

## **The Estimate of Risk of Adolescent Sexual Offense Recidivism (ERASOR): Preliminary Psychometric Data**

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*The Estimate of Risk of Adolescent Sexual Offense Recidivism (ERASOR) is an empirically guided checklist designed to assist clinicians to estimate the short-term risk of a sexual reoffense for youth aged 12–18 years of age. The ERASOR provides objective coding instructions for 25 risk factors (16 dynamic and 9 static). To investigate the psychometric properties, risk ratings were collected from 28 clinicians who evaluated 136 adolescent males (aged 12–18 years) following comprehensive, clinical assessments. Preliminary psychometric data (i.e., interrater agreement, item–total correlation, internal consistency) were found to be supportive of the reliability and item composition of the tool. ERASOR ratings also significantly discriminated adolescents based on whether or not they had previously been sanctioned for a prior sexual offense.*

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There are numerous goals of a comprehensive assessment for an individual who has committed a sexual offense. In addition to the identification of unique strengths, concerns, and treatment needs, current best-practice guidelines suggest that the risk of a sexual reoffense should be addressed in some capacity (ATSA, 2001). Estimates of the risk for future sexual offending assist with decisions regarding many critical issues such as the level of community access, the timing of family reunification, and the delivery of specific treatment interventions.

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When providing assessments of risk for an individual who has offended sexually, it is generally held that actuarial assessments are superior to unstructured clinical judgment (Barbaree, Seto, Langton, & Peacock, 2001; Hanson, 2000). Unlike unstructured clinical judgments, actuarial assessments are based on an objective scoring system for a fixed number of risk factors. Additionally, the risk factors included in most actuarial systems have been identified through an examination of follow-up research with large samples of individuals. Furthermore, for a scale to be actuarial, the resultant total score must correspond to a probabilistic estimate of risk over a fixed time period (e.g., 30% likelihood of being charged for a sexual reoffense over a 5-year period).

Clinicians working with adults who have committed a sexual offense have access to a number of actuarial risk-estimation tools that have been studied empirically such as the Static-99 (Hanson & Thornton, 1999), the Rapid Risk Assessment of Sexual Offense Recidivism (RRASOR; Hanson, 1997), the Sex Offender Risk Appraisal Guide (SORAG; Quinsey, Harris, Rice, & Cormier, 1998), and the Minnesota Sex Offender Screening Tool—Revised (MnSOST-R; Epperson, Kaul, & Hesselton, 1998). Although the total scores derived from these actuarial tools are based primarily on static, or historical, variables that cannot be altered in treatment, there has been a recent interest in developing actuarial tools that evaluate risk based on dynamic, or potentially changeable, risk factors (e.g., The Sex Offender Need Assessment Rating [SONAR; Hanson & Harris, 2000]).

Juveniles represent approximately 20% of all those charged with a sexual offense in North America (Federal Bureau of Investigations, 1993; Statistics Canada, 1997); however, there has been surprisingly little published research regarding sexual-assault recidivism for this group. As such, there has not yet been enough published research to develop, refine, and test actuarial tools to assess the risk of a sexual reoffense. Hanson (2000) noted, however, that “in the murky, initial stages, simply identifying relevant risk factors is a significant advance” (p. 5). Identified risk factors could then be used to inform clinical decisions in what Hanson (2000) has called an empirically guided, clinical judgment. This is the approach to risk assessment for adults used by Boer, Hart, Kropp, and Webster (1997) in the Sexual Violence Risk-20 (SVR-20). Unlike actuarial scales, there are no fixed rules for tallying risk scores using this approach, and there is no link between a total score and a specific probability of a reoffense. As such, the overall determination of risk using any empirically guided scale remains a clinical judgment. The advantage of empirically guided clinical judgment in comparison to unstructured clinical prediction is that there is the promise of higher accuracy given the scientific evidence to support the risk factors being evaluated. Furthermore, the empirically guided approach is more systematic and should lead to better agreement among professionals (Boer et al., 1997).

Perhaps the best-known, empirically guided, risk-assessment checklist is the Historical–Clinical–Risk (HCR-20; Webster, Douglas, Eaves, & Hart, 1997); a checklist for estimating the risk of future violence with adults. A number of

investigations have been conducted regarding the psychometric properties of this assessment tool, and findings have generally been quite supportive. In one prospective study, for example, it was found that a total score created from the checklist could predict future violence with moderate efficiency (area under the receiver operating characteristic [ROC] curve = .80) for a sample of 193 adults (Douglas, Ogloff, Nicholls, & Grant, 1999). Similarly, using postdictive file review data from a sample of 40 adults in a forensic hospital, a total score created from the Swedish translation of the HCR-20 produced an area under the ROC curve of .80 with respect to the prediction of recidivism status (Strand, Belfrage, Fransson, & Levander, 1999).

The SVR-20 was designed in a similar fashion (and by some of the same authors) as the HCR-20. Like the HCR-20, the SVR-20 is a structured checklist of 20 risk factors; however, the focus of the SVR-20 is to estimate the risk of a sexual reoffense for an adult. In a recent investigation, Dempster and Hart (2002) found that total scores based on the three classes of risk factors in the SVR-20—offense history, fixed psychosocial, and variable—were significantly correlated with both violent and sexual assault recidivism in a retrospective study with 95 adult males who had offended sexually.

The Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2000) was also developed based on the HCR-20 and associated risk-assessment instruments. The 24-item SAVRY is designed to provide an estimate of the risk of future general violence for youth aged 12–18. In one retrospective study of 104 adolescents, significant variability in the level of past violent versatility was accounted for ( $R^2 = .21$ ) by an artificially created Total SAVRY risk score (Bartel, Forth, & Borum, 2001). In another investigation, retrospective file data were collected for 108 male adolescents, and a total score computed from the SAVRY resulted in an area under the ROC curve of .70 for violent recidivism (McEachran, 2001).

It would appear that there is building empirical support for the empirically guided, risk-assessment approach to estimating future violence. On the other hand, however, it is interesting to note that most of the validation research that is available is not based on the final, clinical risk rating (e.g., low, moderate, or high). Rather, researchers have almost exclusively relied on an artificially created total score in statistical analyses. For those unfamiliar with these risk-assessment tools, there is no formal scoring protocol, and users are not advised to tally the number of risk factors present. The checklists simply serve as a guided checklist from which the evaluators form a clinical judgment. Although the validation data presented to date are encouraging, one might reasonably argue that it would be helpful for those doing validation studies with these instruments to compare the predictive validity of the overall clinical rating of risk (e.g., low, moderate, or high) to any artificially created total score(s). It may be the case that, for at least some of these scales, an arithmetic scoring system may lead to greater interrater agreement and predictive accuracy.

### **The Juvenile Sex Offender Assessment Protocol (J-SOAP)**

The Juvenile Sex Offender Assessment Protocol (J-SOAP; Prentky & Righthand, 2001) was first developed in 1994, and it was the only structured risk-assessment checklist—with explicit scoring instructions—for those working with adolescents who offend sexually. Prentky, Harris, Frizzell, and Righthand (2000) published preliminary psychometric data on the J-SOAP; a 23-item checklist designed to assess the risk of a sexual reoffense for males aged 12–18 years. Although Prentky et al. originally described the J-SOAP as an actuarial tool, there are as yet no published data that would link the Total score to a probabilistic estimate of reoffending. As such, the J-SOAP is a structured checklist of risk factors rather than an actuarial tool, per se. It is important to stress, however, that the authors are actively collecting prospective follow-up data so that the J-SOAP will function as an actuarial tool in the future.

Prentky et al. designed the J-SOAP to be a good measure of “impulsive, aggressive, conduct-disordered behavior” (Prentky & Righthand, 2001, p. 1) in addition to sexual reoffense risk; therefore, there are many items in the J-SOAP related to the risk of general juvenile delinquency. Indeed, Prentky et al. (2000) reported a substantial Pearson correlation of .91 between the Total score from the J-SOAP and the Total score from the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 1994): a measure of risk for general juvenile delinquency. Based on preliminary psychometric data from archival data, the authors have revised the original 23-item measure. Prentky and Righthand (2001) presented very encouraging results regarding their revised, 26-item measure with respect to interrater agreement, internal consistency, and item–total correlations. There have also been some promising results presented regarding the postdictive validity of modified J-SOAP scores based on archival data (Hecker, Scoular, Righthand, & Nangle, 2002; Waite, Pinkerton, Wieckowski, McGarvey, & Brown, 2002).

The J-SOAP was designed such that it could be coded from archival data, and the majority of the items are static, or historical, in nature. It is not likely, therefore, that risk ratings from the J-SOAP would be very sensitive to changes resulting from offense-specific treatment; although, it should be stressed that this was not the stated purpose of the J-SOAP. We (Worling & Curwen, 2000b) believed that it might be beneficial to develop a risk-assessment tool for use by assessors conducting real-time, clinical assessments. Furthermore, our aim was to produce a tool that could assist clinicians to assess dynamic, or potentially alterable, variables that would be targeted in specialized treatment for adolescents and their families.

### **The Estimate of Risk of Adolescent Sexual Offense Recidivism (The ERASOR)**

The ERASOR was modeled after the HCR-20 and SVR-20 and was designed to assist evaluators to estimate the risk of a sexual reoffense for individuals aged

12–18. As such, it was not crafted to provide answers to other potentially interesting questions such as estimating which adolescents are most likely to commit a sexual assault in the first place or determining criminal culpability for an adolescent accused of a sexual offense. Furthermore, the final risk estimate derived from using the ERASOR is short-term (i.e., at most 1 year) and should not be used to address questions related to long-term risk. This is based on the fact that (i) 12- to 18-year-olds are still rapidly developing with respect to many areas of functioning such as sexual, social, familial, and cognitive, (ii) the recidivism data in the published literature are typically based on mean follow-up periods of under 3 years, and (iii) 16 of the 25 risk factors in the ERASOR are dynamic and, therefore, must be reassessed following marked change or the passage of time.

### Development of the ERASOR

To select risk factors for inclusion in the ERASOR, we (Worling & Curwen, 2000b) relied primarily on three sources of information: published studies of adolescent sexual-offense recidivism, published checklists and guidelines regarding the clinical judgment of risk and/or protective factors for adolescents who sexually offend, and the vast literature amassed with respect to adult sexual offense recidivism. At the time of scale development, in 2000, we found only 10 published studies (see Table I) of adolescent sexual offense recidivism in which investigators examined the relationship between sexual-offense recidivism and some other variable. Although there were additional published studies in which sexual-offense recidivism was assessed, the authors of these other investigations did not examine recidivism in relation to any other variable as the focus was solely to assess treatment outcome. In addition to these 10 studies of adolescents who had offended sexually, we also used two reviews of the literature of studies of juvenile violent recidivism that included sexual reoffending (Lipsey & Derzon, 1998; Loeber, 1990).

The clinical guidelines and checklists that were used were those developed by a number of expert clinicians in North America and the UK. In particular, we relied on the clinical insights of Bremer (1998), Calder, Hanks, and Epps (1997), Epps (1997), Lane (1997), Perry and Orchard (1992), Prentky et al. (2000), Ross and Loss (1991), Steen and Monnette (1989), and Wenet and Clark (1986). These published guidelines and checklists for assessing risk and/or protective factors are currently used by many clinicians to address questions of placement, treatment, and risk to reoffend sexually.

It was also important to examine the wealth of data amassed with reference to adult sexual offense recidivism. Although adolescents have many unique developmental features that differentiate them from adults, and some know risk factors for adults (e.g., married vs. single; age over 24 vs. under 24) would be nonsensical to use with adolescents, some of the information regarding sexual and interpersonal

Table I. Adolescent Sexual Offense Recidivism Studies Used to Select Risk Factors

Study	Country	Number and gender of participants	Age of participants (in years)	Length of follow-up	Sexual assault recidivism measure
Borduin, Henggeler, Blaske, and Stein, 1990	United States	16 males	$M = 14$	$M = 3$ years	Charges
Hagan and Cho, 1996	United States	100 males	12-19	2-5 years	Convictions
Kahn and Chambers, 1991	United States	221 (ratio of males to females 20:1)	8-18	$M = 20$ months	Convictions
Lab, Shields, and Schondel, 1993	United States	151 males 1 female	$M = 14.7$ $M = 14$	1-3 years	Convictions
Långström and Grann, 2000	Sweden	44 males 2 females	15-20 $M = 18.13$	$M = 60.95$ months	Convictions
Rasmussen, 1999	United States	167 males 3 females	7-18 $M = 14$	5 years	Convictions
Schram, Malloy, and Rowe, 1992	United States	197 males	$M = 14.5$	5 years	Charges
Sipe, Jensen, and Everett, 1998	United States	124 males	11-18	$M = 6$ years	Adult charges
Smith and Monastersky, 1986	United States	112 males	10-16 $M = 14.1$	$M = 28$ months	Charges
Worling and Curwen, 2000a	Canada	139 males 9 females	12-19 $M = 15.5$	2-10 years $M = 6.23$ years	Charges

functioning was assumed to be overlapping. For example, it was anticipated that some risk factors for adults, such as sexual interest in prepubescent children and general impulsivity, would also be important to consider for adolescents. For information regarding adult sexual offense recidivism, we relied on the following sources: Hanson and Bussière's (1998) meta-analysis of recidivism research with primarily adult males; best-practice guidelines regarding risk assessment published by The Association for the Treatment of Sexual Abusers (Hanson, 2000); actuarial risk-assessment scales for adults (MnSOST-R, RRASOR, SONAR, SORAG, Static-99); and the SVR-20.

A pilot version of the ERASOR (Worling & Curwen, 2000b; Version 1.2) was developed for circulation to colleagues for critical feedback and to field test with clinicians at the Sexual Abuse: Family Education and Treatment (SAFE-T) Program in Toronto. In the original version, we identified 23 risk factors and devised structured coding procedures. After pilot testing and feedback, however, the scale was revised slightly as follows: 18 items remained the same, 4 were revised slightly to enhance interrater agreement, 1 item was dropped, and 4 new items were added to address risk factors that were believed to be important but that were missed in the original version. The 25 risk factors included in the second and most recent version of the ERASOR (Version 2.0; Worling & Curwen, 2001) fall into five categories: (1) Sexual Interests, Attitudes, and Behaviors, (2) Historical Sexual Assaults, (3) Psychosocial Functioning, (4) Family/Environmental Functioning, and (5) Treatment (see Table II). It is important to note that there is also provision for an "Other Factor" when case-specific risk factors should be considered. For example, it may be that a particular adolescent presents greatest risk when under the influence of drugs or alcohol, and that current substance use/abuse would be important to consider. Similarly, if an adolescent states that he or she is very likely to reoffend sexually, this should obviously be taken into consideration. The 9 Historical Sexual Assaults items are static, whereas the remaining 16 items are potentially dynamic, and are coded using a 6-month recency time frame. The ERASOR coding manual contains information regarding the rationale for the inclusion of each risk factor together with the specific coding instructions to determine whether risk factors are *Present*, *Possibly or Partially Present*, *Not Present*, or *Unknown*.

### Present Investigation

The purpose of this study was to collect preliminary psychometric data on this newly-developed, risk-estimation tool. Given that clinical judgment is central to making risk estimates using empirically guided scales such as the ERASOR, interrater agreement was a particular focus of this study. Although many authors present interrater agreement statistics for only a total score or for an overall risk rating, interrater agreement was calculated for each of the 25 risk factors in this investigation.

Table II. Item-Total Correlations and Endorsement Patterns of ERASOR Items

ERASOR risk factors ( <i>n</i> = 136)	Item-total <i>r</i>	% Present	% Possibly or		% Not Present	% Unknown
			Partially Present	Present		
<i>Sexual Interests, Attitudes, and behaviors</i>						
1. Deviant sexual interests (younger children, violence, or both)	.39**	36.0	17.6	36.0	10.3	
2. Obsessive sexual interests/preoccupation with sexual thoughts	.45**	27.9	22.1	37.5	12.5	
3. Attitudes supportive of sexual offending	.44**	25.0	25.0	42.6	7.4	
4. Unwillingness to alter deviant sexual interests/attitudes	.60**	17.6	19.1	54.4	8.8	
<i>Historical Sexual Assaults</i>						
5. Ever sexually assaulted 2 or more victims	.30**	72.8	2.9	21.3	2.9	
6. Ever sexually assaulted same victim 2 or more times	.13	78.7	2.9	12.5	5.9	
7. Prior adult sanctions for sexual assault(s)	.37**	55.1	3.7	39.7	1.5	
8. Threats of, or use of, violence/weapons during sexual offense	.09	15.4	15.4	58.1	11.0	
9. Ever sexually assaulted a child	.17*	83.8	2.2	12.5	1.5	
10. Ever sexually assaulted a stranger	.25**	4.4	2.2	83.8	9.6	
11. Indiscriminate choice of victims	.54**	50.0	2.9	41.9	5.1	
12. Ever sexually assaulted a male victim (male adolescents only)	.31**	58.1	6.6	31.6	2.9	
13. Diverse sexual-assault behaviors	.37**	72.1	10.3	13.2	4.4	
<i>Psychosocial Functioning</i>						
14. Antisocial interpersonal orientation	.62**	55.1	20.6	23.5	0.7	
15. Lack of intimate peer relationships/social isolation	.48**	47.1	17.6	33.8	1.5	
16. Negative peer associations and influences	.49**	32.4	11.8	51.5	4.4	
17. Interpersonal aggression	.48**	31.6	19.9	39.0	9.6	
18. Recent escalation in anger or negative affect	.42**	35.3	14.7	41.9	8.1	
19. Poor self-regulation of affect and behavior	.53**	43.4	19.1	36.8	0.7	
<i>Family/Environmental Functioning</i>						
20. High-stress family environment	.35**	50.7	24.3	20.6	4.4	
21. Problematic parent-offender relationships/parental rejection	.49**	50.0	16.9	30.9	2.2	
22. Parent(s) not supporting sexual-offense-specific assessment/treatment	.37**	24.3	19.1	47.8	8.8	
23. Environment supporting opportunities to reoffend sexually	.02	11.8	16.2	63.2	8.8	
<i>Treatment</i>						
24. No development or practice of realistic prevention plans/strategies	.34**	57.4	16.2	25.7	0.7	
25. Incomplete sexual-offense-specific treatment	.32**	69.9	8.8	21.3	0.0	

\*  $p < .05$ . \*\*  $p < .01$ .



Other statistics commonly examined in scale construction (e.g., item–total correlations and internal consistency estimates) were also calculated to provide further information regarding the risk factors included.

With respect to validity, an ideal test of predictive accuracy for any risk-estimation tool is to examine prospective follow-up data. Given that the present version of the ERASOR (Version 2.0) was developed in 2001, however, these data are not yet available. Of course, even if these data were available, there are a number of significant methodological restrictions with prospective follow-up studies of recidivism. Most important is the fact that official recidivism data are significant underestimates of offending given that they are dependent on a number of uncertain variables such as victimized individuals disclosing the sexual offenses to authorities in the first place, police investigating the crime, police laying a criminal charge of a sexual nature, the timely and accurate entry of the sexual-offense charge into a database, and access to the database by the researcher. Further, if the researcher uses criminal convictions as the outcome measure, then the data are additionally dependent on the outcome of the judicial process.

Thornton (2002) eloquently argued that an alternative approach to evaluating the validity of any risk-estimation scheme is to compare those individuals who are being assessed after they have previously been sanctioned for a prior sexual assault (“repeaters”) to those individuals who are being identified for the first time (“nonrepeaters”). This is *not* a comparison of those who have a history of previous offenses to those who have somehow been caught for their very first sexual offense. Rather, the critical difference is that one group of adolescents has, historically, committed sexual offenses after previously being detected and sanctioned; the other group has committed sexual offenses but have now just been detected and sanctioned—thus, they do not have previous sanctions for sexual offenses in their history. This approach to examining the predictive validity of risk factors for sexual assault recidivism has been used in investigations of both adults (Thornton, 2002) and adolescents (Kenny, Keogh, & Seidler, 2001) with a sexual-offense history. Of course, there are certainly limitations of this approach to examining recidivism. For example, there may be some individuals in the nonrepeater group who have indeed committed sexual offenses after being sanctioned and, therefore, who should be in the repeater group. On the other hand, if group differences are observed using this methodology, then this confound only serves to underscore the strength of any observed differences. Another potential limitation to examining scale validation using this definition of recidivism is that there could potentially be some scale items that are statistically confounded with repeater status, and this could lead to spuriously inflated differences between the groups. Although there are certainly limitations to both approaches to defining recidivism, a stronger case can be made regarding the predictive validity for any risk-estimation procedure when prospective follow-up data are collected. Research is currently underway in this regard with the ERASOR in Canada, the United States, and Europe.

## METHOD

### Participants

Risk estimates were collected for 136 adolescent males who were assessed at one of several community-based agencies in the Greater Toronto Area ( $n = 45$ ) or at a specialized residential treatment center in Minnesota ( $n = 91$ ). Females were not specifically excluded from this study; however, the residence in Minnesota offers treatment to males only, and the first 45 adolescents rated at the community-based agencies were male. The adolescents ranged in age from 12 to 18 years ( $M = 14.93$ ;  $SD = 1.67$ ), and all acknowledged their sexual offense(s) and/or had been convicted of their sexual offense(s). The ERASOR ratings were collected for a group of adolescents assessed at the point of intake (58%), adolescents assessed mid-way through specialized treatment (18%), or a group of adolescents assessed at discharge (24%). Data regarding changes in ERASOR ratings as a function of treatment were not available at the time of this study; however, this will be the focus of future investigations. The ERASOR ratings were collected from 28 master's- or doctoral-level clinicians with training and supervised experience in sexual-offense-specific assessment and treatment with adolescents.

### Procedure

Prior to coding the ERASOR, all 28 clinicians participated in a day of training with the author regarding the scoring and use of the ERASOR. The focus of the training was on coding individual risk factors, deriving a final risk estimate (i.e., *low*, *moderate*, or *high*), clinical interviewing strategies, and the ethical issues involved in the formulation and communication of risk estimates (see Worling, 2002 for a discussion of the ethical issues involved). Unlike most research in this field which is based on file review, the present study used evaluators' ratings following actual clinical assessments. In all cases, these were comprehensive assessments that were focused on multiple areas of functioning (e.g., social, affective, familial, sexual) and involved multiple sources of information (e.g., clinical interviews, psychological testing, and document review).

Although some of the adolescents were assessed by clinicians working alone, most were assessed by pairs of clinicians. In some instances, both clinicians were directly involved in all interviews with the adolescent and his family; however, in most cases, clinicians divided the work such that one clinician assessed primarily the adolescent's family and the other focused primarily on the adolescent. As per the instructions provided, clinicians first completed ratings independently and subsequently met to discuss their ratings to produce a combined rating for use in the final assessment report.

It is stressed in the ERASOR coding manual that there is as yet no scoring algorithm to derive the final estimate of risk. The overall risk estimate is a clinical judgment that is guided by both the number *and* combination of risk factors that are present for each adolescent. Users are cautioned that although there is expected to be a positive relationship between the number of risk factors present and overall risk, there may be adolescents with even 1 factor present—such as self-reported intent to reoffend—who would be judged to be at high risk to reoffend sexually. Solely for the purposes of the present study, however, and after ratings were collected from clinicians, a Total score was subsequently calculated by me to facilitate statistical analyses. Specifically, clinician ratings were numerically coded as follows: *Present* = 2; *Possibly/Partially Present* = 1; *Not Present/Unknown* = 0. The *Unknown* coding category was collapsed together with the *Not Present* category, in part, as a result of the low frequency of endorsement of the *Unknown* category (see Results).

## RESULTS

### Item Endorsement and Reliability

The percentage-endorsement pattern for each of the ERASOR items is displayed in Table II. It is interesting to note that the *Unknown* coding category was endorsed, on average, only 5.4% of the time. This suggests that clinicians most often believed that they had sufficient information to provide a rating for each risk factor. As might be expected, there was more certainty (i.e., either *Present* or *Not Present*) in the ratings for the static, Historical Sexual Assault risk items. Specifically, the coding category *Possibly or Partially Present* was endorsed, on average, only 5.5% of the time for the 9 static factors whereas this category was endorsed 18.1% of the time, on average, for the 16 dynamic risk factors. It is also apparent from Table II that most of the adolescents in this investigation committed repeated sexual assaults involving diverse sexual-assault behaviors against two or more victims. Furthermore, most of the adolescents in this study committed a sexual assault against someone known to them, and the majority offended against a prepubescent child who was generally 4 or more years younger than the adolescent and under the age of 12.

For 104 of the adolescents, both independent and combined ratings were available from pairs of clinicians who had been involved in each assessment. As these clinician pairings were random, the intraclass correlation coefficient (ICC) used was based on the one-way, random-effects ANOVA model (Shrout & Fleiss, 1979). The single- and average-rating ICCs for each of the ERASOR factors and the overall risk rating (i.e., *high*, *moderate*, or *low*) are listed in Table III. Note that the average-rating ICC was at or above .60 for all but one factor, and the average-rating ICC for the overall clinical risk estimate (*low*, *moderate*, or *high*)

**Table III.** ERASOR Interrater Agreement Based on Ratings From 28 Clinicians

ERASOR risk factors ( <i>n</i> = 104)	ICC (single rating)	ICC (average rating)
<i>Sexual Interests, Attitudes, and Behaviors</i>		
1. Deviant sexual interests (younger children, violence, or both)	.75	.86
2. Obsessive sexual interests/Preoccupation with sexual thoughts	.63	.78
3. Attitudes supportive of sexual offending	.62	.76
4. Unwillingness to alter deviant sexual interests/attitudes	.63	.77
<i>Historical Sexual Assaults</i>		
5. Ever sexually assaulted 2 or more victims	.80	.89
6. Ever sexually assaulted same victim 2 or more times	.73	.84
7. Prior adult sanctions for sexual assault(s)	.52	.69
8. Threats of, or use of, violence/weapons during sexual offense	.76	.86
9. Ever sexually assaulted a child	.77	.87
10. Ever sexually assaulted a stranger	.83	.91
11. Indiscriminate choice of victims	.78	.88
12. Ever sexually assaulted a male victim ( <i>male adolescents only</i> )	.92	.96
13. Diverse sexual-assault behaviors	.52	.68
<i>Psychosocial Functioning</i>		
14. Antisocial interpersonal orientation	.74	.85
15. Lack of intimate peer relationships/Social isolation	.77	.87
16. Negative peer associations and influences	.60	.75
17. Interpersonal aggression	.74	.85
18. Recent escalation in anger or negative affect	.40	.60
19. Poor self-regulation of affect and behaviour (Impulsivity)	.69	.82
<i>Family/Environmental Functioning</i>		
20. High-stress family environment	.54	.70
21. Problematic parent-offender relationships/parental rejection	.68	.81
22. Parent(s) not supporting sexual-offense-specific assessment/treatment	.40	.57
23. Environment supporting opportunities to reoffend sexually	.60	.74
<i>Treatment</i>		
24. No development or practice of realistic prevention plans/strategies	.79	.88
25. Incomplete sexual-offense-specific treatment	.86	.92
Overall rating ( <i>low, moderate, high</i> )	.85	.92

Note. ICC = Intraclass correlation coefficient.

was .92. These results suggest that there is acceptable interrater agreement for most of the individual risk factors and considerable interrater agreement for the overall clinical risk estimate.

Some authors calculate estimates of internal consistency as evidence of test reliability. It should be noted that “reliability” typically refers to the level of agreement between repeated assessments of a particular testing domain. Internal consistency, on the other hand, is essentially a correlation between two random halves of an item pool and has little to do with the repeatability of a test. However, for those readers interested in internal consistency findings, the estimate of internal consistency for the Total ERASOR score ( $n = 136$ ) was .75,  $F(24, 3216) = 35.48$ ,  $p < .001$ .

Another statistic of interest in scale development and validation is the item–total correlation: a measure of the contribution that each item makes to the total score. The item–total correlations for the ERASOR are displayed in Table II, and it can be seen that there were adequate item–total correlations ( $r \geq .25$ ;  $p < .01$ ) for 21 of the 25 risk factors. The four risk factors that contributed little to the artificially created Total score were: #6: Ever sexually assaulted same victim 2 or more times, #8: Threats of, or use of, violence/weapons during sexual offense, #9: Ever sexually assaulted a child, and #23: Environment supporting opportunities to reoffend sexually. There was also no significant correlation between the scores for these four risk factors and the overall risk rating (i.e., *low*, *moderate*, or *high*), all Kendall's tau-*bs*  $< .05$ , all *ps*  $> .05$ .

It is noted in the coding manual that there is likely a positive relationship between the overall risk rating (i.e., *high*, *moderate*, or *low*) and the number of risk factors coded as *Present*. For the clinical ratings made jointly by clinicians ( $n = 104$ ), the Pearson correlation between the overall risk rating and the number of risk factors rated as *Present* was 0.68,  $p < .001$ . Therefore, it would appear that the absolute number of risk factors present accounted for just 46% of the variability in assigning risk categories. The mean number of risk factors rated as *Present* for the adolescents rated as *low*, *moderate*, and *high* risk was 5.4 ( $SD = 1.8$ ), 9.1 ( $SD = 2.8$ ), and 13.4 ( $SD = 2.9$ ), respectively. Using the Tukey HSD test, these means were significantly different from one another ( $p < .001$ ). The Total scores were also significantly different among those adolescents rated as *low* ( $n = 13$ ;  $M = 12.92$ ;  $SD = 4.39$ ), *moderate* ( $n = 50$ ;  $M = 21.4$ ;  $SD = 5.07$ ), and *high* ( $n = 73$ ;  $M = 30.57$ ;  $SD = 5.65$ ),  $F(2, 133) = 84.06$ ,  $p < .001$ . Tukey's HSD tests revealed that these three mean Total scores were significantly different from one another ( $ps < .001$ ).

### Validity

To address questions regarding recidivism, adolescents were classified into one of two groups: (1) those assessed for a sexual assault that occurred after they had already been caught and sanctioned by an adult (i.e., parent, teacher, police officer, or child-protection worker) for a previous sexual offense (“repeaters”) or (2) adolescents who were being assessed without a history of an adult sanction for a prior sexual assault (“nonrepeaters”). It is important to note, once again, that this was *not* a comparison of adolescents committing their first sexual offense to adolescents who had committed multiple offenses. Rather, the distinction herein was based on whether or not the adolescents had, historically, continued to commit offenses despite being detected and sanctioned by an adult. With respect to the history of multiple sexual offenses, it should be pointed out that the majority of *both* the nonrepeaters (71%, or 40/56) and the repeaters (81%, or 65/80) had

committed *multiple* sexual offenses against a single victim (ERASOR factor #6),  $\chi^2(1, N = 136) = 2.83, p > .05$ .

The area under the ROC curve was calculated for both the Total score and the clinical rating (*low*, *moderate*, or *high*) with respect to group membership (repeater vs. nonrepeater). To ensure that the largest sample was used for this analysis, the 136 single-assessor ratings were used. The ROCKIT software (version 0.9B; Metz, Herman, & Roe, 1998) was used both to calculate ROC curve values and to compare the two ROC curve values using the  $z_{\Delta}$  statistic. The ROC curve areas for the Total score and the clinical rating were .72 (95% CI = .62 to .80;  $p < .01$ ) and .66 (95% CI = .55 to .76;  $p < .01$ ), respectively, and there was no significant difference in predictive efficiency,  $z_{\Delta} = -1.27, p > .05$ . These preliminary data suggest that the ERASOR may assist clinicians to discriminate adolescents who have, for the first time, been detected for their sexual offenses from those who have sexually reoffended despite being sanctioned by an adult for a prior sexual assault.

Another potential source of evidence for the validity of the ERASOR is to compare the ratings of those adolescents assessed at time of discharge from specialized, offense-specific treatment to those assessed earlier. Given that many of the dynamic risk factors in the ERASOR should be targeted and altered in treatment, adolescents assessed at the time of discharge should have lower ratings. There was a significant difference in Total scores for adolescents rated at intake ( $n = 79$ ) versus those assessed mid-treatment ( $n = 24$ ) versus adolescents rated only at discharge ( $n = 33$ ),  $F(2, 133) = 4.9, p < .01$ . Tukey's HSD tests revealed that although there was no significant difference between those adolescents rated at intake ( $M = 25.77$ ;  $SD = 8.6$ ) versus those rated at mid-treatment ( $M = 28.87$ ;  $SD = 5.7$ ), both of these groups had significantly higher Total scores than did those adolescents rated at the time of discharge from treatment ( $M = 22.36$ ;  $SD = 7.0$ ). There was also a significant difference between those assessed at time of discharge and those assessed prior to treatment completion when using the 3-point risk ratings (i.e., *low*, *moderate*, or *high*),  $\chi^2(2, N = 136) = 13.55, p < .001$ .

Finally, the Total scores for those adolescents residing in a specialized residential treatment facility for high-risk/high needs youth were compared to scores for those adolescents assessed at community-based agencies. The youth assessed at the community-based agencies resided in family homes, foster homes, or nonspecialized group homes. As would be expected, Total scores for adolescents in the residential treatment facility ( $M = 27.63$ ;  $SD = 7.11$ ) were significantly higher than were the Total scores for those adolescents assessed at the community-based agencies ( $M = 20.88$ ;  $SD = 7.86$ ),  $F(1, 134) = 24.78, p < .001$ . One-way ANOVAs were calculated to examine this further, and the adolescents in the residential treatment center had significantly higher (all  $ps < .05$ ) mean ratings on 14 of the 25 risk factors. Furthermore, the overall clinical risk ratings (i.e., *low*, *moderate*, or *high*) were significantly different depending on the setting of the assessment,

$\chi^2(2, N = 136) = 14.04, p < .001$ . Adolescents attending community-based settings were much more likely to be rated as *low* (22% or 10/45) or *moderate* (38% or 17/45) risk as opposed to *high* risk (40% or 18/45). The reverse was true for those adolescents in the specialized residential setting, as they were more often rated as *high* risk (60% or 55/91) rather than as *moderate* (36% or 33/91) or *low* risk (3% or 3/91).

## DISCUSSION

The ERASOR was designed as an empirically guided, risk-assessment tool for clinicians to estimate the short-term risk of a sexual reoffense for 12- to 18-year-old youth who have committed a sexual offense. To assess the psychometric properties of the ERASOR, risk ratings were collected from 28 masters' and doctoral-level therapists who had completed comprehensive clinical assessments of 136 adolescent males. With respect to interrater agreement, the data were generally quite supportive; both for the overall clinical rating of risk (*low*, *moderate*, and *high*) and for most of the individual risk factors. This level of interrater agreement was particularly encouraging given that ratings were generated by evaluators following real-time, comprehensive assessments rather than from selected file-review material or test responses. Furthermore, unlike most investigations of interrater agreement in which two trained judges have access to identical information, pairs of clinicians in this study most often divided their assessments such that one clinician focused more on the adolescent whereas the other focused more on the adolescent's family members. It is likely that the level of interrater agreement would have been even higher had the clinician pairs had access to identical information. Future research will have to be undertaken to establish whether this is indeed the case.

Despite these generally positive findings, there were three items with suboptimal interrater agreement: #13 Diverse sexual-assault behaviors; #18 Recent escalation in anger or negative affect, and #22 Parent(s) not supporting sexual-offense specific assessment/treatment. Although it is not clear why item #13 performed poorly, several therapists who provided ratings for this investigation later noted that part of the difficulty in rating the items related to the youth's current emotional functioning (#18) and the level of parental support (#22) is the fact that clinicians often do not have access to the same information. This would, of course, impact on the other risk factors as well; however, these two items were identified as particularly challenging for a therapist to rate unless they had directly participated in all of the interviews with the adolescent and his parent(s). As such, it may be instructive to examine interrater agreement for these items when clinicians are provided with the identical material to rate. If this does not increase interrater agreement, then it will be necessary to alter the coding instructions for these items or, ultimately, to drop these items altogether in any future revision.

Item–total correlations were also acceptable for most of the risk factors, and the estimate of internal consistency was significant. These results are supportive of the overall item composition of the ERASOR. On the other hand, 4 of the 25 items had very low item–total correlations, and these items also had no significant bearing on either overall risk rating or repeater status (repeater vs. nonrepeater). Before removing these items from any revised version of the ERASOR, however, it will be important to determine whether or not these four variables perform similarly in any replications and, more importantly, whether or not these variables are related to prospectively measured sexual assault recidivism. In a recent study of 15- to 20-year-olds—with a mean follow-up period of 9 years and a sexual-assault recidivism rate of 30%—Långström (2002) found that the past use of threats or force and a history of sexual offenses against children under 12 were not predictive of subsequent convictions for sexual offending. With more empirical evidence such as this, it may be that these variables should be removed. Indeed, with any empirically guided approach to risk assessment, it will be essential to ensure that new research findings are used to modify the risk factors that are included.

There was also some tentative support for the validity of the ERASOR in this investigation. Specifically, it was found that both the overall clinical rating (i.e., *low*, *moderate*, or *high*) and the Total score significantly differentiated those adolescents known to have reoffended sexually following an adult sanction (repeaters) from those adolescents who did not have such a history (nonrepeaters). Furthermore, as one would anticipate, adolescents residing in a specialized residential treatment center for high-risk and high-needs youth were rated as higher risk, on average, than were adolescents residing in the community. It could be argued, of course, that those clinicians rating adolescents at a residential facility were predisposed to see the adolescents as higher risk than those clinicians rating adolescents attending community-based programs. Finally, adolescents rated at intake were rated as higher risk in comparison to those adolescents rated following the completion of specialized, offense-specific treatment. As above, however, clinician bias may also account for at least some of the difference in ratings. In other words, it is possible that clinicians under-reported risk factors for those adolescents who were rated at the conclusion of specialized treatment. These potential biases in ratings will have to be investigated in future studies.

Although these preliminary results are encouraging, a number of reservations should be highlighted. First, given that the ERASOR was designed to estimate *future* risk, it will be essential to collect *prospective* recidivism data to more accurately assess predictive validity. The preliminary data presented herein regarding recidivism status were not based on follow-up data; rather they were based on whether or not an adolescent had, historically, offended after being previously sanctioned for a sexual assault. As short-term, sexual-assault recidivism rates based on official data are typically quite low (for a variety of reasons including those listed earlier), this type of research will require large samples of adolescents.



Second, as with any new scale, it will be imperative for independent researchers to collect data in a similar fashion and to assess the reliability and validity of the ERASOR. Third, as is true for all empirically guided risk-assessment scales, some of the statistical support for this instrument was derived through analyses of an artificially created Total score—yet the ERASOR is not presently designed to yield a Total score for establishing risk levels. As such, it will be important for other researchers to focus on the reliability and validity of the clinical ratings (i.e., *low*, *moderate*, and *high*) in addition to any arithmetic formulae that are used. Furthermore, it will be critical to ensure that each of the risk factors adds unique information regarding prospectively measured risk to reoffend. As Rogers (2000) observed, an implicit assumption with empirically guided risk assessment approaches is that a higher number of risk factors corresponds directly to a higher risk level—despite the fact that many of the risk factors may be highly correlated. Perhaps this form of analysis will result in a shorter list of risk factors that are empirically linked to prospectively measured sexual assault recidivism. Finally, with the publication of new recidivism research, such as the long-term follow-up data provided by Långström (2002), we will have to adjust our empirically supported checklists accordingly. For example, although denial of the index sexual offense was once a popular “predictor” of sexual reoffending, the data published to date are not supportive of this assumption (Worling, 2002).

In our clinical work with an adolescent who has committed a sexual offense, we are continually balancing the risks and needs for both the adolescent and the community. There is also an increasing awareness in the field that adolescents who commit a sexual assault are heterogeneous with respect to most variables assessed—including the risk of a sexual reoffense—and that our assessments must be sensitive to the unique strengths, needs, and risk factors for each adolescent. Through more collaborative and systematic research regarding risk assessment, treatment outcome, and sexual-offense recidivism, there should be more empirical guidance to make clinical decisions that are fair and balanced for all concerned.

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