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The Utility of the SAVRY in Predicting Recidivism Among Juvenile Sex Offenders

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Abstract

The identification of high-risk juvenile sex offenders has become one of the most controversial tasks of forensic mental health professionals today. Courts rely on clinician assessments when attempting to differentiate between youth who are low risk versus youth that are high risk to recidivate. The present study will examine the effectiveness of the Structured Assessment of Violence Risk in Youth (SAVRY) in predicting sexual and nonsexual recidivism in a sample of juvenile sex offenders. Participants are 100 male juvenile sex offenders who were evaluated by a forensic evaluation service regarding their risk to reoffend. Archival case information, which contains forensic reports, will be used to score the SAVRY. The Area Under the Receiver Operating Characteristic Curve (ROC) and Cox regression will be used to analyze the predictive validity of SAVRY risk ratings. Results showed that the SAVRY Total Score and overall SAVRY Risk Rating, along with several of the subscales, significantly predicted general and nonsexual recidivism in this sample. Significance was not found for sexual recidivism, except for scores on the SAVRY historical risk factors subscale. The results point to the possibility that juvenile sex offenders should be considered as a smaller subgroup of a larger delinquent population, rather than as their own unique population.

Keywords: SAVRY; juvenile; sexual offending; risk assessment; recidivism

The Utility of the SAVRY in Predicting Recidivism Rates Among Juvenile Sex Offenders

The issue of juvenile sex offenders has quickly become a central focus in the forensic mental health practice and the juvenile justice system. Gill & Raphel (2009) report that the Federal Bureau of Investigation *Uniform Crime Report* for 2002 showed that 16.7% of all forcible rapes and 20.6% of other sexual offenses were perpetrated by youth 18 years and younger. Also, according to best available estimates 30%-50% of child molestations are committed by adolescent males (Barbaree & Marshall, 2006; Calley, 2007).

It has been shown across research that juvenile sex offender typologies varies greatly across factors such as demographics, family dynamics, type of victim, criminal history, etc. Due to these differences, juvenile sex offenders as a group have been characterized as being a heterogeneous (DiCataldo, 2009). Due to the heterogeneity of this group of offenders, researchers have attempted to develop a set of typologies for juvenile sex offenders so that specific offenders can be placed in more homogeneous, controllable groups. The objective of this research is to separate groupings of juvenile sex offenders based on significant differences, which to date, are believed to be masked by the considerable heterogeneity of juvenile sex offenders. It is hoped that these differences will be found and that this will help to improve the understanding of risk factors, treatment needs, and risk of recidivism in juvenile sex offenders (DiCataldo, 2009).

A number of researchers have proposed categories for juvenile sex offenders, and many of these categorizations share common characteristics that can guide the understanding of the possible paths that may lead to sexual offending. Witt, Bosley, and Hiscox (2002), discuss one

of the most current categorizations of juvenile sex offenders, which are broken down into four groups. The first of these groups is the antisocial/impulsive juvenile sex offender. These offenders share many characteristics such as: poor academic performance, aggression, coercive acts towards others, family disruption, and association with anti-social peers. In this group, sex offenses are basically one more way of behaving both coercively and exploitatively. This group of offenders may offend because of a generally exploitive, coercive, and impulsive orientation towards others. The second group is the unusual/isolated juvenile sex offender. Offenders who fall into this category are characterized as strange, interpersonally distant and isolated, and confused. These offenders tend to have difficulty forming healthy, age-appropriate intimate relationships, and they may offend because of severe interpersonal and cognitive deficits. These categories of offenders, along with the antisocial/impulsive category of offender are at a higher risk of recidivism. The third group of juvenile sex offenders is the over-controlled/reserved offender. This category of offender tends to show lower levels of psychopathology than the preceding groups. They do not share the delinquent inclinations of the antisocial group or the bizarre behaviors and ideations of the isolated group. They endorse pro-social attitudes, but tend to avoid expressions of emotions. They may offend as a result of shyness with similarly aged peers. The fourth and final category is the confident/aggressive juvenile sex offender. This group also shows lower levels of psychopathology than the first two groups. They are characterized as friendly, confident, and outgoing, although they tend to also be somewhat narcissistic. Their offenses tend to result from a self-centered orientation which lacks in empathy.

Further, there are three specific typologies which have been repeatedly seen in research on juvenile sex offenders: type of victim, age of the offender, and type of offender. Type of victim has been established in the literature by the type of victim found in the offender's sexual offense, and is usually divided into a child molester group (child victim) and peer/adult offenders (rapists) (DiCataldo, 2009; Barbaree & Marshall, 2006). The empirical research has supported this typology in adult sex offenders, in which child molesters have been shown to differ greatly in history of sexual abuse, criminal history, and recidivism rates. The success in separating adult offenders according to type of victim has, in turn, lead to the same separation being applied to juvenile sex offenders. Further, Hunter et al. (2003) found that these two subgroups also differed greatly on several psychological aspects as well. The research showed that child molesters show greater psychological shortfalls, which can be seen in their relative levels of social immaturity, and also in their problems with controlling emotional issues. This research also showed that child molesters are likely less aggressive in their sexual offenses, is less likely to be under the influence of alcohol at the time of offense, and was less likely to use a weapon. Further, while little research has looked at the mixed victim subgroup of juvenile sex offenders, this is a very significant subgroup to examine due to the fact that this subgroup does in fact regularly appear in juvenile sex offender samples. Therefore, future research should include an examination of the mixed victim subgroup in conjunction with the child victim subgroup and peer/adult subgroup.

The age of the offender is, perhaps the most basic, and also the most common typology which is applied to juvenile sex offenders. In this typology, juvenile offenders are generally split into two groups; preadolescent and adolescent. In general, older juveniles, ages 16 and up are

placed in the adolescent group while younger juveniles, ages 12-15, are placed in the preadolescent group (Viljoen et al., 2009; Elkovitch et al., 2008; DiCataldo, 2009). Research into this typology has found that the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2003) were less predictive of reoffending for the preadolescent group than for the adolescent age group. Overall, the research has found that the number of false positives were greater in the preadolescent group (Elkovitch, Viljoen, Scalora, and Ullman, 2008).

Dividing juvenile sex offenders by the type of offender is based on a theoretical framework based on sexual aggression (Butler & Seto, 2002; Rajlic & Gretton, 2010). This framework was based on the view that developmental differences exist between juvenile offenders who appear to have an overall antisocial/delinquent pattern of offending versus juvenile offenders who are focused only on sexual offending (Rajlic & Gretton, 2010; Becker & Kaplan, 1997). Butler & Seto (2002) found that juvenile offenders who focused solely on sexual offending had fewer overall childhood conduct problems, more prosocial attitudes, and a lower overall recidivism rate. The antisocial/delinquent subgroup of offenders appeared to show a greater level of antisocial activities, and was also at a greater risk to recidivate. Van Wijk et al. (2007) found that offenders in the antisocial/delinquent subgroup began a criminal activity at an earlier age, and that the criminality went on for a longer period of time. Rajlic & Gretton (2010) examined the predictive validity of the type of offender typology on the predictive validity of the Juvenile Sex Offender Assessment Protocol-II (JSOAP-II; Prentky & Righthand, 2003) and the Estimate of Risk of Adolescent Sexual Offense Recidivism (ERASOR; Worling & Curwen, 2001). This study found the predictive validity of the risk assessment measures to vary

across the different subgroups. The antisocial/delinquent group had significantly higher total scores and risk domain scores on both the J-SOAP-II and the ERASOR, while both the J-SOAP-II and ERASOR predicted sexual recidivism in the sex offense only subgroup, but not in the antisocial/delinquent subgroup.

The literature on non-sexual recidivism rates for juvenile sex offenders appears to be somewhat consistent. Kahn & Chambers (1991) found that more than 50% of the juvenile sex offenders studied had a previous nonsexual criminal history. Further, nearly 50% of the juvenile sex offenders studied reoffended with a non-sexual offense during a 20 month follow up period. Caldwell (2002) reviewed 12 studies and identified a nonsexual recidivism rate of 41% among juvenile sex offenders. Further, a study by Gerardin & Thibaut (2004), found the rate of non-sexual reoffending for juveniles to range from 16%-54%.

While the literature appears to be somewhat consistent for juvenile sex offense rates as a whole, the literature varies considerably regarding the rate of juvenile sex offender recidivism. Some studies have reported low sexual re-offense rates, while other studies have reported relatively high sexual recidivism rates. According to Gerardin & Thibaut (2004), there was one specialized treatment program for juvenile sex offenders in 1975. This number rose to over 600 by 1994. They went on to state that for the offenders referred for treatment, the rate of sexual recidivism was 8%-14%. Further, Caldwell (2002) reviewed 12 studies and identified a sexual recidivism rate of 11%. A study by Kahn & Chambers (1991) used a 20 month follow up period and found that 7.5% recidivism rate for juvenile offenders. Prentky et al. (2010) found sexual recidivism rates for adolescents to range between 14%-16%. Caldwell (2007) found that

in a sample of 249 juvenile sex offenders and 1,780 nonsexual offenders, the prevalence rates for sexual offenders to sexually recidivate was 6.8%, compared to 5.7% for nonsexual offenders, a non-significant difference. Further, Epperson et al. (2006), found a sexual recidivism rate of 13.2% in a sample of 636 juveniles prior to their 18th birthday, with a jump in recidivism rate to 19.8% as an adult over the age of 18. Worling and Langstrom (2006) analyzed twenty two published follow up studies of juveniles who committed a sexual offense and found the recidivism rate to be 15% when measuring those juveniles who had been charged with a new offense.

Contrastingly, a study by Hagan, Anderson, Caldwell, & Kemper (2010) found a sexual recidivism rate of 42% among juvenile sex offenders with a 5 year at risk period. Rubenstein, Yeager, Goodstein, and Lewis (1993) found a recidivism rate of 37% in a small sample of sexually assaultive juvenile males after an eight year post release follow up.

These discrepant findings appear to be a function of sampling and methodological differences which include: characteristics of the adolescents being investigated, the type and impact of interventions, the method used to measure recidivism, and the length of the follow-up period. In general, the population of juvenile sex offenders is made up of a heterogeneous population. This group is based on a mix of deviant and non-deviant members; low and high risk offenders, abnormal and repetitive offenders, all of which are roped into one category, juvenile sex offenders. These differences in the juvenile sex offender population will inherently reduce the overall sexual recidivism rate. Further, the time of post-release differs greatly from one study to the next, which could ultimately have a major effect on the rate of recidivism.

Studies that have a three year follow up period will logically have lower recidivism rates than a study with a ten year follow up period. Finally, whether a study uses arrest, conviction, self-report, or the report of a third party informer will also have a dramatic effect on the rate of sexual recidivism (DiCataldo, 2009). However, despite these differences, the literature seems to indicate that there is, in fact, a population of adolescents who may be at higher risk for re-offense (Elkovitch et al., 2008).

The identification of these high-risk youth has become one of the most challenging and controversial tasks for forensic mental health professionals. Courts rely on clinician assessments when attempting to differentiate between youth who are low risk versus youth that are high risk to recidivate. When evaluating the potential for recidivism, risk estimates can inform the courts regarding prosecution, detention placements, level of security necessary, and when the juvenile offender is ready to be released back into the community. Juveniles' risk for future violence is also considered in court decisions regarding the transfer of youth to adult courts (*Kent v. United States*, 1966), civil commitment and finally, juvenile sex offenders believed to be at high risk for future sexual reoffense may be placed on sex offender registries in some states (Elkovitch et al., 2008).

Since the enactment of "Megan's Laws" in the mid 1990's, every state has enacted legislation requiring certain sex offenders to register with law enforcement and to have their personal information available to the community, often for life. Prior estimates reported that slightly over half of all states require this registration and community notification for juvenile sex offenders as well (Garfinkle, 2003; Trivits & Reppucci, 2002). However, with the advent of

the Adam Walsh Act of 2006 (Yung, 2010), all states are required to register high risk juvenile sexual offenders in order to receive federal grants for crime prevention. These laws are extremely controversial in terms of juvenile sex offenders. The major question is whether or not juvenile offenders should be put on sexual offender registries or be eligible for sexually violent predator commitment. According to Frierson et al (2007), supporters for the inclusion of juveniles argue that the main goal of protecting future victims is most important and that these laws act as a deterrent to future offending and provide an investigation tool for law enforcement. These laws also allow for monitoring by authorities and allow for the employment of security checks for day cares, schools, and other children oriented jobs.

Opponents of these laws claim that the registration of a juvenile can create a significant stigma, due to the fact that the juvenile is now labeled as sexually deviant (DiCataldo, 2009). Thus, upon successful completion of treatment, the juvenile may have significant difficulty reintegrating into the educational system, and other important settings. This is an important problem because one of the main goals of most successful treatment programs is the development of appropriate peer relationships, opportunities for normalization through education and employment. The stigma created by registry would greatly disrupt this normalization process.

The assessment of risk of recidivism is based on the identification of empirically supported risk factors. Risk factors fall into two specific categories: static and dynamic. Static risk factors are historical factors that are not subject to change. They include: number of prior sexual offenses, characteristics of prior sexual offenses, prior victim selection, prior nonsexual

antisocial behavior, sexual history, family history, and past psychiatric history. Dynamic risk factors are subject to change over time, either slowly (stable dynamic factors) or rapidly (acute dynamic factors). These dynamic risk factors include: motivation, acceptance of responsibility, level of victim empathy, quality of peer relationships, level of sexual self-regulation, level of general self-regulation, current substance abuse, and current symptoms of mental illness (Witt, Bosley, & Hiscox, 2002; Worling & Langstrom,2003; Barbaree & Marshall, 2006).

Static and dynamic risk factors can be further broken down into four separate categories. According to a study by Worling and Langstrom (2003), supported risk factors are labeled "supported" if the available empirical evidence was not contradictory and if research focused specifically on adolescents who had offended sexually. "Supported" risk factors include: deviant sexual interests, prior criminal sanction for sexual assaults, past sexual offenses against two or more victims, selection of a stranger victim, lack of intimate peer relationships/social isolation, and incomplete offense-specific treatment. "Promising" risk factors for reoffending are factors that have been noted both in published clinical checklists for adolescents and by several researchers working with adults who offend sexually. It is important for evaluators to examine these factors, but to keep in mind that empirical support for these factors is currently limited. "Promising" risk factors include: problematic parent-adolescent relationships/parental rejection and attitudes supportive of sexual offending. "Possible" risk factors are viewed as likely related to sexual recidivism; however, they are highly exploratory given the lack of empirical support and expert clinical opinion. When using these risk factors in assessment, caution should be taken. "Possible" risk factors include: high-stress family environment, obsessive sexual interests/sexual preoccupation, impulsivity, selection of a male

victim, negative peer associations and influences, environment supporting reoffending, past sexual assault against a child, threats or use of excessive violence or weapons during sexual offense, indiscriminate choice of victims, unwillingness to alter deviant sexual interests/attitudes, interpersonal aggression, antisocial interpersonal orientation, and recent escalation of anger or negative affect. The final category of risk factors is "unlikely" risk factors for sexual reoffending. These factors should not be used when putting together risk estimates for adolescents, due to the fact, that currently, empirical evidence has not tied them to sexual reoffending. Unlikely risk factors include: denial of the sexual offense, lack of victim empathy, history of nonsexual crimes, penetrative sexual assaults, and offending adolescent's own history of child sexual abuse.

While many risk factors of recidivism have been clearly identified in the research, the question remains as to how a clinician should go about determining which risk factors a specific juvenile sex offender may or may not have? There are a number of approach's which a clinician may follow for risk assessment in juvenile sex offenders.

The first approach to risk assessment is based solely on unstructured clinical judgment. In this approach, the clinician determines what questions to ask and what constructs to measure. It allows for flexible administration, and it could potentially involve a number of data sources. In this approach, the evaluator uses a process which involves no constraints or guidelines for the evaluator to follow. Evaluator decisions are generally made based on clinical discretion and vary according to the qualifications and experience of the evaluator. This approach relies heavily on a combination of theory and clinical intuition. The data collection is

often unsystematic and can vary from case to case and from clinician to clinician. There is virtually no empirical support for the predictive validity of this approach, and its use is ethically questionable (Douglas & Kropp, 2002; Witt, Bosley, Hiscox, 2002).

The second approach to risk assessment is based on empirically guided clinical judgment. This approach focuses on a consistent list of risk factors that have been empirically supported associated with sexual recidivism. Its administration is systematic and consistent due to the fact that it is based on a consistent list of risk factors. It is often left to the individual clinician to determine what factors to assess, how to assess them, and how to combine them to make a clinical judgment about risk of sexual reoffense. Again, there is no empirical data on this approach's reliability and validity (Witt, Bosley, Hiscox, 2002).

The third approach to risk assessment is the actuarial approach. The goal of the actuarial method is to predict violence in a relative sense, by comparing a given individual to a norm-based group, and also in an absolute sense, by providing a precise estimate of the likelihood of future violence. This approach follows a consistent list of risk factors which are empirically supported. In general, it follows a specific mathematical algorithm, for determining a risk score. It is limited to risk factors found to be related to recidivism in standardization studies. An example of an actuarial tool for adults is the Static-99 (Douglas & Kropp, 2002; Witt, Bosley, Hiscox, 2002).

A fourth approach to risk assessment, the one that as garnered the most recent research attention and focus, is the structured professional judgment. In this approach, the evaluator conducts the assessment based on specific guidelines which reflect the current theoretical, clinical, and empirical knowledge about sexual recidivism risk. These guidelines

provide the minimum set of risk factors which should be taken into consideration in each case. These guidelines also include recommendations for gathering information (the use of multiple sources), for communicating opinions, and for implementing prevention strategies (Douglas & Kropp, 2002). There are several risk assessment tools which are used in the structured professional judgment approach including: the Youth Level of Service Inventory/Case Management Inventory (YLS/CMI) (Hoge & Andrews, 1996) and the SAVRY (Borum, Bartel, & Forth, 2003).

In general, juvenile sex offender risk assessments have moved from unstructured, non-empirical to the more structured and empirically-based approach to risk assessment. This shift has trended towards the use of the structured professional judgment when evaluating juvenile sex offenders, such as the J-SOAP-II (Prentky & Righthand, 2003) and the ERASOR (Worling & Curwen, 2001). In this approach, the evaluator conducts a systematic risk assessment by referring to a checklist of risk factors, which are based on existing empirical literature. The objective of this approach is to combine the best aspects of both clinical and actuarial approaches with an overall goal of improving the final clinical judgment. Further, it is believed that the guided clinical approach is best suited for risk assessment in juveniles because it is based on empirical based literature, allows for appropriate consideration of developmental factors, and it emphasizes both the dynamic and static nature of risk. Actuarial models are not as well suited for a juvenile population because these types of models tend to focus more on static and historical risk factors, and place less emphasis on the developmental aspects of a juvenile population (Borum, Bartel, & Forth, 2003).

Overall, accurately assessing the level of risk of recidivism in juvenile sex offenders has proven to be challenging to date. The main hurdle is that adolescence is a period in life which is characterized by a period of immense developmental growth and change in the various aspects of the juvenile's life. All of these developmental changes are part of the maturation process, which could lead to the end of the juvenile's deviant pattern (Grisso, 1998; Witt, Bosley, Hiscox, 2002; Elkovitch et al., 2008). Another limiting problem is the relatively low base-rate of sexual reoffense among juvenile sex offenders which has limited the ability of test authors to establish the predictive validity of their measures (DiCataldo, 2009).

Finally, the lack of properly validated risk assessment measures has been another limiting factor in the assessment of risk for juvenile sex offenders. Risk assessment measures for adult sex offenders, such as the Static-99 have been thoroughly research and validated. Historically, the same cannot be said for juvenile risk assessment tools (Witt, Bosley, Hiscox, 2002; Worling & Langstrom, 2003). However, in recent years, research has been used to determine the relevant risk factors for juvenile offenders. Further, research has been dedicated to taking these risk factors to develop risk assessment tools (Worling & Langstrom, 2003). This research has led to the development and relative acceptance of several juvenile risk assessment tools (e.g. The Estimate of Risk of Adolescent Sexual Offender Recidivism and the Juvenile Sex Offender Assessment Protocol-II). A recently developed and validated juvenile risk assessment tool is the Structured Assessment of Violence Risk in Youth (SAVRY) which was developed by Borum, Bartel, and Forth (2003) to assist clinicians in their assessment of the risk of violence reoffense in a juvenile offender. While not developed specifically for use with juvenile sex

offenders, it consists of a range of risk factors related to criminal recidivism and, therefore, it may be specifically predictive of sexual reoffense as well.

The structure of the SAVRY is modeled after existing guided clinical protocols for adult violence risk such as the Historical, Clinical, Risk Management-20 (HCR-20) (Webster, Douglas, Eaves, & Hart, 1997), but the content is focused specifically on risk in juveniles and includes developmentally-relevant factors specific to adolescents. The goal in developing the SAVRY was to develop an assessment guide that was: systematic, empirically grounded, developmentally informed, treatment oriented, flexible, and practical (Borum, Bartel, & Forth, 2003).

The SAVRY is made up of 24 risk items which fall into three domains: historical risk factors (e.g. history of violence), social/contextual risk factors (e.g. peer delinquency), and individual/clinical risk factors (e.g. anger management problems) and it is designed to be used in juveniles between the ages of 12 to 18. Each factor was drawn from existing research on juvenile development and on violence and aggression in youth. The SAVRY also has the unique feature of assessing protective factors as well. It is believed that although two juveniles may have the same risk factors, the juvenile who has certain protective factors may be significantly less likely to reoffend. There are six protective factors: prosocial involvement, strong social support, strong attachments and bonds, strong commitment to school, and resilient personality traits. Each risk item has a three-level rating structure with specific rating guidelines (Low/Moderate/High), and each protective factor has a two level rating structure (Present/Absent) (Borum, Bartel, & Forth, 2003; Witt, Bosley, Hiscox, 2002).

According to Borum, Bartel, & Forth (2003), the principal standard for item selection was the size and robustness of the empirical relationship between the factor and violence identified through prior reviews, meta-analyses, and original studies with juvenile populations. Research on protective factors for violence in juveniles was much less extensive, so the authors chose those with the greatest promise for inclusion. The professional manual provides the rationale for the inclusion of each item. The professional manual also provides operationally defined rating criteria for each item to increase reliability (Borum, Bartel, & Forth, 2002).

It is important to note that the SAVRY does not have a specific formula in estimating risk; rather, it relies on the judgment of the evaluator in determining the overall level of risk. An overall rating of Low, Moderate, or High is given by the evaluator to convey the level of risk that they estimate the juvenile offender poses. It is expected that there will be an overall relationship between the scores of each individual item and the overall rating of risk (Borum, Bartel, & Forth, 2002).

Research on the SAVRY has found that the measure has moderate reliability. Borum, Forth, & Bartel (2003) found an internal consistency of the SAVRY Risk Total to be .82 for the offenders and .84 for the community sample. In one study using trained student raters, the single-rater intraclass correlation coefficient (ICC) was .81 for the SAVRY total scores and .77 for the summary risk ratings (Catchpole & Gretton, 2003). Viljoen et al. (2008), found an ICC of .91 for SAVRY total scores. Finally, Meyers & Schmidt (2008) found high degree of reliability with an ICC of .96 for the Historical domain, .89 for the Social/Contextual domain, .92 for the Individual domain, .97 for the SAVRY total score, and .95 for the summary risk rating.

Research into the predictive validity of the SAVRY has been somewhat mixed. Catchpole & Gretton (2003) found that juveniles in their sample who were assigned a score of Low, Moderate, and High Risk had a 6%, 14%, and 40% rate of violent recidivism respectively. Retrospective studies have used receiver operating characteristics (ROC) to assess the SAVRY's accuracy according to its relative improvement over chance. Areas under the curve (AUCs) for the total scores retrospective prediction of violent recidivism averaged .74 to .80 across validation studies (Borum, Bartel, & Forth, 2002). Furthermore, studies by Dolan & Rennie (2008) and Gammelgard, Koivisto, Eronen, & Kaltiala-Heino (2008), found that the predictive validity of the SAVRY Risk Total was moderate for both violent and general recidivism and that the SAVRY was a useful tool in examining risk of violent behavior. Meyers & Schmidt (2008) found that AUC scores in their sample for violent recidivism was .66 at a 1 year follow up and .77 at a 3 year follow up; for general recidivism, they found an AUC score of .75 at 1 year and .76 at 3 years; and for nonviolent recidivism they found an AUC score of .80 at 1 year and .68 at 3 years.

Vincent, Chapman, and Cook (2010) also examined both the predictive validity of the SAVRY in a population of juvenile offenders as well as racial and ethnic differences. Their research found that the overall SAVRY risk rating significantly predicted both nonviolent and violent rearrest outcomes. Further, moderated hierarchical Cox regression analyses indicated that both race and ethnicity was not a significant moderator of the relationship between total SAVRY score and time of rearrest. Vincent, Chapman, and Cook (2010) also looked at the differences in predictive validity for each SAVRY domain. They found that Historical domain alone predicted any and nonviolent rearrest, however, this domain did not significantly predict

violent rearrests. This research found that the Social/Contextual domain was a significant predictor of violent rearrest, while the Individual/Clinical domain was not significantly predictive of any outcome. Further, this research found that the SAVRY domains and rearrests were not significantly moderated by race and ethnicity.

Viljoen et al. (2008) performed a study which examined the ability of the Juvenile Sex Offense Recidivism Risk Assessment Tool- II (J-SORRAT-II; Epperson, Ralston, Fowers, & DeWitt, 2005), the SAVRY, and the J-SOAP-II to predict violent behavior in 169 male youths who were admitted to a residential adolescent sex offender program. Trained raters completed the rating sheets for each of the assessment tools for each youth based on comprehensive file information. Information was then collected on whether the youth engaged in sexual aggression and non-sexual aggression both during and following the treatment program by examining law-enforcement, probation, and treatment records. On average, youth spent approximately 1 year in the treatment period, during which time their aggressive behaviors were examined. Further, youth were followed for an average of 6.58 years following discharge from the treatment program. The SAVRY risk scores at discharge were 17.2% of youth were classified as low risk, 68.0% of youth were classified as moderate risk, and 14.8% were classified as high risk. Viljoen et al., (2008) found that based on treatment records, 16.6% of youths engaged in sexual aggression while 30.2% engaged in nonsexual aggression during treatment. Further, Viljoen et al., (2008) found a base rate of 8.3% for sexual offenses post-discharge, 12.7% for non-sexual violent offenses, 10.1% for serious non-sexual violent offenses, and 42.8% for any offense. Viljoen et al., (2008) used an AUC cutoff score of .60 and found the SAVRY was not able to significantly predict which juvenile would sexually reoffend following discharge

(AUC = .53), indicating a prediction ability barely above chance. Furthermore, they found that that the SAVRY did not achieve much success in predicting sexual aggression during treatment either (AUC = .52). Further, when comparing youth aged 12-15 (young) and youth aged 16-18 (old), Viljoen et al, (2008) found that the SAVRY did not significantly predict sexual aggression in treatment (AUC = .47) for young juveniles and AUC = .58 for older juveniles) or for post discharge offenses (AUC = .54) for young juveniles and AUC = .53 for older juveniles. Despite these findings, Viljoen et al., (2008) did find that the SAVRY was able to predict nonsexual aggression during treatment (AUC = .73) for older juveniles compared to AUC = .66 for young juveniles) and also serious nonsexual violent offenses following discharge (AUC = .77 for older juveniles compared to AUC = .52 for young juveniles). They found an overall AUC score = .58 for post discharge reoffending. Also, Viljoen et al., (2008) found that juveniles 15 and under were more likely to be misjudged as being high risk for sexual and nonsexual violence following discharge.

The development of risk assessment tools for juvenile sex offenders is clearly a significant step in the field of juvenile risk assessment; however, research into the predictive validity is still needed before these tools become more widely accepted. To date, there are very few studies which use the SAVRY as a risk assessment tool in the assessment of risk of juvenile sex offenders. This study will add to the literature through the examination of the ability of the SAVRY to significantly predict sexual recidivism in a population of juvenile sex offenders. The study will include a longer follow-up period which will help to resolve some of the past limitations of predictive validity studies on risk assessment tools. It is hypothesized that the SAVRY will significantly predict both sexual recidivism and nonsexual recidivism in the

sample of juvenile sex offenders. It is also hypothesized that the SAVRY will outperform the guided clinical judgments provided in the forensic evaluation reports made by evaluating forensic psychologists who offered risk assessment evaluations at the time of their report without the assistance of structured professional judgment approach.

Typologies of juvenile sex offenders have also been used in past research which has investigated the predictive validity of risk assessment tools for juveniles. Particularly, it is important to investigate what effect these typologies have on the predictive validity of these risk assessment tools, as well as to establish the role that specific group membership has on the probability for the juvenile offender to reoffend. Therefore, this study will also examine the predictive validity of the SAVRY in predicting recidivism rates for three different sex offender categorizations: Victimology or type of victim (child, peer/adult, or combination of the two), type of offender (Sex offense only juvenile sex offender, or delinquent juvenile sex offender) and age of offender (ages 16 and up, or ages 15 and under), and type of offender (sex offense only juvenile sex offender, or delinquent sex offender). It is hypothesized that there will be significant differences between sex offender categorizations on all aspects of the SAVRY.

Methods

Participants

Participants were male juvenile sex offenders who had been committed to the Massachusetts Department of Youth Services (DYS). The sample was assembled by selecting 100 cases of juvenile offenders with a prior sexual offense who had previously been evaluated by doctoral-level, licensed forensic psychologists. The evaluations were conducted by a

forensic evaluation service, Bedford Policy Institute, which provided risk and needs assessments for juvenile sex offenders based on a request from the Department of Youth Services (DYS) in Massachusetts. The Forensic Evaluation Service ran evaluations for DYS from 1996 through 2003, and had completed approximately 2800 evaluations which were compiled into an extensive computer database. 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 age typology, juveniles were divided into older adolescents (16 and older) and younger adolescents (12-15 years) as was common in previous research (Vilojen et al., 2008, 2009). The age of the juvenile was determined based on the documented age at the time of their commitment to DYS. Of the sample of 93 juvenile sex offenders, information for the age of the adolescent was only missing for one adolescent. 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 victimology, or 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 distinctions. Victims of the juvenile sex offenders were to be children if they were under the age of 12 and were four or more years younger than the adolescent offender. This definition for a child victim was used

because it is the criteria used in the ERASOR when rating items regarding children (Worling & Curwen, 2001). Data regarding victimology 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, the juvenile sex offenders were divided into two subgroups based on offender typology. Adolescents were placed in the sex offense-only group if they had solely committed past sexual crimes. Adolescents were placed in the delinquent JSO group if they had a nonsexual criminal history in addition to their 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 on the offenders will be obtained solely from cases files and the forensic report. The names and identities from all case files will be kept confidential. This study will adhere to the ethical guidelines set forth by the American Psychological Association. Approval has been granted by the DYS Institutional Review Board, and will be gained from the Roger Williams University Human Subject Review Board (see Appendix A).

Materials and Procedure

This study is a non-experimental archival postdictive study. This study will not look at the cause and effect of variables, but it will look into the relationship between variables; more specifically the relationship between ratings of risk level and recidivism. Therefore, variables will not be manipulated; random assignment will not be used; and participants will not be

exposed to treatment conditions. Specifically, this study will be examining the ability of the SAVRY to predict sexual and nonsexual recidivism in juvenile sex offenders. Archival information, including forensic reports and arrest records will be used to score the SAVRY and to retrospectively determine the presence of reoffense.

Research Materials

Archival case specific information will be obtained from the forensic psychological reports which were completed by the forensic evaluation service. These reports will contain a complete clinical interview. Each report will contain detailed information regarding the juvenile's psychosocial history, current mental status and psychological functioning at the time of the evaluation, an account of the index sexual offense and any other criminal history, and other important risk factors that are specific to the juvenile. Reports will include any relevant information on each juvenile's educational, medical, and psychological background. Each report will also contain consultations from case workers, treatment staff, and program clinicians.

Information from the forensic evaluation will be gathered, coded, and compiled to complete Forensic Evaluation Data Sheet (FEDS) (see Appendix B). This information is broken down into six areas: demographics, history of delinquency, mental health history, clinical data/risk factors, nature of offense, and clinical judgments. Once collected, this information will be entered into a computer data base.

The SAVRY (see Appendix C) will be scored using the case files of each juvenile sex offender. For the present study, each item will receive a score of 2 if the item is rated High, 1 if the item is rated Moderate, and 0 if the is rated Low.

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

A CORI is a record of any appearance that an individual has made before a court and it contains any arrests, past convictions, serious violations, case dismissals, or any current pending charges of an individual. CORI records will be used in the current study as the outcome variable in order to determine which juvenile sex offenders in our sample sexually or nonsexually reoffended.

Procedure

Case files will be accessed and used to score the SAVRY. Raters will be four graduate students who will receive a one day training on the administration and scoring of the SAVRY. Training will focus on giving a basic understanding of the use of the tool to each rater, as well as training the raters on how to properly rate each individual risk factor, and also on how to develop an overall risk assessment. After training, each rater will complete several practice cases, using actual case files, which will be reviewed and discussed. Following this, cases will be randomly assigned to each rater, totaling 93 ratings for the sample of juvenile sex offenders.

SAVRY ratings will be completed before collecting any other data and without knowledge of a juvenile's recidivism.

Twenty cases (20% of the sample) will be selected to assess the interrater reliability of the SAVRY scores. Intra-Class correlation coefficients (ICC) were calculated for the SAVRY Total Score (.79), overall SAVRY Risk Rating (.46), historical risk factors (.72), social/contextual risk factors (.72), individual/clinical risk factors (.60), and protective factors (.60). These results were lower than expected; however, they do represent acceptable interrater reliability.

After all cases have SAVRY ratings, CORI records will be examined to identify which adolescents criminally reoffended and the specific 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

The first two hypotheses of this study are related to the predictive validity of the SAVRY for the recidivism among juvenile sex offenders. The first hypothesis is that the SAVRY will significantly predict sexual, violent, and non-violent recidivism in the sample of juvenile sex

offenders. The second hypothesis of the current study expects to find that the SAVRY will outperform the empirically based clinical judgments provided in the Forensic Evaluation Reports. The area under the receiver operating characteristic (ROC) curve will be used to measure the accuracy of the SAVRY, as well as the guided clinical judgment, in predicting the recidivism of juvenile sex offenders. Further, area under the receiver operating characteristic (ROC) curve will be used to measure the predictive validity of the SAVRY for juvenile sex offender typologies.

The ROC curve approximates predictive accuracy by producing an area under the curve (AUC) score produced by plotting sensitivity against specificity (Viljoen et al., 2009; Prentky et al., 2010). Sensitivity is defined as the true positive rate prediction, or the probability that the prediction will accurately identify the juveniles who recidivate. Specificity is the percentage of the group being measured who were correctly identified as not having the characteristics of interest, in this case, higher levels of risk. In other words, the ROC curve represents both the false positives and false negatives which may occur.

THE AUC score represents the likelihood that a given individual who recidivates will receive a higher score on the given measure that an individual who does not recidivate. A ROC curve ranges from .50, the probability that the prediction is no better than chance, to 1.0, which represents the probability the predictions is perfect, or that there is no overlap between recidivists and non-recidivists. Also, an AUC score which is greater than .70 indicates a significant and reliable predictive effectiveness. One of the distinct advantages to using the ROC curve is that it is not adversely affected by low base rates, a problem which has been

shown to be significant in a juvenile sex offender population. For this reason, ROC curve analyses are common in risk assessment research within sex offender and risk assessment studies (Viljoen et al., 2009; Prentky et al., 2010).

In the current study, it is expected that we will find an AUC score greater than .70 for sexual reoffending. Past Research by Viljoen et al. (2008) found that the AUC scores for juvenile offenders post discharge on the SAVRY to be .53 and .52 for aggressive behavior during treatment. It is expected that we will find significant AUC scores (.70 or higher) which will strongly support the predictive validity of the SAVRY for sexual, nonsexual, and any type of reoffending.

To date, the comparison of SAVRY scores to empirically based clinical judgments has not been made. The area under the receiver operating characteristic (ROC) curve will be used to compare the predictive validities of both the SAVRY and the empirically based clinical judgment. It is expected that the SAVRY will significantly outperform the empirically based clinical judgment for sexual recidivism, nonsexual violent recidivism, and non-violent recidivism.

Cox regression analyses will be carried out in order to examine the accuracy of the SAVRY in its ability to predict the time of the first reoffense for the juvenile sex offender sample. Cox regression analyses are a method of survival analyses which are used to explore the connection between survival and covariates, also known as independent exploratory variables. In this study, the covariates of interest are the SAVRY Total Score, the overall SAVRY risk rating, and the unaided clinical judgments. Survival analyses are useful in deciding whether or not specific events will happen, specifically whether or not a juvenile sex offender will

recidivate. Positive regression coefficients for covariates decrease survival times, or the juvenile sex offender recidivates closer to their release date, while negative regression coefficients increase survival times, or the juvenile sex offender recidivates further away from their release date. When a Cox Regression analysis is performed, a hazard ratio is created. A Cox Regression analysis predicts the degree at which hazard rates will occur for each covariate. In the Cox regression analyses a value of 1 will be given to juvenile sex offenders who reoffend and a value of 0 if they have not recidivated. The time to first reoffense will be measured in days starting at the date of discharge from DYS custody. Time at risk was calculated separately for each type of recidivism. For those who did not recidivate, time of risk was calculated using the final follow up date, which was the date that the CORI was requested. Researchers were unable to account for the times when an offender may not have been at risk to reoffend (e.g. jail time).

Results

Risk Judgments

On the SAVRY, 29% of youth were classified as low risk, 37% as moderate risk, and 34% as high risk for sexual reoffending. The mean SAVRY Total Score for the sample was 21.67 (SD = 8.88). 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.

SAVRY Total Scores and Summary Risk Ratings were compared to examine differences across juvenile sex offender typologies. For the age of offender typology older (M = 21.85, SD =

9.02) and younger (M = 21.65, SD = 8.81) juvenile sex offenders did not significantly differ in their SAVRY Total Scores, t (90) = .40, p = .53. Similarly, no significant differences were found for the SAVRY Summary Risk Rating, χ^2 (2) = 4.09, p = .13. Twenty eight percent of younger adolescents were found to be at low risk, 48% at moderate risk, and 25% to be at high risk for sexual reoffending. Twenty nine percent of older adolescents were found to be at low risk, 29% at moderate risk, and 42% 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 was split between low risk (24%) and moderate risk (26%). No differences were found across the subgroups when examining the guided clinical judgments, χ^2 (2) = 2.17, p = .34.

In the victimology grouping, of the adolescents with child victims, 40% were found to be at low risk, 33% at moderate risk, and 27% were deemed to be at high risk. Forty-nine percent of adolescent offenders with peer/adult victims were low risk, 23% at moderate risk, and 29% were deemed to be at high risk. Finally, the adolescent offender mixed victim group was found to be a bipolar risk grouping with two offenders (29%) rated low risk, five offenders (71%) were rated high risk, and no adolescents were rated to be of moderate risk for reoffense. Juvenile sex offenders in this typology did not significantly differ in their SAVRY Total Score and their overall SAVRY Risk Rating, $p > .05$. Finally, there were no significant differences between the child offenders group, the peer/adult offenders group, and the mixed offenders groups on the guided clinical judgments assigned to them, $\chi^2(2) = 1.41$, p = .84.

For the type of offender typology, the sex offense only group (M = 19.35, SD = 9.34) and delinquent offender group (M = 23.62, SD = 8.11), juvenile sex offenders did not significantly differ in their SAVRY Total Scores, t (90) = .30, p = .59. However, the SAVRY Summary Risk Rating was found to be approaching significance in type of offender typology, χ^2 (2) = 5.47, p = .07. This result may indicate that delinquent offenders were more likely to receive a high risk rating than a low risk rating. Forty percent of sex offense only offenders were found to be at low risk, 35% at moderate risk, and 25% to be at high risk for sexual reoffending. Nineteen percent of delinquent offenders were found to be at low risk, 39% at moderate risk, and 42% to be at high risk for sexual reoffending. No differences were found for the guided clinical judgments for type of offender typology, p > .05 (See Table 1).

Recidivism Rates

Information about criminal reoffense was collected from CORI data requested in August 2010. The mean follow-up time, which was based on the date of discharge from DYS to CORI data collection was 6.3 years (*SD* = 3.02). Fifty-eight juvenile sex offenders (62%) were charged with at least one new offense (sexual or nonsexual) during the follow-up period. Of the 58 JSOs who recidivated, 10 offenders (3%) committed a sex offense only, 56 offenders (83%) committed a nonsexual offense only, and 8 offenders (14%) committed both a sexual and nonsexual reoffense. The base-rate for sexual re-offense for the entire sample was 11%. The average time to first nonsexual reoffense was 472.4 days, (*SD* = 639.2) while the average time to first sexual reoffense was 822.6 days, (*SD* = 932.5), nearly double the length of time to first nonsexual reoffense.

For general recidivism in the age of offender typology, 60% (n = 24) of younger adolescents and 65% (n = 34) of older adolescents reoffended. Of the ten juveniles who sexually reoffended, six (15%) fell into the younger group, ages 12 to 15, and four (8%) fell into the older group, 16 years of age or older. Fifty-five percent (n = 22) of younger adolescents nonsexually reoffended, while 65% (n = 34) of older adolescents nonsexually reoffended. There were no significant differences found between the two subgroups in this typology for average time to reoffense. Younger youth (M = 396.96, SD = 446.04) and older adolescents (M = 495.41, SD = 721.99) had similar lengths of time to commit any type of reoffense. Further, younger offenders (M = 351.00, SD = 347.62) and older offenders (M = 550.97, SD = 776.77) had similar lengths of time to their first nonsexual reoffense. The average time to first sexual reoffense for younger adolescents was 984.17 days (SD = 1165.33) which was nearly double the average length of time for older adolescents (M = 580.25, SD = 463.56).

For general recidivism in the victimology typology, 52% (n = 25) of child offenders, 71% (n = 25) of peer/adult offenders, and 86% (n = 6) of mixed victim offenders committed a reoffense. Four (8%) child offenders, four (11%) juveniles with peer/adult victims, and two (29%) mixed victim offenders committed a sexual reoffense. Further, approximately one half of child offenders (n = 24), 71% (n = 25) of peer/adult offenders, and 71% (n = 5) of offenders with mixed victimology nonsexually reoffended. As was the case in previous results, there were no significant differences between offenders with different types of victimology in their average time to recidivism. The average number of days until committing any type of reoffense was 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). In terms of sexual

reoffending, offenders with child victims (M = 911.25, SD = 1403.81) and mixed victims (M = 964.5, SD = 1136.32), generally took longer than offenders with peer/adult victims (M = 663.0, SD = 386.99) to commit a new sexual offense. Finally, 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) had a similar time to first nonsexual reoffense.

For the type of offender typology, fifty-five percent (n = 22) of sex offense-only offenders and 69% (n = 36) of offenders generally recidivated. Four (10%) juvenile offenders in the sex offense-only subgroup and six (12%) delinquent juvenile offenders committed a new sexual offense. Fifty three percent (n = 21) of juveniles in the sex offense-only subgroup nonsexually reoffended, while 67% (n = 35) of the delinquent offender subgroup nonsexually reoffended. Similarly to previous findings, the average length of time to reoffense did not significantly differ within the type of offender typology. In terms of general recidivism, it took sex offense-only offenders an average of 385.59 days (SD = 542.26) and delinquent JSOs 496.89 days (SD = 666.97) to commit any type of new reoffense. Sex offense-only offenders (M = 491.14, SD = 653.97) and delinquent offenders (M = 461.17, SD = 639.58) also had similar average lengths of time to nonsexual reoffending. In comparison to general and nonsexual recidivism, the differences of average time to sexual reoffense for these subgroups approached significance, $F(8) = 4.46$, $p = .07$. On average, sex offense-only offenders committed a new sexual offense within 210.5 days (SD = 192.59), which is considerably shorter than delinquent offenders who recommitted a sexual reoffense within 1230.67 days (SD = 1021.48).

Predictive Validity

The predictive validity of the SAVRY was tested using ROC analyses. SAVRY Total Score and the overall SAVRY Risk Rating did not significantly predict sexual recidivism better than chance (see Table 1). However, the SAVRY Total Score (AUC = .66, *p* = .01) and the overall SAVRY Risk Rating (AUC = .63, *p* = .04) significantly predicted nonsexual recidivism. Further the SAVRY Total Score (AUC = .66, *p* = .01) and the overall SAVRY Risk Rating (AUC = .64, *p* = .02) significantly predicted general recidivism. These results indicate that there is around a 65% chance that a randomly selected juvenile from those who nonsexually recidivate and those who generally recidivate with any offense will have higher SAVRY Total Scores and higher overall SAVRY Risk Ratings.

SAVRY social/contextual risk factors, SAVRY individual/clinical risk factors, and SAVRY protective risk factors did not significantly predict sexual recidivism better than chance, *p* > .05. However, SAVRY historical risk factors (AUC = .70, *p* = .043) did significantly predict sexual recidivism. This result indicates that there is around a 70% chance that a randomly selected juvenile from those juveniles who sexually reoffended will have a higher score on SAVRY historical risk factors. In regards to nonsexual recidivism, SAVRY historical risk factors and SAVRY protective factors were not significant predictors, *p* > .05. On the other hand, SAVRY social/contextual risk factors (AUC = .67, *p* = .01) and SAVRY individual/clinical risk factors (AUC = .64, *p* = .03) significantly predicted nonsexual recidivism. These results were similar with regards to general recidivism, with both the SAVRY historical risk factors and the SAVRY protective factors having non-significant results, and the SAVRY social/contextual risk factors (AUC = .68, *p* = .004) and SAVRY individual/clinical risk factors (AUC = .63, *p* = .03) having significant results for general recidivism. These results indicate that there is a 60% to 70%

chance that a randomly selected juvenile from those who nonsexually recidivate and those who generally recidivate with any offense will have higher scores on both the SAVRY social/contextual risk factors and the individual/clinical risk factors.

While certain aspects of the SAVRY significantly predicted sexual, nonsexual, and general recidivism; the guided clinical judgments, which were provided in the forensic evaluation reports by the evaluating forensic psychologists, did not significantly predict recidivism better then chance. When comparing the AUC values of the SAVRY and the guided clinical judgments, as seen in Table 1, it is clear that the SAVRY consistently produced higher AUC values and more significant predictions of recidivism.

ROC analyses were also used to measure the predictive validity of the SAVRY for juvenile sex offender typologies. When looking at younger juvenile sex offenders and any reoffense, significant AUC values were found for: the SAVRY Total Score (AUC = .77, p = .005), the historical risk factors (AUC = .71, p = .03), the social/contextual risk factors (AUC = .71, p = .03), and the individual/clinical risk factors (AUC = .75, p = .009). AUC values for the SAVRY summary risk rating and the SAVRY protective factors were not significant, p > .05. These results indicate that there is a 70% to 77% chance that a randomly selected younger juvenile, from the population of those who generally recidivate with any offense, will have higher scores on the SAVRY Total score, the historical risk factors, the social/contextual risk factors, and they individual/clinical risk factors, than a randomly selected non-recidivist juvenile. In regards to younger juveniles, the SAVRY was not predictive of sexual recidivism, p > .05. Further, when looking at younger juvenile sex offenders and nonsexual reoffense, significant AUC values were found for: the SAVRY Total Score (AUC = .76, p = .006), the historical risk factors (AUC = .69, p =

.04), the social/contextual risk factors (AUC = .71, *p* = .03), and the individual/clinical risk factors (AUC = .74, *p* = .009). These results indicate that there is a 69% to 76% chance that a randomly selected younger juvenile, from the population of those who nonsexually recidivate will have higher scores on the SAVRY Total score, the historical risk factors, the social/contextual risk factors, and they individual/clinical risk factors, than a randomly selected nonrecidivist juvenile. AUC values for the SAVRY summary risk rating and the SAVRY protective factors were not significant, *p* > .05. In regards to older juvenile sex offenders, the SAVRY was not predictive of sexual recidivism, nonsexual recidivism, and any recidivism, *p* > .05 (see Table 2). The guided-clinical judgments made by the evaluating forensic psychologist yielded non-significant AUC values for the age of offender typology.

When looking at juvenile sex offenders with peer/adult victims and any reoffense, significant AUC values were found for SAVRY Total Score (AUC = .82, *p* = .008), SAVRY Summary Risk Rating (AUC = .79, *p* = .008), the historical risk factors (AUC = .73, *p* = .03), the social/contextual risk factors (AUC = .82, *p* = .004), the individual/clinical risk factors (AUC = .81, *p* = .005), and the SAVRY protective factors (AUC = .85, *p* = .002). These results indicate that there is a 73% to 85% chance that a juvenile offender with a peer/adult victim randomly selected from the population of juveniles who generally recidivated with any reoffense will have higher scores on each aspect of the SAVRY, when compared to a randomly selected juvenile from those who did not generally recidivate. Further, when looking at juvenile offenders with peer/adult victims who commit a sexual reoffense, a significant AUC value was found for historical risk factors (AUC = .85, *p* = .03). This result shows that there is an 85% chance that a juvenile offender with a peer/adult victim randomly selected from the

populations of juveniles who sexually recidivate will have a higher score on the historical risk factors, when compared to a randomly selected juvenile who does not sexually recidivate. AUC values for the other aspects of the SAVRY, including Summary Risk Rating and Total Score, were not significant, $p > .05$. Additionally, when examining juvenile offenders with peer/adult victims who commit a nonsexual reoffense, AUC values were similar to those found in the general reoffense population. AUC values for SAVRY Total Score (AUC = .82, $p = .003$), SAVRY Summary Risk Rating (AUC = .79, $p = .008$), the historical risk factors (AUC = .73, $p = .03$), the social/contextual risk factors (AUC = .82, $p = .004$), the individual/clinical risk factors (AUC = .81, $p = .005$), and the SAVRY protective factors (AUC = .85, $p = .002$). These results indicate that there is a 73% to 85% chance that a juvenile offender with a peer/adult victim randomly selected from the population of juveniles who nonsexually recidivated will have higher scores on each aspect of the SAVRY, when compared to a randomly selected juvenile from those who did not commit a nonsexual reoffense. In regards to juvenile sex offenders with child victims or mixed victimology, the SAVRY was not predictive of sexual recidivism, nonsexual recidivism, and any recidivism, $p > .05$ Guided clinical judgments yielded non-significant AUC values for type of victim typology, $p > .05$ (see Table 3).

When looking at type of offender, significant AUC values were found for the delinquent juvenile offender group, but not in the sex-offense only group (see table 4). When looking at delinquent offender group and general reoffense, significant AUC values were found for SAVRY Summary Risk Rating (AUC = .72, $p = .01$) and the social/contextual risk factors (AUC = .68, $p = .04$). These results show that there is a 68% to 72% chance that a delinquent juvenile offender who is randomly selected from the population of juveniles who reoffended with any type of

reoffense will have higher scores on the SAVRY Summary Risk Rating and on the social/contextual risk factors, than a randomly selected juvenile who did not reoffend. SAVRY Total Score, historical risk factors, individual/clinical risk factors, and protective factors did not yield significant AUC values, $p > .05$. In regards to delinquent offenders and sexual reoffending, a significant AUC value was found for historical risk factors (AUC = .81, $p = .01$). This result indicates that there is approximately an 80% chance that a delinquent juvenile offender who is randomly selected from the population of juveniles who reoffend sexually will have a higher score on the historical risk factor section of the SAVRY, than a randomly selected juvenile who did not sexually recidivate. Significant AUC values were not found for the other aspects of the SAVRY, $p > .05$. When looking at delinquent juvenile offenders who nonsexually reoffended, a significant AUC value was found for SAVRY Summary Risk Rating (AUC = .69, $p = .03$). This result indicates that there is approximately a 70% chance that a delinquent juvenile offender who is randomly selected from the population of juveniles who nonsexually reoffend will have a higher score on the SAVRY Risk Rating, than a randomly selected juvenile who did not nonsexually reoffend. Non-significant AUC values were found in regards to delinquent juvenile offenders and the other aspects of the SAVRY, $p > .05$. Similarly to age of offender and victimology, the guided clinical judgments yielded no significant results for the type of offender typology, $p > .05$ (see table 4).

Time to First Reoffense

Cox regression analyses were used to predict the time to first reoffense. SAVRY Total Score significantly predicted time to first general reoffense, $b = .05$, $SE = .02$, Wald = 9.64, $df = 1$, $p = .002$, and also time to first nonsexual reoffense, $b = .06$, $SE = .02$, Wald = 10.63, $df = 1$, $p =$

.001. These results indicate that for every point increase in SAVRY Total Score will result in a 5% to 6% increase in the likelihood that a juvenile offender will be rearrested for any reoffense or a nonsexual reoffense after their release from DYS custody. Further, these results showed a positive regression coefficient which decreases survival time, indicating that a juvenile would be rearrested sooner rather than later. SAVRY Total Score did not significantly predict time to first sexual reoffense (see Table 5).

Similarly, overall SAVRY Risk Rating significantly predicted time to first general reoffense, b = .42, SE = .17, Wald = 5.87, df = 1, p = .02, and also time to first nonsexual reoffense, b = .42, SE = .18, Wald = 5.72, df = 1, p = .02. These results indicate that as the overall SAVRY Risk Rating increases there will be an approximately 40% increase in the likelihood that a juvenile offender will be rearrested for any reoffense or a nonsexual reoffense after their release from DYS custody. Similarly, these results showed a positive regression coefficient which decreases survival time, indicating that a juvenile would be rearrested sooner rather than later. Overall SAVRY Risk Rating did not significantly predict time to first sexual reoffense.

In regards to guided clinical judgment, cox regression analyses showed no significant results for time to general rearrest, b = -.69, SE = .19, Wald = .136, df = 1, p = .71; time to nonsexual rearrest, b = -.12, SE = .19, Wald = .38, df = 1, p = .54; and time to sexual rearrest, b = -.11, SE = .43, Wald = .07, df = 1, p = .80 . These results are consistent with the ROC findings which examined predictive validity.

Discussion

The current study has examined the predictive validity of the SAVRY in predicting sexual, nonsexual, and general recidivism in a population of juvenile sex offenders. The results showed satisfactory interrater reliability, which is the first step in determining the predictive validity of an assessment instrument. Further, the results of this study supported the hypotheses that the SAVRY would significantly predict both nonsexual and general recidivism. Similarly, SAVRY social/contextual risk factors and SAVRY individual/clinical risk factors also significantly predicted both nonsexual and general recidivism. While the results were positive for nonsexual and general recidivism, the results did not support the hypotheses on sexual recidivism. SAVRY Total Score and overall SAVRY Risk Rating did not significantly predict sexual recidivism. However, SAVRY historical risk factors were able to significantly predict sexual recidivism. Further, the SAVRY Total Score and overall SAVRY Risk Rating were able to significantly predict the time to first nonsexual reoffense and general reoffense. Similarly, neither was able to significantly predict time to first sexual reoffense. Interestingly, the results showed that the SAVRY Total Score was a stronger predictor of nonsexual or general recidivism, while the overall SAVRY Risk Rating was a stronger predictor of the time to first nonsexual or general reoffense. Future research may wish to examine these differential predictive abilities of the SAVRY.

The SAVRY was also found to have predictive validity when looking at juvenile offender typologies. When examining age of offender, the SAVRY was found to significantly predict both general recidivism and nonsexual recidivism in the younger population of offenders. Similarly, when looking at offender victimology, the SAVRY was found to significantly predict both general and nonsexual recidivism in offenders who had peer/adult victims. The historical risk factors

section of the SAVRY was also found to significantly predict sexual recidivism in offenders who had peer/adult victims. When examining the type of offender typology, significant results were found in the delinquent offender group, but not in the sex-offense only group. The SAVRY Summary Risk Rating and the social/contextual risk factor section were found to predict general recidivism in delinquent offenders, while the SAVRY Summary Risk Rating was also found to significantly predict nonsexual recidivism in delinquent offenders. Similarly to offenders with peer/adult victims, the SAVRY historical factors section was also found to significantly predict sexual recidivism in delinquent offenders. The guided clinical judgments yielded not significant results in regards to the offender typologies.

While predicting sexual recidivism remains to be an elusive task , the results of this study have further shown the effectiveness of the SAVRY as an assessment tool which was designed to predict general recidivism rates in a juvenile population. While the SAVRY did not significantly predict sexual recidivism, the SAVRY was able to significantly predict nonsexual and general recidivism. These findings are consistent with past research on the SAVRY (Borum, Bartel, & Forth, 2002; Dolan & Rennie, 2008; Gammelgard, Koivisto, Eronen, & Kaltiala-Heino, 2008) which have shown the predictive validity of the SAVRY in predicting general recidivism. These results provide an argument for conceptualizing juvenile sex offenders as a subgroup which falls under the greater juvenile delinquency umbrella. In other words, juvenile sex offenses should be viewed as one type of violent delinquency which falls under the heading of juvenile delinquency. As a whole, the base rate of sexual delinquency in juveniles is relatively small, and to date has been extremely difficult to predict. The results of this study have shown that both nonsexual and general recidivism occurs at a much higher frequency and is also easier

to predict. Therefore, future research may wish to examine the juvenile sex offender population as a typology within juvenile delinquency.

Limitations of the current study include low rates of sexual recidivism and the use of formal criminal records as the only source of information about recidivism. The use of formal criminal records does not include a new offense, either sexual or nonsexual, in which a criminal charge did not result. In other words, it is possible that some juveniles reoffended, but the new offenses went undetected by the criminal justice system.

Limitations which are related to the risk measure include the problem that the SAVRY was coded retrospectively, based solely on archival information. Archival information is often incomplete; with information missing that may be essential for scoring specific SAVRY items. Further, the SAVRY was scored by four graduate level students who had been trained in the scoring of the instruments, but lacked significant clinical experience at the time of the ratings. In future research, it may be beneficial to use a prospective research design, which would allow for the scoring to be based on more than archival information.

Despite these limitations, this study provided further evidence in support of the idea that juvenile sex offenders should be looked at as an offender typology within the greater delinquent juvenile population. Further, this study is the first to point to the possibility of the different strengths of both the SAVRY Total Score (prediction of actual reoffense) and overall SAVRY Risk Rating (prediction of time to first reoffense). Given these findings, it is suggested that future research further explore these two concepts, and their potential for predicting recidivism. Finally, for the first time, this study compared the predictive abilities of a structured professional judgment assessment instrument against the guided clinical judgments of licensed

forensic psychologists. The results showed provide some evidence that shows that the ability of the SAVRY to outperform the guided clinical judgments in terms of general and nonsexual recidivism. These results provide further evidence which supports the use of the structured professional judgment approach when evaluating a population of delinquent juvenile offenders.

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

	Sexual Recidivism				*Nonsexual Recidivism*				*General Recidivism*			
SAVRY	AUC	p	SE	95% CI	AUC	p	SE	95% CI	AUC	p	SE	95% CI
Summary Risk Rating	.56	.57	.09	.37-.74	.63*	.04	.06	.51-.74	.64*	.02	.06	.53-.75
Total Score	.61	.27	.09	.44-.77	.66*	.009	.06	.55-.77	.66*	.009	.06	.55-.77
Historical	.70*	.04	.08	.53-.86	.59	.15	.06	.47-.70	.60	.11	.06	.48-.72
Social/Contextual	.55	.61	.08	.38-.72	.67*	.005	.06	.56-.79	.68*	.004	.06	.57-.79
Individual	.50	1.0	.07	.37-.63	.64*	.03	.06	.52-.75	.63*	.03	.06	.52-.75
Protective	.50	.98	.08	.34-.67	.60	.12	.06	.48-.71	.58	.17	.06	.47-.70
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; SAVRY = Structured Assessment of Violence Risk in Youth (Borum, 2003).
*p < .05.

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

SAVRY	*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)												
Summary Risk Rating	.58	.52	.12	.34-.83	.63	.15	.09	.46-.81	.67*	.06	.09	.51-.85
Total Score	.62	.36	.09	.43-.80	.76*	.006	.08	.60-.91	.77*	.005	.08	.61-.92
Historical	.66	.21	.09	.48-.85	.69*	.04	.08	.52-.85	.71*	.03	.08	.55-.87
Social/Contextual	.52	.91	.10	.31-.72	.71*	.03	.08	.54-.87	.71*	.03	.09	.54-.88
Individual	.58	..56	.09	.41-.74	.74*	.009	.08	.59-.90	.75*	.009	.08	.58-.91
Protective	.46	.73	.11	.30-.66	.70*	.03	.08	.54-.86	.67	.08	.09	.50-.84
Guided Clinical Judgments	.46	.75	.13	.21-.71	.53	.77	.10	.34-.72	.55	.62	.10	.35-.75
Older JSOs (16 years and older)												
Summary Risk Rating	.54	.78	.15	.24-.84	.61	.22	.08	.45-.76	.61	.22	.08	.45-.76
Total Score	.63	.39	.17	.30-.97	.60	.25	.08	.45-.75	.60	.25	.08	.45-.46
Historical	.69	.20	.18	.35-1.0	.52	.84	.08	.36-.68	.52	.84	.08	.36-.70
Social/Contextual	.57	.67	.16	.25-.88	.65	.09	.08	.49-.80	.65	.09	.08	.49-.80
Individual	.47	.84	.12	.23-.71	.56	.52	.08	.40-.71	.56	.52	.08	.40-.71
Protective	.53	.84	.15	.24-.83	.51	.88	.09	.35-.68	.51	.88	.09	.36-.68
Guided Clinical Judgments	.51	.96	.09	.32-.69	.54	.81	.19	.16-.92	.51	.96	.09	.32-.69

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; SAVRY = Structured Assessment of Violence Risk in Youth (Borum, 2003); JSOs = juvenile sex offenders.
*p < .05.

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

SAVRY	Sexual Recidivism				Nonsexual Recidivism				General Recidivism			
Child Victims	AUC	p	SE	95% CI	AUC	p	SE	95% CI	AUC	p	SE	95% CI
Summary Risk Rating	.53	.87	.15	.23-.82	.48	.84	.08	.32-35	.49	.86	.08	.32-.65
Total Score	.64	.36	.12	.40-.88	.52	.85	.09	.39-.68	.51	.93	.09	.34-.67
Historical	.70	.20	.11	.49-.90	.49	.86	.08	.32-.65	.49	.86	.09	.32-.66
Social/Contextual	.59	.56	.13	.13-.56	.56	.47	.08	.40-.73	.55	.59	.08	.38-.71
Individual	.55	.74	.09	.38-.74	.50	.89	.09	.32-.66	.48	.84	.09	.32-.65
Protective	.47	.85	.13	.22-.72	.41	.26	.08	.24-.57	.38	.17	.08	.23-.54
Guided Clinical Judgments	.39	.48	.14	.12-.66	.41	.33	.09	.24-.59	.44	.49	.09	.26-.61
Peer/Adult Victims												
Summary Risk Rating	.62	.44	.12	.39-.86	.79*	.008	.08	.63-.96	.79*	.008	.08	.63-.96
Total Score	.70	.20	.09	.53-.87	.82*	.003	.08	.67-.97	.82*	.003	.08	.67-.97
Historical	.84*	.03	.08	.68-.97	.73*	.03	.09	.56-.91	.73*	.03	.09	.56-.91
Social/Contextual	.55	.76	.10	.36-.74	.82*	.004	.09	.65-.99	.81*	.004	.09	.65-.99
Individual	.59	.55	.10	.39-.79	.81*	.005	.08	.65-.96	.81*	.005	.08	.65-.96
Protective	.65	.35	.12	.42-.88	.85*	.002	.08	.69-1.0	.85*	.002	.08	.69-1.0
Guided Clinical Judgments	.63	.41	.17	.30-.97	.67	.17	.12	.44-.89	.67	.17	.12	.44-.89
Mixed Victims												
Summary Risk Rating	.40	.70	.27	0.0-.92	.45	.85	.23	0.0-.91	.67	.62	.19	.29-1.0
Total Score	.10	.12	.13	0.0-.36	.50	1.0	.22	.07-.93	.33	.62	.19	0.0-.71
Historical	.35	.56	.28	0.0-.89	.40	.70	.22	0.0-.82	.58	.80	.21	.18-.98
Social/Contextual	.25	.33	.22	0.0-.69	.20	.25	.18	0.0-.54	.08	.21	.12	0.0-.32
Individual	.15	.18	.15	0.0-.45	.45	.85	.23	.01-.89	.25	.45	.18	0.0-.61
Protective	.10	.12	.13	0.0-.36	.60	.70	.22	.17-1.0	.50	1.0	.20	.10-.90
Guided Clinical Judgments	.17	.37	.30	0.0-.62	1.0	.12	0.0	1.0-1.0	.83	.37	.23	.38-1.0

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; SAVRY = Structured Assessment of Violence Risk in Youth (Borum, 2003); JSOs = juvenile sex offenders.
*p < .05.

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

SAVRY	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												
Summary Risk Rating	.38	.42	.12	.14-.61	.50	1.0	.09	.32-.68	.51	.94	.09	.33-.69
Total Score	.44	.70	.12	.22-.67	.62	.18	.09	.45-.80	.62	.20	.09	.45-.80
Historical	.52	.91	.12	.29-.75	.60	.26	.09	.43-.78	.61	.24	.09	.43-.79
Social/Contextual	.40	.51	.12	.17-.63	.65	.12	.09	.47-.82	.64	.15	.09	.46-.81
Individual	.47	.84	.10	.27-.67	.58	.37	.09	.40-.76	.59	.36	.09	.41-.76
Protective	.37	.39	.10	.17-.56	.53	.72	.09	.35-.72	.52	.87	.09	.33-.70
Guided Clinical Judgments	.54	.82	.21	.14-.94	.46	.72	.10	.27-.66	.49	.95	.10	.30-.69
Delinquent JSOs												
Summary Risk Rating	.67	.17	.10	.48-.87	.69*	.03	.08	.54-.84	.72*	.01	.07	.58-.87
Total Score	.71	.10	.08	.55-.87	.64	.10	.08	.49-.80	.65	.09	.08	.49-.81
Historical	.81*	.01	.07	.68-.95	.56	.47	.08	.40-.72	.58	.38	.08	.41-.74
Social/Contextual	.66	.21	.09	.49-.83	.66	.07	.08	.50-.81	.68*	.04	.08	.52-.83
Individual	.52	.86	.08	.36-.68	.63	.14	.08	.47-.78	.62	.17	.08	.46-.78
Protective	.58	.51	.11	.37-.80	.62	.18	.09	.45-.78	.61	.20	.09	.44-.78
Guided Clinical Judgments	.47	.82	.12	.24-.70	.60	.35	.10	.40-.80	.59	.41	.11	.38-.80

Note: AUC = area under the curve; SE = standard error; CI = confidence interval; SAVRY = Structured Assessment of Violence Risk in Youth (Borum, 2003); JSOs = juvenile sex offenders.
*p < .05.

Table 5: Predicting Time to First Reoffense using Cox Regression

SAVRY							
	b	SE	Wald	Df	p	Exb(b)[a]	95% CI
Sexual Recidivism							
Summary Risk Rating	.18	.40	.21	1	.65	1.2	.55-2.62
Total Score	.03	.04	.63	1	.43	1.03	.96-1.10
Guided Clinical Judgment	-.11	.43	.07	1	.80	.90	.39-2.08
Nonsexual Recidivism							
Summary Risk Rating	.42*	.18	5.72	1	.02	1.52	1.08-2.14
Total Score	.06*	.02	10.63	1	.001	1.06	1.02-1.10
Guided Clinical Judgment	-.12	.19	.38	1	.54	.89	.61-1.29
General Recidivism							
Summary Risk Rating	.42*	.17	5.89	1	.02	1.51	1.08-2.12
Total Score	.05*	.02	9.64	1	.002	1.06	1.02-1.09
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; SAVRY = Structured Assessment of Violence Risk in Youth (Borum, 2003)
*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 led 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, a logistic regression will be conducted to determine if the age of the offender contributes to the predictive ability of the ERASOR. Finally a series of one-way between groups ANOVAs will be used to test if there are significant differences between offenders with different types of victims on their scores on ERASOR subscales.

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

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:

I. 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**

II. 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:

III. 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

IV. 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: _____

V. 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 under controlled behav.
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

SAVRY Scoring Form

Historical Risk Factors	**Low**	**Moderate**	**High**
1. History of Violence	No acts of violence	1-2 acts of violence	≥ 3 acts of violence
2. History of Non Violent Offending	No prior nonviolent offending	< 5 prior acts of nonviolent offending	≥ 5 prior acts of nonviolent offending
3. Early Initiation of Violence	No known violent acts before age 14	First know violent act between ages 11 and 13	First know violent act prior to age 11
4. Past Supervision/Intervention Failures	Complied with all court orders and treatment	Failed to comply w/court orders and/or treatment < 3 times	Failed ≥ 3 times to comply w/ court orders or treatment
5. History of Self-Harm or Suicide Attempts	No history of self-harm or suicide attempts	History of self-harm or suicidal gestures w/no clear suicidal attempt	History of serious self-harm or suicide attempts
6. Exposure to Violence in the Home	Has not witnessed violence in the home	Witnessed occasional physical aggression and/or 1 act of serious violence in the home	Witnessed chronic physical aggression or serious forms of violence in the home
7.Childhood History of Maltreatment	No physical abuse or neglect	Infrequent or less serious physical abuse or neglect	Chronic or severe physical abuse or neglect
8. Parental/Caregiver Criminality	No parental/caregiver history of criminal behavior as an adult	Parental/caregiver history of occasional (< 5) minor criminal behavior as an adult	Parental/caregiver history of frequent (≥ 5) minor or any serious criminal behavior as an adult
9. Early Caregiver Disruption	Continuity of care occurred during childhood	Some discontinuity of care occurred during childhood	Significant discontinuity of care occurred during childhood (> 1 year)
10. Poor School Achievement	No significant difficulties in school achievement	Some difficulties in school achievement	Significant difficulties in school achievement
Social/Contextual Risk Factors	**Low**	**Moderate**	**High**
11. Peer Delinquency	Does not associate w/delinquent peers	Occasionally associate w/delinquent or antisocial peers	Frequently associates with criminal or antisocial peers
12. Peer Rejection	No peer rejection	Moderate peer rejection or significant past peer rejection	Significant peer rejection
13. Stress and Poor Coping	Mild stress, no significant loses, with average coping ability	Moderate stress or loss, with adequate coping ability	Moderate to significant stress or loss, with poor coping ability
14. Poor Parental Management	Consistent and appropriate parental management	Somewhat inconsistent parental management	Extremely inconsistent or overly strict/permissive parental management
15. Lack of Personal/Social Support	Multiple sources of emotional support and guidance	Inconsistent or unreliable emotional support and guidance	Few or no sources of emotional support and guidance
16. Community Disorganization	Low rates of crime, poverty, and violence in community	Some crime, poverty, and/or violence problems in community	Significant crime. Poverty, and/or violence in community
Individual/Clinical Risk Factors	**Low**	**Moderate**	**High**
17. Negative Attitudes	Attitudes do not support crime or violence	Some attitudes supportive of crime or violence	Attitudes condone crimes and/or violence
18. Risk Taking/Impulsivity	Exhibits no problems with risk	Exhibits minor risk	Exhibits significant risk

	taking/impulsivity	taking/impulsivity	taking/impulsivity
19. Substance-Use Difficulties	No current or past problems with drug/alcohol use	No current significant problems bust has significant past issues	Serious current difficulties related to alcohol and/or drugs
20. Anger Management Problems	Age-appropriate ability to manage expressions of anger	Moderate difficulty controlling expressions of anger	Significant difficulty controlling expressions of anger
21. Low Empathy/Remorse	Age-appropriate capacity for remorse/empathy	Moderate impairment in age-appropriate capacity for remorse/empathy	Significant impairment in age appropriate capacity for remorse/empathy
22. Attention Deficit/Hyperactivity Difficulties	No difficulties w/restlessness, hyperactivity, or concentration	Moderate difficulties w/restlessness, hyperactivity, or concentration	Serious difficulties w/restlessness, hyperactivity, or concentration
23. Poor Compliance	Positive attitude toward intervention/supervision	Occasional negative attitude toward intervention/treatment	Frequent negative attitude toward intervention/treatment
24. Low Interest/Commitment to School	Average interest/commitment to school	Low interest/commitment but presently attends and completes school work	Low interest/commitment; often truant, late, does not complete school work
Protective Factors	**Present**		**Absent**
P1. Pro-social Involvement	Involved in prosocial activities/peer groups		Little/no involvement in prosocial activities/peer groups
P2. Strong Social Support	Strong social supports		No strong social supports
P3. Strong Attachments and Bonds	Strong attachment/bond w/ ≥ 1 prosocial adult(s)		No attachment/bond w/ ≥ 1 prosocial adult(s)
P4. Positive Attitude Toward Intervention and Authority	Positive attitude toward remediation/authority		Not positive attitude toward remediation/authority
P5. Strong Commitment to School	Exhibits high levels of interest/involvement/motivation		Does not exhibit high levels of interest/involvement/motivation
P6. Resilient Personality Traits	Exhibits positive and resilient personality characteristics		Does not exhibit resilient personality traits
Summary Risk Rating	**Low**	**Moderate**	**High**