550.97, SD = 776.77) committed a nonsexual reoffense in a similar amount of days on average. The average time to first sexual reoffense for younger adolescents was 984.17 days (SD = 1165.33) and nearly double the average length of time for older adolescents (M = 580.25, SD = 463.56).

Victim Typology. In terms of general recidivism, 52% (n = 25) of child offenders, 71% (n = 25) peer/adult offenders, and 86% (n = 6) of offenders with mixed victims reoffended. Four (8%) child offenders, four (11%) juveniles with peer/adult victims, and two (29%) mixed offenders committed a new sexual offense. Finally, half of child offenders (n = 24), 71% (n = 25) of peer/adult offenders, and 71% (n = 5) of offenders with both types of victims nonsexually reoffended. In line with previous results, no significant discrepancies were found between offenders with different types of victims in their average time to recidivism. The average number of days until committing any reoffense was generally evenly distributed among child offenders (M = 400.16, SD = 492.64), peer/adult offenders (M = 504.6, SD = 758.12), and mixed offenders (M = 526.17, SD = 616.71). For sexual reoffending, adolescents with child victims (M = 911.25, SD = 1403.81) and mixed victims (M = 964.5, SD = 1136.32), on average, took longer than offenders with peer/adult victims (M = 663.0, SD = 386.99) to commit a new sexual offense. Lastly, child offenders (M = 415.29, SD = 498.04), peer/adult offenders (M = 504.6, SD = 758.12), and mixed offenders (M = 655.6, SD = 784.93) took similar amounts of time to nonsexually reoffend.

Offender Typology. Fifty-five percent (n = 22) of sex offense-only JSOs generally recidivated, compared to 69% (n = 36) of delinquent juvenile sex offenders. Four (10%) of juveniles in the sex offense-only group sexually recidivated and six (12%) of delinquent JSOs committed a new sexual offense. For the final type of recidivism, 53% (n = 21) of juveniles in the sex offense-only category nonsexually reoffended, while 67% (n = 35) nonsexually recidivated. Comparable to previous result, the average length of time to reoffense did not significantly differ within the offender typology. For general recidivism, it took sex offense-only JSOs an average of 385.59 days (SD = 542.26) and delinquent JSOs 496.89 days (SD = 666.97) to commit any new reoffense. Sex offense-only adolescents (M = 491.14, SD = 653.97) and juveniles in the delinquent group (M = 461.17, SD = 639.58) had similar average lengths of time to nonsexual reoffending. Unlike general and nonsexual recidivism, the difference of average time to sexual reoffense for these subgroups approached significance, $F(8) = 4.46$, $p = .07$. On average, sex offense-only JSOs committed a new sexual offense within 210.5 days (SD = 192.59), compared to delinquent juvenile sex offenders who took considerable longer to sexually reoffend (M = 1230.67, SD = 1021.48)

Predictive Validity: Receiver Operating Characteristic Analyses

The predictive validity of the ERASOR was examined using ROC analyses. ERASOR Total Scores and Overall Risk Ratings did not significantly predict sexual, nonsexual, or general recidivism better than chance (see Table 1). Only two of the ERASOR domains had significant AUC values. The first domain is the Historical Sexual Assaults domain, which did yield significant AUC values for general recidivism (AUC = .38, $p = .05$) and nonsexual recidivism (AUC = .38, $p = .04$). These AUC values are below .50 indicating that the Historical Sexual Assaults domain does not perform better at predicting recidivism than a random guess.

The second ERASOR domain is the Psychosocial Functioning domain which predicted nonsexual recidivism significantly better than chance (AUC = .65, p = .01). Similarly, this domain was predictive of general (any) recidivism (AUC = .69, p = .003). These results indicate that there is around a 60% chance that a juvenile randomly selected from those who generally and nonsexually recidivated will have a higher score on the Psychosocial Functioning domain than a non-recidivist. None of the other ERASOR risk domains significantly predicted any type of recidivism.

While the Psychosocial Functioning ERASOR domain was able to significantly predict some forms of recidivism, the guided clinical judgments rendered by evaluating forensic psychologists did not significantly predict recidivism better than chance. As displayed in Table 1, the AUC values for general (AUC = .53), sexual (AUC = .49), and nonsexual recidivism (AUC = .52) are similar to those produced by the ERASOR, but the guided clinical judgments do not yield significant results.

ROC analyses were also used to examine the predictive validity of the ERASOR for juvenile sex offender typologies. The first typology of interest is the age of an offender. In younger juvenile sex offenders the Psychosocial Functioning domain (AUC = .74, p = .01) predicted any re-offense. Similarly, the Family/Environmental Functioning domain was predictive of any reoffense (AUC = .73, p = .02) and nonsexual recidivism (AUC = .68, p = .05) in juvenile sex offenders between 12 and 15 years of age. ERASOR total Scores, Overall Risk Ratings, and domains did not predict sexual recidivism for younger juvenile offenders, $p > .05$ (see Table 2). Guided clinical judgments were not significantly predictive for any type of reoffense in younger juvenile sex offenders (see Table 2).

The predictive validity of the ERASOR was also examined for older juvenile offenders. The same AUC values and levels of significance were obtained for general and nonsexual recidivism from the analyses for older juvenile offenders. These analyses revealed significant AUC values for the Historical Sexual Assaults domain (AUC = .27, p = .006) and Treatment domain (AUC = .33, p = .04). For sexual recidivism, the Deviant sexual Interest, Attitudes, and Behaviours domain approached significance (AUC = .22, p = .06) when predicting sexual re-offense. These AUC values are below .50 indicating that these domains do not perform better at predicting nonsexual and any recidivism than chance for older juvenile sex offenders. Again, the guided clinical judgments did not yield significant results in predicting sexual, nonsexual, or any reoffense for older juvenile sex offenders, $p > .05$.

Next, the victim typology was analyzed to see if the predictive ability of the ERASOR differed across juvenile sex offenders with different types of victims. For juvenile sex offenders with child victims, the ERASOR did not predict sexual, nonsexual, or general recidivism (see Table 3). For juveniles who committed sexual crimes against peer/adult victims, identical AUC values were again obtained for nonsexual and any reoffense. The ERASOR did not predict sexual recidivism for this subgroup. The Psychosocial Functioning domain of the ERASOR predicted nonsexual and general recidivism for offenders with peer adult victims (AUC = .91, p = .000). These results indicate that there is around a 91% chance that a juvenile with a peer/adult victim randomly selected from those who generally and nonsexually recidivated, would have a higher score on the Psychosocial Functioning domain than a non-recidivist.

Finally, juvenile sex offenders with mixed types of victims were examined. For this group, the ERASOR did not significantly predict general or nonsexual recidivism, $p > .05$. However, significant AUC values were rendered for juveniles with mixed victims for sexual

reoffending. The Deviant sexual Interest, Attitudes, and Behaviours (AUC = .000, p = .05) and the Historical Sexual Assaults domain (AUC = .000, p = .05) were significant. These peculiar AUC values can be explained by the extremely low number of juvenile sex offenders who had mixed victims (n = 7) and that of those seven offenders, only two sexually reoffended. ROC analyses for the guided clinical judgments did not render significant results for victim typology (see Table 3).

The last typology that was examined using ROC analyses, investigated the predictive validity for the ERASOR for sex offense-only JSOs and delinquent JSOs. The ERASOR was not predictive of sexual, nonsexual, or any reoffense for either subgroup (see Table 4). Similar, to previous results, guided clinical judgments did not significantly predict recidivism for either group in the offender typology (see Table 4).

Time to First Reoffense: Cox Regression

Cox Regression analyses were used to predict time to first reoffense. ERASOR Total Scores and Overall Risk ratings did not significantly predict time to first sexual, nonsexual, or any reoffense for the sample (see Table 5). But, the Psychosocial Functioning ERASOR domain was able to significantly predict time to nonsexual (b = .22, SE = .06, Wald = 12.74, df = 1, p = .000) and general recidivism (b = .24, SE = .06, Wald = 16.76, df = 1, p = .000). These results indicate that as scores on the Psychosocial Functioning domain increase, so does the likelihood that a juvenile sex offender will be rearrested sooner, rather than later, after their release. The increased probability for rearrest for a nonsexual crime is 24% and 27% for any type of re-offense. The Psychosocial Functioning domain did not significantly predict time to first sexual reoffense, b = .19, SE = .12, Wald = 2.74, df = 1, p = .09. Similarly, other ERASOR risk domains did not significantly predict time to recidivism for the sample.

Guided clinical judgments did not significantly predict time to first rearrest for any crime (b = -.69, SE = .19, Wald = .136, df = 1, p = .71), for a nonsexual rearrest (b = -.12, SE = .19, Wald = .38, df = 1, p = .54) or for time to first sexual rearrest (b = -.11, SE = .43, Wald = .07, df = 1, p = .80). These results are consistent with the AUC values rendered from the ROC analyses.

Discussion

The current study investigated the predictive validity of the ERASOR in predicting sexual, nonsexual, and general recidivism for juvenile sex offenders. One cannot accurately assess the predictive validity of a tool without first establishing the reliability of a measure. Results from Intra-class Correlation Coefficient analyses indicated acceptable reliability with the exception of two ERASOR domains: Family/Environmental Functioning and Treatment. It is believed that missing information or unclear descriptions of the factors related to the items on these domains, significantly contributed to the unacceptable reliability of the Family/Environmental Functioning and Treatment ERASOR domains. Overall, the ICCs rendered were lower than originally expected but still indicate acceptable interrater reliability.

It was hypothesized that the ERASOR would accurately predict sexual, nonsexual, and any reoffense for the sample of juvenile sex offenders. ERASOR Total Scores and Overall Risk Ratings did not predict reoffending of any kind. Furthermore, the Historical Sexual Assaults ERASOR domain was found to perform significantly worse than chance when attempting to predict nonsexual and general recidivism. The only ERASOR domain to be able to significantly predict recidivism (nonsexual and any) was the Psychosocial Functioning domain.

It was also hypothesized that when compared to guided clinical judgments made by the evaluating forensic psychologists, the ERASOR would render more statistically significant

results. Results from the ROC analyses seem to indicate that the ERASOR and guided clinical judgments perform similarly when predicting recidivism. Their AUC values indicate that they both perform at or around the level of chance in predicting sexual, nonsexual, and any reoffense. When predicting time to first reoffense using Cox regression, results showed a similar pattern to those yielded from the ROC analyses. The ERASOR and guided clinical judgments did not significantly predict time to first sexual, nonsexual, or any reoffense for the sample. However, the Psychosocial Functioning domain again significantly predicted time to first nonsexual and general reoffense.

ROC analyses were also used to test the hypothesis that expected to find differences across juvenile sex offender typologies in the predictive validity of the ERASOR. ERASOR Total Scores and Overall Risk Ratings were not predictive of sexual, nonsexual, or any recidivism for any of the typologies. The Family/Environmental Functioning domain was predictive of general and nonsexual recidivism for younger juvenile sex offenders only. However, the Psychosocial Functioning domain was highly predictive for a few subgroups in the typologies. This domain significantly predicted nonsexual and any reoffense for younger offenders, juveniles with peer/adult victims, and for delinquent juvenile sex offenders. Again, the guided clinical judgments were not predictive of reoffending for any of the typologies.

The results on the predictive validity of the ERASOR for juvenile sex offender typologies contrast previous findings (e.g. Rajlic & Gretton, 2010). This study failed to find many significant differences between these groups on their ERASOR ratings and for the predictive validity of the ERASOR. This may likely be a result of our smaller sample and future research should continue to investigate the predictive validity of structured professional judgment risk assessment tools for these typologies with a larger sample.

Overall, this study found no support for the validity of the ERASOR in predicting sexual recidivism. However, the Psychosocial Functioning domain consistently yielded significant results for predicting nonsexual and any reoffense in both the total sample and among certain juvenile sex offender typologies. These results are consistent with the findings from Viljoen and colleagues (2009) and add to the growing body of literature that highlights the mixed results found on the predictive validity of the ERASOR (Morton, 2003; Skowron, 2004; Bremer and Dellacecca, 2006; Bourgon, Morton-Bourgon, & Madrigrano, 2005; Edwards et al., 2005; McCoy, 2008; Rajlic & Gretton, 2010). Furthermore, these results support the importance of dynamic risk factors when assessing future risk of violence (Douglas & Skeem, 2005). The Psychosocial ERASOR domain contains dynamic risk factors that consider the offender's current attitudes, relationships, and reactive behavior. This study and others (e.g. Vincent, Chapman, & Cook, 2011) have found evidence for the predictive ability of dynamic risk factors. Future research should continue to examine and explore the role and impact dynamic risk factors may have on predicting future reoffense.

Predicting sexual recidivism has been proven to be a difficult task, and this study supports this notion. While the ERASOR Psychosocial Functioning domain was able to show some predictive validity for nonsexual and general recidivism, the overall predictive ability of the tool appears to be extremely limited. Based on these results and those from previous studies, an argument could be made for assessing juvenile sex offenders with general recidivism measures like the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2006) rather than tools specifically measuring the risk for sexual reoffending. Research on the SAVRY has repeatedly found support for the predictive validity for general recidivism (Borum, Bartel, & Forth, 2003; Dolan & Rennie, 2008; Gammelgard, Koivisto, Eronen, &

Kaltiala-Heino, 2008). Also, the SAVRY has many items that target the same risk factors as the ERASOR. For example, the ERASOR Psychosocial Functioning domain, the only domain to significantly predict general recidivism, contains items that assess a juvenile's antisocial orientation, peer relations (negative and social isolation), issues with anger and aggression, and impulsivity. All of these factors are assessed in the Social/Contextual and Individual/Clinical SAVRY risk factor scales.

The ERASOR does contain risk factor items that are not present on the SAVRY. For example, the ERASOR has a number of items on the Deviant Sexual Interests, Attitudes, and Behaviours domain that are not present in the SAVRY, as this domain is targeted specifically for the risk for sexual reoffense. However, this study did not find results that show this domain to be significantly predictive of sexual recidivism or general recidivism. In other words, the items and factors that make the ERASOR unique from other general recidivism tools do not show strong statistical support in their predictive abilities. While they may be of clinical interest when assessing the risk of a juvenile sex offender, they may not be empirically relevant to the prediction of recidivism. As a result, future research should investigate the differences between the ERASOR and SAVRY in predicting sexual and general recidivism.

There are two main limitations to this study. The first is the use of official criminal records (i.e. CORI records) as the only source of recidivism. This method of measuring recidivism does allow for the possibility that offenses may go undetected. For example, a juvenile sex offender may have gone on to commit a future crime, but if this did not result in an arrest or they were not charged with a new offense, it may not have been captured by official criminal records. It would be ideal, if possible, to collect multiple sources of information (e.g. offender self-report) in order to get the best estimate of recidivism.

The second limitation is the way in which the ERASOR was completed. First, archival case information was the sole source of data to use when rating the ERASOR. It was common for information for these cases to either be incomplete or unclear in the presence or descriptions of certain factors that were essential to the ERASOR. For example, case reports did not consistently mention whether a juvenile sex offender had engaged in or completed sex offender treatment or developed a relapse prevention plan. These factors are critical when completing the ERASOR Treatment domain. Also, the ERASOR was rated by four graduate students with limited clinical experience. Clinical expertise is relevant to structured professional judgment tools and in determining an Overall Risk Rating for the ERASOR. Finally, retrospectively rating cases of juvenile sex offenders fails to capture the potential changes and developments that may have occurred within an individual juvenile. This is why the ERASOR manual suggests evaluating a juvenile sex offender's risk for sexual reoffense around every six months. When possible, future research should use a prospective research design where collateral sources of information (e.g. interviews with the juvenile) are used in addition to case information, and where the juvenile can be re-evaluated at smaller time intervals.

Despite the limitations described above, this study examines many important aspects that significantly contribute to the empirical literature. First, this study added to the body of literature investigating the predictive validity of the ERASOR. The results from this study add to the growing evidence that the ERASOR fails to significantly predict sexual recidivism. Second, this is one of the first studies to examine three of the most commonly discussed juvenile sex offender typologies. Furthermore, this study is opening an avenue for future research to continue to investigate the predictive validity of the ERASOR for these typologies. Lastly, this study is one of the first to examine and compare the predictive validity of clinical judgments alongside a

structured professional judgment tool. Given the findings of this study, it is suggested that future results continue to analyze the predictive validity of the ERASOR for juvenile sex offenders and the typologies, as well as to compare the ERASOR to other structured professional judgment tools assessing general recidivism.

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Table 1: Predictive Validity of the ERASOR Using Area Under the Receiver Operating Characteristic Curve for Total Sample

ERASOR	Sexual Recidivism				Nonsexual Recidivism				General Recidivism			
	AUC	p	SE	95% CI	AUC	p	SE	95% CI	AUC	p	SE	95% CI
Overall Risk Rating	.48	.83	.09	.30-.66	.46	.51	.06	.34-.58	.48	.71	.06	.36-.60
Total Score	.48	.84	.08	.33-.63	.47	.62	.06	.35-.59	.49	.85	.06	.36-.61
Deviant Sexual Interests, Attitudes, Behaviors	.32	.06	.07	.17-.46	.51	.91	.06	.39-.63	.50	.99	.06	.38-.62
Historical Sexual Assaults	.44	.56	.09	.27-.62	.38*	.04	.06	.26-.49	.38*	.05	.06	.26-.50
Psychosocial Functioning	.66	.11	.08	.50-.82	.65*	.01	.06	.54-.76	.69*	.003	.06	.58-.79
Family/Environmental Functioning	.53	.74	.09	.35-.71	.53	.59	.06	.41-.66	.55	.42	.06	.43-.67
Treatment	.46	.66	.09	.27-.65	.44	.36	.06	.33-.56	.46	.48	.06	.34-.58
Guided Clinical Judgment	.49	.90	.10	.28-.69	.52	.81	.08	.39-.65	.52	.81	.07	.39-.66

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; ERASOR = Estimate of Risk of Adolescent Sexual Offense Recidivism (Worling & Curwen, 2001).
*p < .05.

Table 2: Predictive Validity of the ERASOR Using Area Under the Receiver Operating Characteristic Curve for Age Typology

ERASOR	Sexual Recidivism				Nonsexual Recidivism				General Recidivism			
	AUC	p	SE	95% CI	AUC	p	SE	95% CI	AUC	p	SE	95% CI
Younger JSOs (12-15 years)												
Overall Risk Rating	.54	.72	1.2	.30-.78	.57	.45	.09	.39-.75	.61	.23	.09	.43-.79
Total Score	.58	.56	.09	.39-.76	.61	.23	.10	.42-.80	.66	.08	.10	.47-.86
Deviant Sexual Interests, Attitudes, Behaviors	.41	.51	.11	.19-.64	.63	.18	.09	.45-.80	.62	.21	.09	.45-.79
Historical Sexual Assaults	.47	.81	.12	.23-.71	.50	.99	.10	.31-.69	.50	.99	.10	.30-.70
Psychosocial Functioning	.66	.21	.13	.41-.92	.66	.08	.09	.49-.83	.74*	.01	.08	.58-.89
Family/Environmental Functioning	.64	.28	.12	.40-.88	.68*	.05	.09	.51-.85	.73*	.02	.08	.57-.89
Treatment	.52	.87	.12	.28-.76	.59	.32	.09	.42-.77	.62	.19	.09	.45-.80
Guided Clinical Judgments	.46	.75	.13	.21-.71	.53	.77	.10	.34-.72	.55	.62	.10	.35-.75
Older JSOs (16 and older)												
Overall Risk Rating	.37	.12	.08	.21-.53	.39	.47	.11	.17-.61	.37	.12	.08	.21-.53
Total Score	.34	.06	.08	.19-.49	.34	.28	.11	.13-.54	.34	.06	.08	.19-.49
Deviant Sexual Interests, Attitudes, Behaviors	.41	.29	.09	.24-.58	.22	.06	.08	.06-.38	.41	.29	.09	.24-.58
Historical Sexual Assaults	.27	.006	.07	.13-.40	.36	.35	.12	.13-.59	.27*	.006	.07	.13-.40
Psychosocial Functioning	.64	.09	.08	.49-.79	.65	.33	.09	.48-.82	.64	.09	.08	.49-.79
Family/Environmental Functioning	.40	.25	.08	.24-.57	.42	.58	.14	.14-.69	.40	.25	.08	.24-.57
Treatment	.32	.04	.08	.18-.48	.36	.35	.16	.05-.67	.34*	.04	.08	.18-.48
Guided Clinical Judgments	.54	.81	.19	.16-.92	.51	.96	.09	.32-.69	.51	.96	.09	.32-.69

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; ERASOR = Estimate of Risk of Adolescent Sexual Offense Recidivism (Worling & Curwen, 2001); JSOs = juvenile sex offenders.
*p < .05.

Table 3: Predictive Validity of the ERASOR Using Area Under the Receiver Operating Characteristic Curve for Victim Typology

ERASOR	Sexual Recidivism				Nonsexual Recidivism				General Recidivism			
	AUC	p	SE	95% CI	AUC	p	SE	95% CI	AUC	p	SE	95% CI
Child Victims												
Overall Risk Rating	.37	.39	.12	.14-.60	.42	.32	.08	.25-.58	.42	.35	.08	.26-.59
Total Score	.48	.91	.11	.27-.69	.40	.24	.08	.24-.56	.42	.37	.08	.26-.59
Deviant Sexual Interests, Attitudes, Behaviors	.23	.07	.08	.06-.39	.50	.97	.08	.34-.67	.48	.84	.08	.32-.65
Historical Sexual Assaults	.43	.64	.17	.10-.75	.37	.14	.08	.22-.53	.39	.19	.08	.23-.55
Psychosocial Functioning	.64	.36	.17	.31-.97	.45	.55	.09	.28-.62	.48	.83	.09	.32-.65
Family/Environmental Functioning	.49	.97	.14	.22-.77	.48	.85	.08	.32-.65	.49	.93	.09	.33-.66
Treatment	.59	.54	.14	.32-.87	.40	.24	.08	.24-.57	.42	.31	.08	.25-.58
Guided Clinical Judgments	.39	.48	.14	.12-.66	.41	.33	.09	.24-.59	.44	.49	.09	.26-.61
Peer Victims												
Overall Risk Rating	.59	.59	.13	.32-.85	.59	.42	.11	.38-.80	.59	.42	.11	.38-.80
Total Score	.57	.64	.15	.29-.86	.68	.10	.10	.48-.88	.68	.10	.10	.48-.88
Deviant Sexual Interests, Attitudes, Behaviors	.42	.60	.15	.13-.71	.57	.55	.11	.35-.78	.57	.55	.11	.35-.78
Historical Sexual Assaults	.61	.48	.18	.26-.96	.44	.60	.10	.24-.64	.44	.60	.10	.24-.64
Psychosocial Functioning	.63	.39	.10	.44-.83	.91*	.000	.05	.81-1.0	.91*	.000	.05	.81-1.0
Family/Environmental Functioning	.63	.39	.12	.40-.86	.62	.28	.11	.40-.82	.62	.28	.11	.40-.82
Treatment	.38	.45	.16	.07-.69	.53	.81	.11	.31-.74	.53	.81	.11	.31-.74
Guided Clinical Judgments	.63	.41	.17	.30-.97	.67	.17	.12	.44-.89	.67	.17	.12	.44-.89
Mixed Victims												
Overall Risk Rating	.35	.56	.26	.00-.85	.30	.44	.21	.00-.71	.33	.62	.26	.00-.84
Total Score	.10	.12	.13	.00-.36	.60	.70	.22	.17-1.0	.50	1.0	.20	.10-.90
Deviant Sexual Interests, Attitudes, Behaviors	.00*	.05	.00	.00-.00	.70	.44	.20	.30-1.0	.50	1.0	.20	.10-.90
Historical Sexual Assaults	.00*	.05	.00	.00-.00	.55	.85	.29	.00-1.0	.18	.32	.18	.00-.51

Psychosocial Functioning	.40	.70	.24	.00-.86	.50	1.0	.22	.06-.94	.68	.62	.19	.29-1.0
Family/Environmental Functioning	.40	.70	.30	.00-.99	.50	1.0	.27	.00-1.0	.83	.32	.15	.54-1.0
Treatment	.15	.18	.15	.00-.45	.45	.85	.23	.00-.91	.25	.45	.22	.00-.68
Guided Clinical Judgments	.17	.37	.23	.00-.62	1.0	.12	.00	1.0-1.0	.83	.37	.23	.38-1.0

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; ERASOR = Estimate of Risk of Adolescent Sexual Offense Recidivism (Worling & Curwen, 2001); JSOs = juvenile sex offenders.
*p < .05.

Table 4: Predictive Validity of the ERASOR Using Area Under the Receiver Operating Characteristic Curve for Offender Typology

ERASOR	Sexual Recidivism				Nonsexual Recidivism				General Recidivism			
	AUC	p	SE	95% CI	AUC	p	SE	95% CI	AUC	p	SE	95% CI
Sex Offense-Only JSOs												
Overall Risk Rating	.42	.60	.15	.12-.71	.45	.62	.09	.27-.64	.46	.63	.09	.27-.64
Total Score	.46	.79	.13	.20-.72	.46	.63	.09	.27-.64	.48	.82	.10	.29-.67
Deviant Sexual Interests, Attitudes, Behaviors	.35	.33	.14	.08-.62	.54	.67	.09	.36-.72	.51	.88	.09	.33-.70
Historical Sexual Assaults	.57	.67	.13	.32-.82	.40	.26	.09	.22-.57	.41	.36	.09	.23-.60
Psychosocial Functioning	.66	.30	.14	.38-.94	.63	.18	.09	.45-.80	.67	.07	.09	.50-.84
Family/Environmental Functioning	.41	.56	.14	.13-.69	.55	.59	.10	.36-.74	.56	.52	10	.37-.75
Treatment	.25	.11	.11	.03-.47	.38	.21	.09	.21-.56	.39	.25	.09	.22-.57
Guided Clinical Judgments	.54	.82	.21	.14-.94	.46	.72	.10	.27-.66	.49	.95	.10	.30-.69
Delinquent JSOs												
Overall Risk Rating	.53	.81	.11	.31-.75	.48	.78	.08	.31-.64	.51	.93	.08	.34-.67
Total Score	.51	.97	.09	.33-.68	.49	.95	.09	.31-.67	.51	.92	.10	.32-.70
Deviant Sexual Interests, Attitudes, Behaviors	.31	.13	.09	.14-.48	.51	.92	.08	.34-.67	.52	.84	.09	.35-.69
Historical Sexual Assaults	.39	.38	.10	.20-.57	.41	.27	.09	.24-.57	.40	.24	.09	.22-.57
Psychosocial Functioning	.65	.23	.11	.44-.87	.64	.09	.08	.49-.80	.67*	.05	.08	.52-.82
Family/Environmental Functioning	.61	.40	.12	.38-.83	.50	1.0	.08	.34-.66	.52	.78	.08	.36-.69
Treatment	.60	.44	.13	.35-.84	.50	.98	.08	.34-.66	.52	.84	.08	.36-.68
Guided Clinical Judgments	.47	.82	.12	.24-.70	.60	.35	.10	.40-.78	.59	.41	.11	.38-.80

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; ERASOR = Estimate of Risk of Adolescent Sexual Offense Recidivism (Worling & Curwen, 2001); JSOs = juvenile sex offenders.
*p < .05.

Table 5: Predicting Time to First Reoffense using Cox Regression

ERASOR							
	b	SE	Wald	df	p	Exb(b)[a]	95% CI
Sexual Recidivism							
Overall Risk Rating	-.12	.37	.12	1	.73	.88	.43-1.80
Total Score	-.01	.04	.09	1	.75	.99	.92-1.10
Psychosocial Functioning	.19	.12	2.74	1	.09	1.21	.97-1.53
Guided Clinical Judgment	-.12	.43	.07	1	.80	.90	.39-2.10
Nonsexual Recidivism							
Overall Risk Rating	-.13	.16	.64	1	.42	.88	.64-1.20
Total Score	.000	.02	.000	1	.98	1.00	.97-1.00
Psychosocial Functioning	.22	.06	12.74	1	.000*	1.24	1.10-1.40
Guided Clinical Judgment	-.12	.12	.38	1	.54	.89	.61-1.29
General Recidivism							
Overall Risk Rating	-.10	.16	.43	1	.51	.90	.66-1.20
Total Score	.003	.02	.03	1	.85	1.00	.97-1.00
Psychosocial Functioning	.24	.06	16.76	1	.000*	1.27	1.13-1.43
Guided Clinical Judgment	-.07	.19	.14	1	.71	.93	.65-1.35

Note: b = regression coefficient; SE = standard error of b; df = degrees of freedom; CI = confidence interval; ERASOR = Estimate of Risk of Adolescent Sexual Offense Recidivism (Worling & Curwen, 2001).
*p < .05.

Appendix A

ROGER WILLIAMS UNIVERSITY
HUMAN SUBJECT REVIEW BOARD
COVER SHEET FOR NEW INDIVIDUAL RESEARCH PROJECT PROPOSALS

Name of Principle Investigator:	Rebecca Nelson and Timothy Owens
Date of Submission:	September, 2010
Department:	Psychology
School:	Feinstein College of Arts and Sciences
Name of Principle Investigators:	Rebecca Nelson, Timothy Owens, and Frank DiCataldo, Ph.D.
Name of Faculty Advisor: (required for students)	Frank DiCataldo, Ph.D.
Title of Research Project:	Predicting Recidivism Among Juvenile Sex Offenders: The Utility of the ERASOR in Risk
Grant funding support for study:	None

Researcher code of ethics: I declare that I have read the Roger Williams University Statement of Researchers' Ethical Principles for the Protection of Human Subjects of Research and am familiar with my obligations hereunder. Furthermore, I agree to abide by that Statement of Ethical Principles adopted by Roger Williams University as part of the Human Subject Review Board policy.

_____*Rebecca Nelson*_____

Investigator's signature

Review status sought by principle investigator. Circle one using the guidelines published by the HSRB. Note that the HSRB may change the status of the review.

EXEMPT **EXPEDITED** **FULL**

Signature of Department Chair (where applicable)_____

Signature of Dean_____

For HSRB Board use only:

Committee decision regarding review statues:

EXEMPT **EXPEDITED** **FULL**

_____Approved
_____Resubmit

_____

Signature of HSRB Chairperson Date

Research Protocol Form for New Individual Research Project

Project Description: This study will examine the predictive utility of the ERASOR in risk assessments for juvenile sex offenders. There is a growing concern over the prevalence of juveniles committing sexual offenses, which has lead to an increased demand for evaluations assessing the level of risk for reoffending an adolescent poses. Actuarial tools, such as the ERASOR, are relied upon to assist clinicians in risk assessment evaluations. Using archival files containing case information and criminal records, it is expected to find that the ERASOR will accurately predict recidivism among juvenile sex offenders.

Participants: One hundred male juvenile sex offenders between 12 to 18 years of age will be the participants in this study. Participants will be assembled by selecting cases of juvenile offenders with a prior sexual offense who were evaluated by licensed forensic psychologists.

Procedures and Methodology: Case files will be accessed and used to score the ERASOR after permission is gained. Raters will be four graduate students who will receive one day of training on the administration and scoring of the ERASOR. After training, raters will complete five practice cases, using actual case files, which will be reviewed and discussed. Cases will then be randomly assigned and independently completed to compile the 100 ratings for the sample of juvenile sex offenders. Case files will have the names of the adolescents redacted in order to ensure confidentiality. Raters will also complete a standardized ERASOR scoring sheet with a cover page to ensure the privacy of information when recording ratings of risk. ERASOR ratings will be completed before collecting any other data and without the knowledge of a youth's recidivism. Thirty cases will be selected to assess the interrater reliability of the ERASOR. After all cases have ERASOR ratings, CORI records will be used to identify which adolescents criminally recidivated and the type of reoffense committed.

Proposed Analyses: Various statistical analyses will be conducted to analyze scores on the ERASOR and recidivism. The area under the receiver operating characteristic curve will be used to examine the predictive accuracy of the ERASOR for sexual and nonsexual reoffending. In addition, Cox regression analyses will be conducted to examine the ability of the ERASOR to predict first reoffense.

Consent Procedures and Data Confidentiality and Anonymity: This study will follow the guidelines set by the American Psychological Association. The participants will be fully

informed of the procedures and told that they may discontinue their participation at any time without prejudice or penalty. As stated previously, potential participants will be given the informed consent sheet, which outlines the basic purpose of the study and their requirements, should they decide to participate. In order to insure anonymity, absolutely NO NAMES or CODE NUMBERS will appear on any booklet. Additionally, informed consent sheets will be collected separately from the questionnaires. Hence, participants will be insured of full anonymity. Additionally, the data will be collected in such a way that no one, other than the researchers, will have access to the responses of the participants of the study. This will insure full confidentiality. Consistent with the guidelines of the American Psychological Association, data will be stored in the office of the faculty member at least five years after the date of a potential publication.

Risks/Discomfort and Benefits to the Participants: It is believed that participants should experience no risks or discomforts. A potential benefit is that, based on the completion of the questionnaires, participants may come to have a better understanding of psychological research.

Appendix B
Forensic Evaluation Data Sheet
(Bedford Policy Institute)

I. Demographic Information

Name:
Age:
DOB:
Date of Commitment:
Mid#:
Area:
Committing Court:
DYS Program:
Dates of Interview:
Name of Evaluator:
Race/Ethnicity:
Gender:

Legal Status: Commit to 18 Youthful Offender Extension of Commit Detained

Type of Evaluation: Class Extension 68(a) Assess Testing
Number of Commitments:
Referral Number:

II. Delinquency History Information

List of Prior Delinquency Adjudication and Legal Findings:

Name of the Offense	**Date of Arraignment**	**Legal Outcome and Date**

Commitment offense(s):

Name of the Offense	**Date of Arraignment**

III. Mental Health History and Data

Prior psychiatric hospitalization: Yes or No

Number of psychiatric hospitalizations: _____

Current Medication: Yes or No

Name of *current* medications:

Name of *prior* medication:

History of suicide attempts: Yes or No

Number of suicide attempts: _____

Methods Used and #: Overdose (#) Cutting (#) Hanging (#) Other: _____

History of suicide threats: (only if there is no hx of attempts): Yes or No

Self Injurious Behavior: Yes or No
Scratching Inserting Foreign Objects Ingesting Foreign Objects Head Banging
Burning Other:

Prior Diagnoses:

IV. Clinical Data/ Risk Factors

Positive Parental Support or Nurturance: Yes No Not Clear

Parental Control and Accountability for Juvenile: Yes No Not Clear

Hx of attachment problems early childhood: Yes No Not Clear

History of abuse: Yes or No

Type of abuse: Physical Sexual Emotional Neglect

Prior History of DSS Services: Yes or No

Prior History of CHINS: Yes or No

Academic Achievement: High Average Poor No data

History of Truancy: Yes or No

Fighting in School: Yes or No

Disruptive Behavior at School: Yes or No

Weapons at School: Yes or No

Retained a Grade: Yes or No **If yes, how many:_____**

IQ Level: Superior or Above Average Below Average Borderline MR Unknown

Hx of special education services: Yes or No

Behavior Problems: _____
Learning Disability: _____
Both: _____

Substance abuse problems: Yes or No

Type of Substances Abused:

Negative peer relationships: Yes or No

Gang Affiliation: Yes or No

Pro-social or positive interests or hobbies: Yes or No or Unknown

What are they? _____

Admits to Commitment Offense: Yes Partial No

Blames the Victim: Yes Partial No

Blames external factors: Yes Partial No

Minimizes harm: Yes Partial No

Mode of violence: Reactive Proactive Mixed Unknown N/A

V. Sexual Offense (If commitment offense is not a sexual offense, skip to next section)

Type of victim: Child (5 yrs. Younger) Peer aged Adult Disabled Mixed

Age of victim: _____

Gender of victim: _____

Relationship to victim: stranger acquaintance girlfriend bio sib step/foster sib

Location: residence outdoors motor vehicle other:_____

Time: _____

Type of offense: Solitary or Group

Number of co-defendants: _____

History of prior sexual offenses: Yes or No

Number of prior sexual offenses: _____

History of violent delinquency: Yes or No

History of non-violent delinquency: Yes or No

Method of victim compliance: Grooming Threat Force Violence Other:

Type of sexual assault: Touching Forced oral sex Vaginal Intercourse Anal intercourse

Weapon present: Yes or No

Type of weapon:_____

Violence Used: Yes or No

Level of victim injury: Mild Moderate Severe

Deviant arousal pattern: Pedophilic Violent other:_____ unknown

Substance abuse at time of offense: Yes or No

► ***Violent Offense (if commitment offense is a sexual offense, do not***

complete this section)

Type of offense: Solitary or Group

Number of co-defendants: _____

Weapon present: Yes or No

Type of weapon: Handgun Shotgun or rifle Knife Blunt object other: _____

Victim injury: Yes or No

Level of victim injury: Mild Moderate Severe

Verbal threat: Yes or No

Substance abuse at time of offense: Yes or No

► ***Victim Characteristics***

Number of victims: _____

Gender:

Age:

Race:

Relationship: Friend Girl/boyfriend Family member Stranger Acquaintance Rival

Location: Residence School Outdoors MBTA Public building

Time: _____

VI. Conclusions

1. Diagnostic Impressions

Diagnoses, including substance abuse:

Recommendation of DMH services: Yes or No

Type of service recommended: Inpatient IRTP Residential Case management

2. ***Risk Assessment***

Risk factors identified: (Highlight all that apply)

1. Early childhood abuse
2. Witnessed domestic violence
3. Anti-social role modeling
4. Poor attachment history
5. Parental mental illness
6. Parental substance abuse
7. Early developmental/emot. problems
8. Early pattern of undercontrolled behv.
9. Early aggression/destructiveness
10. Poor early peer socialization
11. Poor school functioning
12. Substance abuse
13. Negative peer group
14. Poor parental control
15. Poor parental support/nurturance
16. Weapon possession
17. Violence history
18. Impulsivity/low self-control
19. No pro-social interests
20. Grandiose/self-inflated:
21. Externalizes blame
22. Justifies behavior
23. Minimizes harm
24. Low empathy
25. Thrill seeking
26. Dominance/power needs
27. Depression
28. High harm vigilance
29. Psychotic paranoia
30. Perceives malevolent threat or challenge
31. Violence as means to an end
32. Anger
33. Retaliation
34. Other:_____

Risk level: High Moderate Low

3. Placement and Treatment Needs

a. Placement recommendation: Secure Residential Day reporting with clinical services DMH

b. Treatment needs: (highlight all that apply)

1. Anger control
2. Substance abuse
3. Mental health
4. Sex offender (cog)
5. Sex offender (recondition)
6. Social skill
7. Violence relapse prevention
8. Family therapy
9. Dynamic psychotherapy for trauma/loss
10. Behavioral management
11. Other:_____

Appendix C

Estimate of Risk for Adolescent Sexual Offense Recidivism

High Risk Factors for Sexual Reoffense	**Present**	**Partially/Possibly Present**	**Not Present**	**Unknown**
Sexual Interests, Attitudes, and Behaviours				
1. Deviant sexual interests (younger children, violence, or both)				
2. Obsessive sexual interests/Preoccupation with sexual thoughts				
3. Attitudes supportive of sexual offending				
4. Unwillingness to alter deviant sexual interests/attitudes				
Historical Sexual Assaults				
5. Ever sexually assaulted 2 or more victims				
6. Ever sexually assaulted same victim 2 or more times				
7. Prior adult sanctions for sexual assault(s)				
8. Threats of, or use of, violence/weapons during sexual offense				
9. Ever sexually assaulted a child				
10. Ever sexually assaulted a stranger				
11. Indiscriminate choice of victims				
12. Ever sexually assaulted a male victim (*male offenders only*)				
13. Diverse sexual-assault behaviors				
Psychosocial Functioning				
14. Antisocial interpersonal orientation				
15. Lack of intimate peer relationships/Social isolation				
16. Negative peer associations and influences				
17. Interpersonal aggression				
18. Recent escalation in anger or negative affect				
19. Poor self-regulation of affect and behavior (Impulsivity)				
Family/Environmental Factors				
20. High-stress family environment				
21. Problematic parent-offender relationships/Parental rejection				
22. Parent(s) not supporting sexual-offense-specific assessment/treatment				
23. Environment supporting opportunities to reoffend sexually				
Treatment				
24. No development or practice of realistic prevention plans/strategies				
25. Incomplete sexual-offense-specific treatment				
Other Factor				
Overall Risk Rating □ Low □ Moderate □ High				