



January 2018

# The Predictive Validity Of The Static-99r And Stable-2007 In A Community Sample Of Sex Offenders

Amy Veith

Follow this and additional works at: <https://commons.und.edu/theses>

---

## Recommended Citation

Veith, Amy, "The Predictive Validity Of The Static-99r And Stable-2007 In A Community Sample Of Sex Offenders" (2018). *Theses and Dissertations*. 2373.

<https://commons.und.edu/theses/2373>

This Dissertation is brought to you for free and open access by the Theses, Dissertations, and Senior Projects at UND Scholarly Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UND Scholarly Commons. For more information, please contact [zeinebyousif@library.und.edu](mailto:zeinebyousif@library.und.edu).

THE PREDICTIVE VALIDITY OF THE STATIC-99R AND STABLE-2007 IN A  
COMMUNITY SAMPLE OF SEX OFFENDERS

by

Amy Catherine Veith  
Bachelor of Arts, University of Missouri-Columbia, 2013  
Master of Arts, University of North Dakota, 2015

A Dissertation  
Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Grand Fork, North Dakota


August  
2018

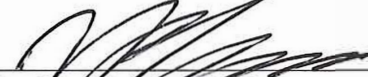
Copyright 2018 Amy Catherine Veith

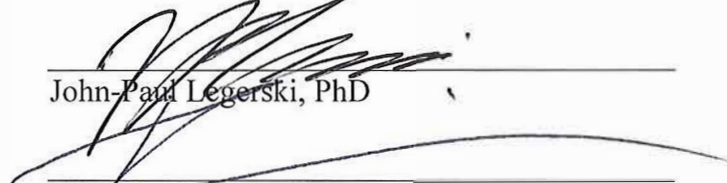
This dissertation, submitted by Amy Catherine Veith in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

  
\_\_\_\_\_  
Alan R. King, PhD

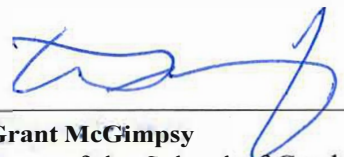
  
\_\_\_\_\_  
Richard Wise, PhD

  
\_\_\_\_\_  
F. Richard Ferraro, PhD

  
\_\_\_\_\_  
John-Paul Legerski, PhD

  
\_\_\_\_\_  
Andrew Quinn, LCSW, PhD

This dissertation is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

  
\_\_\_\_\_  
Grant McGimpsey  
Dean of the School of Graduate Studies

  
\_\_\_\_\_  
Date

## PERMISSION

Title           The Predictive Validity of the Static-99R and Stable-2007 in a Community  
Sample of Sex Offenders

Department   Psychology

Degree        Doctor of Philosophy

In presenting this dissertation in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that the library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my dissertation work or, in his absence, by the Chairperson of the department or the dean of the School of Graduate Studies. It is understood that any copying or publication or other use of this dissertation or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my or dissertation.

Amy Catherine Veith  
06/14/2018

## TABLE OF CONTENTS

|   |      |
|---|------|
| LIST OF TABLES .....  | viii |
| ACKNOWLEDGEMENTS.....   | ix   |
| ABSTRACT .....  | x    |
| CHAPTER   |      |
| I. INTRODUCTION .....   | 1    |
| History of Risk Assessment .....  | 3    |
| First Generation Risk Assessment: Subjective Professional<br>Judgment .....       | 4    |
| Second Generation Risk Assessment: Actuarial “Static” Risk<br>Assessment.....     | 5    |
| Third Generation Risk Assessment: Structured Professional<br>Judgment (SPJ) ..... | 7    |
| Structured Professional Judgments versus Actuarial Risk<br>Assessment .....       | 8    |
| Actuarial Versus Dynamic Factors: Static-99R and STABLE-2007 .....                | 9    |
| Static-99R .....  | 9    |
| STABLE-2007 .....   | 14   |
| Actuarial and Dynamic Data Integration .....                                      | 16   |
| Enhanced Prediction through the Static-99R and<br>STABLE-2007 .....               | 18   |
| Levels of Risk Integration .....  | 19   |
| II. CURRENT STUDY .....   | 21   |

|      |   |    |
|------|---|----|
| III. | METHOD .....                            | 24 |
|      | Participants and Procedure .....        | 24 |
|      | Materials .....                         | 25 |
|      | Demographic Information .....           | 25 |
|      | Risk Assessment .....                   | 25 |
|      | Recidivism .....                        | 25 |
|      | Analytic Strategy .....                 | 26 |
| IV.  | RESULTS .....                           | 28 |
|      | Descriptive Statistics .....            | 28 |
|      | Offender Age Considerations .....       | 29 |
|      | Follow-up Duration Considerations ..... | 29 |
|      | Static-99R Predictions .....            | 31 |
|      | Total Recidivism .....                  | 31 |
|      | General Recidivism .....                | 32 |
|      | Violent Recidivism .....                | 33 |
|      | Non-Contact Sexual Recidivism .....     | 33 |
|      | Contact Sexual Recidivism .....         | 34 |
|      | STABLE-2007 Predictions .....           | 35 |
|      | Total Recidivism .....                  | 35 |
|      | General Recidivism .....                | 36 |
|      | Violent Recidivism .....                | 37 |
|      | Non-Contact Sexual Recidivism .....     | 37 |
|      | Contact Sexual Recidivism .....         | 38 |

|   |    |
|---|----|
| Static-99R and STABLE-2007 Predictive Validity Summary.....                     | 38 |
| Combined Static-99R and STABLE-2007 Raw Score Predictions.....                  | 39 |
| Incremental Static-99R and STABLE-2007 Risk Classification<br>Predictions ..... | 40 |
| V.    DISCUSSION .....  | 42 |
| VI.   LIMITATIONS .....   | 47 |
| VII.  FUTURE DIRECTIONS .....   | 49 |
| REFERENCES .....  | 50 |



## LIST OF TABLES

| Table  | Page |
|--|------|
| 1. Dimensional Variable Descriptive Statistics .....                                       | 28   |
| 2. Static-99R and STABLE-2007 Follow-up Durations for Recidivists and Non-Recidivists..... | 30   |
| 3. Distribution of Recidivism Durations for Reoffending Subset.....                        | 30   |
| 4. Total Recidivism Frequencies by Static-99R Risk Classification .....                    | 32   |
| 5. General Recidivism Frequencies by Static-99R Risk Classification .....                  | 32   |
| 6. Violent Recidivism Frequencies by Static-99R Risk Classification.....                   | 33   |
| 7. Non-Contact Sexual Recidivism Frequencies by Static-99R Risk Classification .....       | 34   |
| 8. Contact Recidivism Frequencies by Static-99R Risk Classification .....                  | 34   |
| 9. Total Recidivism Frequencies by STABLE-2007 Risk Classification.....                    | 36   |
| 10. General Recidivism Frequencies by STABLE-2007 Risk Classification.....                 | 36   |
| 11. Violent Recidivism Frequencies by STABLE-2007 Risk Classification .....                | 37   |
| 12. Non-Contact Sexual Recidivism Frequencies by STABLE-2007 Risk Classification.....      | 38   |
| 13. Contact Sexual Recidivism Frequencies by STABLE-2007 Risk Classification.....          | 39   |
| 14. Summary of Static-99R and STABLE-2007 Dimensional and Categorical Analyses .....       | 39   |
| 15. Relative Risks of Recidivism as a Function of Static-99R and STABLE-2007.....          | 40   |
| 16. Combined Static-99R and STABLE-2007 Raw Scores as a Recidivism Predictor .....         | 40   |
| 17. Logistic Regression Raw Score and Classification Recidivism Predictions .....          | 40   |

## ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to the members of my advisory committee for their guidance and support during my time in the Clinical Psychology Doctoral Program at the University of North Dakota.

To my mom Pat, my Aunt Marilyn, and my brother Adam,  
Thank you for all of your support, encouragement, sacrifice, and guidance throughout  
this process

## ABSTRACT

The current study explored the accuracy of Static-99R and STABLE-2007 risk evaluations in predicting sex offender recidivism ( $n = 136$ ) over an average 7.8 year follow-up period. These protocols are differentiated on the basis of their reliance on actuarial versus dynamic risk factors respectively. The present analysis tested their predictive validity both independently and in combination with one another. It was hypothesized that the Static-99R and the STABLE-2007 would provide moderate predictive accuracy that would be enhanced by their combination. Support was not found for either hypothesis in regard to sexual recidivism, but the Static-99-R did show fair accuracy ( $AUC = .76, p = .008$ ) in predicting violent re-offenses. Raw scores from both protocols served as weak ( $AUCs \sim .61$ ) but statistically significant predictors of total recidivism. The occurrence of total recidivism was elevated substantially for offenders classified in either the Static-99R Moderate to High ( $RR = 3.4, p = .02$ ) or High ( $RR = 3.2, p = .04$ ) risk categories. The combination of Static-99R and STABLE-2007 scores generated a metric that was comparable in predictive accuracy to either used in isolation. The STABLE-2007 did not evidence any incremental validity not provided by the Static-99R in this sample. These results contribute to a growing literature regarding both the value and limitations of structured actuarial and dynamic risk assessments in the prediction of criminal recidivism. Both protocols were found to underachieve in their predictive validity in this small community-based ten-year outcome assessment. These results were discussed within the context of a number of research design limitations evident in this community sample analysis.

## **CHAPTER I**

### **INTRODUCTION**

Rape and other forms of sexual assault constitute a major concern within the criminal justice system. While rates of childhood sexual abuse have shown a steady decline since 1992 (Finkelhor & Jones, 2015), more than 150,000 cases of adult sexual assault continue to be reported and investigated annually by law enforcement (Bureau of Justice Statistics, 2015). The United States Department of Justice has estimated that these sex crimes represent only 30% of all those reported to authorities (Finkelhor, 2009). Given the continued prevalence of sexual crimes in the United States, legislative initiatives have been targeted at interventions intended to enhance public safety through community notification, sex offender registration, and civil commitment, among other methods for “sexually dangerous individuals” (Langton et al., 2007).

Professional response to legislative proposals resulted in creation and implementation of reliable and valid methods of risk assessment for sexual offenders. Best practices to assess the risk of sexual offense recidivism has evolved in recent decades. Historically, subjective professional judgment was relied upon to provide an estimate of the risk to recidivate amongst individuals convicted of a crime. The assessment process was idiosyncratic and has been challenged as evidence has mounted suggesting these predictions of recidivism to be only slightly better than chance (Hanson & Bussiere, 1998, Andrews & Bonta, 1995; Hanson & Thornton, 2000). In contrast, actuarial risk assessment is grounded in the empirical tradition and combines empirically validated static factors known to be correlated with sexual offending behavior and provides measures designed to coalesce these factors into one risk level.

Limitations of these assessments, namely lack of attention to the utility of these risk factors, resistance of modification, and counterintuitive indicators highlighted a need for improved functionality of risk assessment instruments (Harris & Hanson, 2010). An alternative approach to risk prediction was provided in the form of Structured Professional Judgment (SPJ). SPJs provide dynamic factors including disposition, historical antecedents, contextual antecedents, and clinical factors that are most relevant to risk management and treatment (Beech, Fisher, Thornton, 2003).

Previous research has investigated some of the benefits of combining actuarial and SPJ protocols into an integrated approach to risk assessment specifically within the context of violence risk assessment (Mills & Gray, 2013; Mills, Kroner, & Morgan, 2011). Similar investigation into sexual offending risk assessment has led to promising initial reports. Reviews of the dynamic risk factors comprising SPJs have found these variables to add incrementally to the predictive accuracy provided by static factors alone (Allan, Grace, Rutherford, & Hudson, 2007; Helmus, Babchishin, & Blais, 2011). Although static measures of risk are considered moderately accurate alone, they are not intended to provide direction for treatment, intervention areas, or evaluate changes in level of risk, which has led to the investigation of the addition of dynamic factors in risk assessment evaluations.

This dissertation summarizes available research regarding major actuarial (Static-99R) and SPJ (STABLE-2007) sex offender protocols. The predictive validity of each of these assessment measures will be tested in a sample of community sex offenders. An effort will be made to advance maximum recidivism predictive accuracy by combining data from these two protocols that differ in assessment strategy.

## **History of Risk Assessment**

The appropriate assessment of risk to recidivate is a crucial step in the judicial process as it is the basis for decisions with significant consequences for both offenders and the general public (Parent, Guay, & Knight, 2012). For example, the supervision of sex offenders within the criminal justice system is significantly influenced by their level of recidivism risk. High risk determination is associated with considerable restrictions of freedoms including civil commitment, lengthy probation sentences, and indeterminate registration requirements (Hanson & Thornton, 2000). In contrast, individuals who are found to be of low risk to recidivate may have shortened prison sentences and fewer restrictions placed on their probation statuses (Hanson & Thornton, 2000). In addition to safety and liberty concerns, accurate risk assessment also plays a vital role in the treatment options for offenders. In reviewing the risk-need-responsivity model, often utilized in prisons and community treatments centers in the United States, offenders who have been classified as “high risk” should be provided with intensive treatment, while offenders who have been classified as “low risk” should be provided with less stringent treatment curriculum and requirements in order to address their specific areas of need (Andrews & Bonta, 2010; Smid, Kamphuis, Wever, & Van Beek, 2014). The increasing importance of valid risk assessment in the judicial, correctional, and treatment arenas has led to the development, review, and implementation of risk assessment instruments designed specifically to assess risk and treatment needs for sex offenders.

Risk assessment and prediction has evolved out of decades of research and practice in the fields of forensic psychology and forensic psychiatry (Bonta, 1996; Doren, 2002; Hanson & Morton-Bourgon, 2007; Lussier & Davies, 2011). Forensic mental health experts are regularly called upon to provide accurate and informative predictions of risk for individuals who have

been convicted of criminal acts. Closer attention has been paid in recent years to the ability of these individuals to provide valid assessments, particularly in response to offenders who have committed violent crimes against others (Lussier & Davies, 2011). This increased importance is particularly salient when experts are called upon to assess individuals who have committed sexual offenses. Risk assessment of sexual offenders is catching up to the research base for general offenders and may be considered as occurring in three “generations” of assessment. The first generation risk assessment for sexual offenders involved subjective professional judgment provided by psychologists and psychiatrists, followed by the second wave of assessment protocols involving actuarial risk assessment based on static factors, and finally evolving once again (although not fully) into the third generation of risk assessment involving Structured Professional Judgment based on dynamic factors (Bonta, 1996).

### **First Generation Risk Assessment: Subjective Professional Judgment**

Historically, subjective professional judgments were the primary method of assessing an individual’s risk to reoffend. The assessment of risk to reoffend was provided by a clinician who would rely on expertise, intuition, and previous experience with offending populations. Subjective clinical impressions resulted in a variety of risk factors being examined, many of which were not based in research or weighted consistently across evaluators. This process was idiosyncratic, could not be considered reliable, and did not lend itself to replicability (Guay, 2006; Harris & Hanson, 2010; Bonta, 1996). As the need for accurate assessment began to grow, research into the current practices involved in risk assessment demonstrated that subjective professional judgments were only slightly better than chance at predicting risk to reoffend (Menzies et al., 1994; Quinsey & Ambtman, 1979, Bonta, 1996; Aegisdottir et al., 2006; Grove et al., 2000; Hanson & Morton-Bourgon, 2007). Concerns about this lack of predictive accuracy,



particularly when serious offenses were considered, provided the impetus needed to develop structured methods of risk assessment (Hanson & Thornton, 2000).

### **Second Generation Risk Assessment: Actuarial “Static” Risk Assessment**

The lackluster performance of subjective professional judgement ushered in the second generation of risk assessment, grounded in the empirical tradition. Actuarial or “static” risk assessments rely on static factors (i.e. factors that cannot change) including general criminal history, length of previous relationships, and sexual criminal history (Beech, Fisher, & Thornton, 2003). These measures provide a risk category (e.g., low, medium, high) that the offender falls within and subsequent judicial and treatment decisions can be extrapolated from (Beech, Fisher, & Thornton, 2003). Initial investigation into these measures provided consistent results indicating that for sexual-recidivism risk, subjective professional judgment is significantly outperformed by actuarial risk assessment measures (Hanson, 1997; Harris, Rice, Quinsey, 1993; Hanson & Morton-Bourgon, 2007; Andrews, Bonta, & Wormith, 2006; Quinsey, Harris, Rice, & Cormier, 2006). In addition to the general outperformance of professional judgments, some investigators found that clinical judgment used to alter the risk level identified by the actuarial scales also decreased accuracy of risk prediction (Gore, 2007; Wormith, Hogg, & Guzzo, 2012; Hanson & Morton-Bourgon, 2009).

Results from initial reports on the accuracy of actuarial scales led to heightened interest into these measures from researchers and policymakers alike. In the 1990s a professional consensus was achieved in regard to the manner in which a risk assessment should be conducted, specifically, the factors which risk to reoffend would be based should be empirically related to recidivism and be weighted consistently across offenders (Harris & Hanson, 2010). Empirically validated factors are the basis upon which the actuarial measures are created. Risk factors

utilized in these measures are included only if they are demonstrated to be significantly correlated with recidivism (Brouillette-Alarie & Proulx, 2013). This method is considered atheoretical, as some actuarial measures include risk factors that have been shown to be correlated with recidivism although no theoretical basis is provided. Although each risk factor is significantly related to recidivism, no single risk factor can be considered adequate to predict risk, therefore each actuarial measure is a combination of empirically based risk factors (Mann, Hanson, & Thornton, 2010).

A variety of actuarial measures have been developed to aid in risk prediction for sex offenders including the Sex Offender Risk Appraisal Guide (SORAG) (Quinsey, Harris, Rice, & Cormier, 1998), Minnesota Sex Offender Screening Tool-Revised (MnSOST-R) (Epperson, Kaul, & Hesselton, 1998), Rapid Risk Assessment for Sex Offense Recidivism (RRASOR) (Hanson, 1997), Structured Anchored Clinical Judgement Minimum (SACJ-Min) (Grubin, 1998), and the Static-99R (Helmus, Thornton, Hanson, & Babchishin, 2011). Each of these measures provide rules for scoring and coding the associated risk factors and are advantageous in that they can be scored without subjective clinical judgment (Langton, Barbaree, Seto, Peacock, Harkins, Hansen, 2007). Actuarial risk assessment instruments, relying almost exclusively on static factors, are considered the “most effective way of estimating recidivism risk” (Hanson & Morton-Bourgon, 2009). The current most utilized actuarial risk scale is the well-validated Static-99R (Jackson & Hess, 2007; McGrath, Cumming, & Burchard, 2009).

Continued investigation into actuarial measures consistently demonstrated accurate and reliable prediction of re-offense risk over and above subjective professional judgment. However, some investigators began to acknowledge a significant limitation of these assessments, namely that little attention was given to the meaning or utility of these risk factors. A variety of risk

factors had been identified and included in these measures as they had been shown to be significantly correlated to recidivism, regardless of whether these factors were theoretically based (Harris & Hanson, 2010). This need for improved utility of risk assessment instruments ushered in the third generation of risk assessment.

### **Third Generation Risk Assessment: Structured Professional Judgment (SPJ)**

SPJs are comprised of empirically validated factors which inform clinical decisions and interventions in order to provide utility to the risk assessment. SPJs rely on dynamic risk factors (i.e. factors that are changeable through intervention and when altered are thought to reduce an individual's risk to recidivate) including deviant sexual interest, criminogenic thinking, and self-management difficulties (Andrews & Bonta, 2006; Beech, Fisher, & Thornton, 2003; Bonta, 1996). The dynamic factors provided an explanation for the changes in risk to recidivate over time that had begun to be identified as a limitation within the literature on actuarial assessments (Hanson & Harris, 2001) as well as provided meaning for the factors being included. Dynamic risk factors are changeable through intervention and when altered are thought to reduce an individual's risk to recidivate (Andrews & Bonta, 2006).

Dynamic factors have previously been identified for general offenders, and included “antisocial personality pattern, pro-criminal attitudes, pro-criminal associates, work/school problems, family/marital problems, poor use of leisure/recreation time, and substance abuse” (Andrews & Bonta, 2006). In addition to these factors, dynamic factors for sexual offenders specifically include deviant sexual interest, sexual preoccupations, intimacy deficits, and emotional congruence with children (Hanson & Morton-Bourgon, 2005; Mann, Hanson, & Thornton, 2010). Among the SPJ risk assessment instruments, the STABLE-2007 is considered the most widely used measure for sexual offenders (McGrath et al., 2009). Although

considerable research has been conducted investigating the role of dynamic factors in general offenders, less of a focus has been provided on the dynamic factors for sex offenders specifically and may explain the continued reliance on actuarial risk assessment instruments (Bonta & Andrews, 2008; Dowden, Antonowics, Andrews, 2003).

### **Structured Professional Judgments versus Actuarial Risk Assessment**

The development of both actuarial and SPJ assessment tools has led to a debate amongst researchers about the best method of risk assessment and specifically the best assessment instruments for accurate and reliable risk prediction (Stadtland, Hollweg, Keindienst, Dietl, Reich, & Nedopil, 2005).

The addition of actuarial and SPJ measures were a significant improvement over the previously utilized subjective professional judgments however, a consensus has not yet been reached regarding the best practice for assessing risk to recidivate amongst sex offenders. A variety of positions, founded in research, have emerged suggesting the best practice for an accurate prediction of risk. One group of professionals suggests the use of actuarial risk measures only. Researchers and clinicians who support only the use of actuarial assessment instruments cite the superiority of statistical prediction predicated upon the empirically derived, criterion-referenced static factors repeatedly identified as closely relating to risk to reoffend (Bengtson & Langstrom, 2007; Quinsey, Harris, Rice, & Cormier, 1998; Lussier and Davies, 2011; Beech, Fisher, Thornton, 2003; Babchishin, Hanson, & Helmus, 2012).

A second group of professionals prefer the addition of dynamic factors in order to enhance prediction of risk as well as delineate treatment targets. These individuals suggest that any assessment of sexual reoffending should be broad and involve more than a simple risk level, but rather the addition of dispositional factors, historical factors, contextual antecedents, and

clinical factors (Beech, Fisher, Thornton, 2003). In fact, some authors have even criticized evaluators who base their risk assessments on only static factors, as they bear less relation to other accepted theories of risk (Hart, 1998; Meehl, 2002; Hanson, 2002; Stadtland et al., 2005).

Although each of these measures are often convenient, easy to use, standardized, quickly administered, and provide a single estimate of risk that has been well-validated the debate between actuarial versus clinical measure utility and superiority continues (Lussier & Davies, 2011; Dolan & Doyle, 2000).

### **Actuarial Versus Dynamic Factors: Static-99R and STABLE-2007**

#### **Static-99R**

The assessment of risk prediction is thought to have scientific merit only to the extent to which those predictions are supported by empirical evidence (Babchishin, Hanson, & Helmus, 2012). The Static-99R was developed as a criterion-referenced measure, wherein an empirical relationship was established between the items comprising the measure and recidivism risk. The Static-99 was developed by Hanson and Thornton as a combination of the RRASOR and the SACJ-Min (Grubin, 1998) with the aim of creating a measure that would be widely applicable and reliably scored based on objective information (Hanson & Thornton, 2000). The RRASOR included items related to prior sexual offenses, age at release, and victimology, while the SACJ-Min contained items relating to sexual offenses against strangers, non-contact sexual offenses, cohabitation status, non-sexual assault, and number of sentencing events (Hanson & Thornton, 2000). Both original measures evidenced approximately equivalent predictive accuracy, while the combination of the two produced a scale that was more accurate than either had been individually (Hanson & Thornton, 2000). The resulting Static-99 evidenced moderate predictive accuracy for sexual recidivism (ROC=0.71) and violent recidivism (ROC=0.69) (Hanson &

Thornton, 2000). The Static-99 contains 10 items derived from the RRASOR and the SACJ-Min and provides a composite score ranging from zero to 12. Four risk levels are provided including low, low-moderate, moderate-high, and high (Hanson & Thornton, 2000). Although the Static-99 quickly became the most widely used and extensively researched actuarial risk assessment instrument for sex offenders (Hanson & Morton-Bourgon, 2009), results from several independent studies began to highlight the inadequacy of risk prediction provided by the Static-99 for offenders of increased age (Barbaree et al., 2009).

A revision of the Static-99 was conducted to address concerns related to the age variable. An adjusted age item was provided by the authors, which modified the age weighting variable to add one point for offenders in the age category of 25 years to 35 years and subtracting points for offenders aged 40 years and older (Romine, Miner, Poulin, Dwyer, & Berg, 2012). No additional alterations were made to the Static-99. Review of the revised age weights revealed consistent prediction rates between the Static-99 and the Static-99R for individuals younger than 40 years of age, and rates more in line with observed re-offense rate for individuals over 40 years of age (Helmus et al., 2011).

The Static-99 and its revision the Static-99R are the most cross-validated measures of any of the actuarial risk assessment instruments (Barbaree et al., 2001; Harris et al., 2003). Results of these studies consistently evidence moderate predictive validity for sexual recidivism in a variety of populations throughout Canada, the U.K., and specific U.S. samples (Barbaree et al., 2001, McGrath et al., 2009, Hanson & Thornton, 1999). Results of these cross-validation studies routinely approximate the original levels of predictive accuracy reported by Hanson and Thornton (2000). Additionally, the Static-99 has demonstrated reliability and a moderate relationship to both sexual and non-sexual violent recidivism (Barbaree, Langton, & Peacock,

2006). One of the most recent and comprehensive meta-analyses of the Static-99, conducted by Hanson and Morton-Bourgon (2009) revealed moderate to strong predictive validity for sexual recidivism across more than 60 studies and 24,000 offenders (Boccaccini, Murrie, Caperton, & Hawes, 2009). The resulting median AUC of .70 for sexual recidivism and a median AUC of .64 for violent recidivism approximated the findings of the original Static-99 reports (Boccaccini, Murrie, Caperton, & Hawes, 2009).

The addition of the revised age weights in the Static-99R added incrementally to the predictive accuracy of the Static-99 scores for individuals over 40 years of age (Helmus et al., 2011). The Static-99R scores have reached AUCs of .80 with the revised age weight in select samples (Hanson, Lunetta, Phenix, Neeley, & Epperson, 2014). For example, in a recent assessment of the Static-99R in a California sample, Hanson and colleagues (2014) found acceptable fit between the expected and observed recidivism rates (AUC=0.80) utilizing the Static-99R in a large jurisdiction. The authors found high predictive accuracy from both the Static-99 and Static-99R among sex offenders convicted to the California Department of Corrections and Rehabilitation. Both the Static-99 and the Static-99R discriminated between recidivists and non-recidivists with AUCs larger than have previously been reported (Hanson, Lunetta, Phenix, Neeley, & Epperson, 2014).

Although results from a variety of studies as well as large-scale meta-analyses evidence promising results for both the Static-99 and Static-99R, not all studies show such powerful effects. A second field validity study of the Static-99 conducted in California found lower predictive accuracy than was reported in the original developmental sample. Sreenivasan and colleagues found that the Static-99 either underestimated or overestimated risk in this U.S. sample (Sreenivasan et al., 2007). One of the largest cross-validation studies of the Static-99 and

MnSOST-R also found considerably lower predictive validity than has previously been reported (Boccaccini, Murrie, Caperton, & Hawes, 2009). In a Texas sample, Boccaccini and colleagues found much smaller effect sizes ( $d=.60$ ) than has been reported in other U.S. samples and the Static-99 provided only weak discrimination between recidivists and non-recidivists.

Additionally, Hanson and Morton-Bourgon (2009) have found that Static-99 effect sizes are often smaller in U.S. samples than in samples from other countries including Canada and the U.K. Boccaccini and colleagues (2009) point out the effect that law enforcement investigations, judicial practices, supervision policies, and treatment resources have on the reported rates of recidivism and therefore the ability of these instruments to predict recidivism accurately. The availability of criminal and judicial records may also play a role in the determination of scoring on these instruments as well as their accuracy (Boccaccini et al., 2009). Lastly, the base rates of recidivism may also be considerably different between jurisdictions, which may be significantly different from the base rates provided in the original developmental sample (Mossman, 2006). These discordant results highlight the importance of investigating the use of actuarial risk assessment instruments within a variety of jurisdictions and populations (Boccaccini et al., 2009).

In addition to predicting sexual recidivism, the Static-99 and Static-99R have also been shown to provide reasonably accurate prediction ( $AUC=0.69$ ) of any violent recidivism amongst sex offenders (Hanson & Thornton, 2000). Although the Static-99 and Static-99R have been shown to have acceptable predictive accuracy for any violent recidivism, studies consistently report much greater prediction of sex-related offenses as opposed to non-sexual related violent offenses (Romine, Miner, Poulin, Dwyer, & Berg, 2012). Hanson and Thornton (2000) suggest that if the primary objective of the risk assessment is to identify risk for violent recidivism



amongst sex offenders or general offenders, other assessment measures may be more appropriate, although the Static-99 and Static-99R may provide supportive evidence for increased risk to recidivate (Hanson & Thornton, 2000).

Limitations of the Static-99 and Static-99R have been reported throughout the literature. The Static-99/99R does not predict violent and non-sexual, non-violent recidivism as well as it does sexual recidivism (Parent et al., 2011). The ability to predict sexual violence against women versus other types of sexual assault has also been called into question with the Static-99/99R. Some studies have identified better predictive accuracy for sexual aggressors against children as opposed to sexual aggressors against women, with some studies suggesting the Static-99/99R as well as other actuarial scales are unable to accurately predict sexual recidivism against women in general (Bartosh, Garby, Lewis, & Grey, 2003; Brouillette-Alarie & Proulx, 2008; Parent et al., 2011). However, not all investigations of these measures provide the same conclusions. For example, Brouillette-Alarie and Proulx (2013) found the Static-99R to be approximately as effective in identifying risk to recidivate in sexual aggressors against women as with sexual aggressors against children, which is inconsistent with previous studies of these measures.

In order to add to the predictive accuracy of the Static-99/99R, SPJs have been investigated with the aim of enhancing recidivism risk prediction of sex offenders, due to the additional information the dynamic variables provide over and above the static factors. The STABLE-2007 is a widely used risk assessment measure targeted at the dynamic risk variables associated with risk for sexual reoffending that has been combined with the Static-99R in both clinical practice and to a lesser extent research investigation into enhanced prediction studies.

## **STABLE-2007**

Dynamic risk factors have been routinely supported in the literature and constituted Bonta's (1996) third generation of risk assessments. These factors highlight areas of change that can be utilized within a treatment setting to aid in the reduction of re-offense risk. In order to identify dynamic variables useful in the assessment of sex offenders, Hanson and Harris (1998, 2000) began the Dynamic Predictors Project (DPP). The authors investigated the differences between sexual offenders who had and those who had not reoffended in the community. In order to target the differences between these two groups, the investigators conducted in-depth interviews with the individuals tasked with treatment and supervision of offenders in the community, as well as with the offenders themselves, and reviewed detailed file information on each offender to identify the factors that had changed or factors that had been problematic for the individuals near the time of their re-offense (Harris & Hanson, 2010). In order to assess for these changes, the authors requested those involved in the supervision of the offender to recount the month preceding the re-offense and a six-month period prior to the re-offense. This differentiation allowed for separation of the acute versus stable factors under review (Harris & Hanson, 2010).

Information gleaned from the DPP resulted in the construction of the Sex Offender Need Assessment Rating (SONAR; Hanson & Harris, 1998) scale. The SONAR contained five stable dynamic items and four acute dynamic items, however, several variables previously identified in the literature and thought to be potentially important in recidivism for sex offenders, were not included. Hanson and Harris (1998) then began to adjust this measure to account for these discrepancies. The STABLE-2000 was developed out of review of the SONAR and similar measures utilized regularly at that time (Harris & Hanson, 2010). The finalized STABLE-2000

contained 16-items evaluating significant social influences, intimacy deficits, sexual self-regulation, general self-regulation, cooperation with supervision, and acceptance of sexual offending attitudes (Harris & Hanson, 2010).

In order to evaluate the STABLE-2000 empirically, as well as correct some errors associated with the SONAR, Hanson and Harris (1999) began a separate prospective study of dynamic variables, the Dynamic Supervision Project (DSP; Hanson et al., 2007). Based on results of this study, the authors created the revised STABLE-2007. Changes from the STABLE-2000 to the STABLE-2007 included removal of specific items, redefinition of scoring criteria, simplification of score calculations, and changes to the nominal risk categories (Harris & Hanson, 2010). The final STABLE-2007 includes 13-items organized into five categories including capacity for relationship stability, intimacy deficits, general self-regulation, sexual self-regulation, and cooperation with supervision (Helmus, Babchishin, & Blais, 2011).

The STABLE-2007 has been considered the most widely used measure of dynamic risk for sexual offenders both in the U.S. and internationally (McGrath et al., 2009). Although the STABLE-2007 is a popular measure in clinical realms, fewer empirical studies are reported when compared with the most widely used actuarial measure of static factors, the Static-99/99R. However, results of studies investigating the STABLE-2007 have reported significant relation to all outcomes with AUCs ranging from 0.67 to 0.71 (Eher et al., 2011). The STABLE-2007 has also evidenced good internal consistency ( $\alpha=0.80$ ) as well as moderate predictive validity (AUC=0.76) (Hanson et al., 2007). The predictive accuracy of the STABLE-2007 has been supported in the literature, for example, results from an Eher and colleagues (2011) study supported previous findings in reference to the utility of the STABLE-2007 in predicting relevant re-offense categories in sexual offenders. Additional studies have also confirmed the

predictive accuracy of the STABLE-2007, with AUCs ranging from 0.60 to 0.74 (Hanson et al., 2007; Eher et al., 2011).

The STABLE-2007 has been regularly examined as a possible enhancement to predictive accuracy of other actuarial measures including the Static-99/99R (Eher et al., 2011), the Violence Risk Scale-Sexual Offender version (VRS-SO) (Sowden & Olver, 2016), and the Risk Matrix 2000 (Helmus et al., 2015) among others with mixed results. In addition to the contribution of this measure to other actuarial scales, the STABLE-2007 has also been shown to significantly predict general recidivism independently of actuarial measures (Lussier, Deslauriers-Varin, & Ratel, 2010).

### **Actuarial and Dynamic Data Integration**

While both the Static-99R and the STABLE-2007 provide acceptable levels of predictive accuracy, the importance of accurate prediction requires continued review of methods to enhance prediction of risk to recidivate. Addition of factors or measures outside of the sex offense is not uncommon in risk evaluations (Doren, 2002). Previously investigated factors include psychopathy, antisocial attitudes, and phallometrically assessed sexual deviance (Doren, 2002; Jackson & Richards, 2007; Looman, Morphett, & Abracen, 2012). Measures such as the Psychopathy Checklist-Revised (PCL-R; Hare, 1991, 2003) have also become common place in risk assessments conducted by mental health professionals as well as measures of interest by researchers looking to extend the predictive accuracy of actuarial risk assessment for sexual offenders (Looman, Morphett, & Abracen, 2012). Results of studies utilizing these additional measures are mixed, with some investigators highlighting the importance of these factors, while others conclude that addition of these factors and measures does nothing to enhance predictive

accuracy over and above what is already provided by the Static-99R (Babchishin et al., 2012; Looman, Morphett, & Abracen, 2012).

Previous research has investigated some of the benefits of combining actuarial and SPJ protocols into an integrated approach to risk assessment. For example, Mills and Gray (2013) examined the predictive accuracy of the Two-Tiered Violence Risk Estimates (TTV) violence risk assessment instrument which was designed as an integrated actuarial risk assessment. The initial tier involved ten actuarial risk variables, while the subsequent tier was represented by 13 dynamic risk management factors. The resulting aggregate risk score was validated as a recidivism predictor (> 10 years) for 78 criminal offenders ( $AUC_{\text{actuarial}} = 0.73$ ;  $AUC_{\text{risk management}} = 0.75$ ) (Mills & Gray, 2013). Initial results suggest promising avenues of future assessment construction and use in clinical practice in the area of violence risk assessment. Similar investigations have been conducted in the area of sexual violence risk assessment.

In a similar manner, dynamic risk factors have been found to add incrementally to the predictive accuracy provided by static factors within sexual re-offense risk prediction (Allan, Grace, Rutherford, & Hudson, 2007; Helmus, Babchishin, & Blais, 2011). Although static measures of risk (i.e. Static-99R) are considered moderately accurate alone, they are not intended to provide direction for treatment, intervention areas, or evaluate changes in level of risk (Sowden & Olver, 2016). To enhance the risk level provided by actuarial measures, the STABLE-2007 has been used in conjunction with the Static-99/99R within clinical practice, however, research into the effectiveness of this method has been mixed and further concerns regarding the appropriate method of combining the results of the risk scales have been raised (Sowden & Olver, 2016).

## **Enhanced Prediction through the Static-99R and STABLE-2007**

Several studies have investigated the combination of the static and dynamic factors to enhance predictive accuracy. The results of these studies, however, have been mixed and actuarialists have continued to argue that the use of static measures alone is enough to produce a valid and reliable measure of risk to recidivate (Lussier & Davies, 2011; Bengtson & Langstrom, 2007; Quinsey, Harris, Rice, & Cormier, 1998). The use of the STABLE-2007 as a measure of dynamic risk factors has been investigated along with static measures of risk to determine whether the combination can improve risk prediction in sex offenders. For example, Sowden and Olver (2016) investigated the use of the STABLE-2007 in conjunction with the Violence Risk Scale-Sexual Offender version (VRS-SO; Wong, Olver, Nicholaichuk, & Gordon, 2003) to determine enhancement of recidivism risk prediction. The authors concluded that the inclusion of dynamic risk measures into a comprehensive risk assessment framework provides significant information regarding changes in recidivism risk (Sowden & Olver, 2016).

The STABLE-2007 has also been shown to add incrementally to the Static-99 in some samples. For example, Eher and colleagues (2011) found that the STABLE-2007 incrementally added to the predictive accuracy of the Static-99 when investigating violent and general re-offense but not for sexual recidivism in a German sample. Additionally, the authors found that the STABLE-2007 was able to incrementally add to the predictive accuracy of the Sex Offender Risk Appraisal Guide (SORAG; Quinsey et al., 2006; Eher et al., 2011). A recent Canadian prospective study by Hanson and colleagues (2015) found that all forms of recidivism were predicted by static measures, specifically the Static-99R and Static-2002R, and by dynamic measures of risk, specifically STABLE-2000 and STABLE-2007. Additionally, these authors reported that the STABLE-2007 scores added incremental predictive accuracy over both

actuarial measures considered in the study, but only when complete cases were reviewed (Hanson, Helmus, & Harris, 2015). However, it is important to consider findings from previous studies reporting that Static-99 effect sizes are often smaller in U.S. samples than in samples from other countries including Canada and the U.K. (Hanson & Morton-Bourgon, 2009). Given the differences between laws, judicial actions, and prosecutorial methods between jurisdictions, states, and countries it is important to investigate the use of actuarial risk assessment instruments in a variety of locations and contexts.

### **Levels of Risk Integration**

Given the focus on enhanced predictive accuracy for sex offenders, many clinicians regularly include multiple sources of information as well as multiple risk assessment measures to provide a comprehensive evaluation of the individual's risk to recidivate. However, most evaluators report each result independently from one another without clear direction on how to combine the results to form a final assessment of risk (Jackson & Hess, 2007). A popular choice amongst clinicians has been to err on the side of caution and report the highest risk instrument as the final level of risk to recidivate (Jackson & Hess, 2007). However, this method of reporting level of risk has led to an overestimation of risk level and the subsequent consequences for offenders as well as fiscal concerns related to higher supervision and incarceration sentences for these individuals (Babchishin, Hanson, & Helmus, 2012).

In addition to the common overestimation of risk, additional concern is warranted when combining measures comprised of differing constructs. Relationships between the total score and risk outcomes can be removed, improved, or evidence suppression effects with the addition of various measures (Paulhus, Robins, Trzesniewski, & Tracy, 2004; Babchishin, Hanson, & Helmus, 2012). With these concerns in mind several investigators have suggested methods to

combine risk assessment measures in order to produce not only an enhanced prediction of risk to reoffend, but also a comprehensive assessment with a succinct level of risk provided for each individual. For example, Babchishin and colleagues (2012) investigated the best method of combining risk tools by comparing regularly used methods of current practice including, choosing the lowest risk category reported, the highest risk category reported, or the average of all the risk categories reported. The authors concluded that an average of all risk measures included provided the most accurate assessment of risk as the remaining options underestimated or overestimated recidivism rates respectively (Babchishin, Hanson, & Helmus, 2012). Additional studies investigating the best method of risk assessment combination reported similar findings (Lehmann et al., 2013; Barbaree, Langton, & Peacock, 2006). The averaging approach is also supported through psychometric theory, as it is assumed that increasing the number of items available in a measure should simultaneously reduce the error and produce more reliable results (Nunnally & Bernstein, 1994; Lehmann et al., 2013).



## **CHAPTER II**

### **CURRENT STUDY**

Prior research has investigated the utility of combining SPJ and actuarial protocols to enhance predictive accuracy regarding recidivism risk for sexual offenders (Wong, Olver, Nicholaichuk, & Gordon, 2003; Eher et al., 2012; Hanson, Helmus, & Harris, 2015). These studies have reviewed this method by utilizing various actuarial and SPJ measures, for example although both Wong and colleagues (2003) and Eher and colleagues (2012) investigated the use of the STABLE-2007, their choice of actuarial measures differed with Wong and colleagues (2003) reviewing the VRS-SO and Eher and colleagues (2012) investigating the use of the Static-99. The use of various combinations of measures is understandable given the lack of agreement between researchers and clinicians alike as to the best available measure for risk prediction (Seto, 2005). A recent study by Hanson and colleagues (2015) investigated the use of the Static-99R and the STABLE-2007 within a Canadian sample of sex offenders. Results from this study were promising in regard to combining the Static-99R and the STABLE-2007 to provide enhanced predictive accuracy. However, investigators have cautioned the generalization of studies including actuarial measures to other jurisdictions given the lack of consistent agreement between studies. Boccaccini and colleagues (2009) have highlighted the importance of investigating the use of actuarial measures in various jurisdictions, particularly measures that rely so heavily on previous offenses and convictions such as the Static-99/99R, as legal proceeding differ greatly between states, regions, and countries. For example, Hanson and Morton-Bourgon (2009) reported lower effect sizes in the U.S. for the Static-99 when compared

with other countries including Canada and the U.K. Finally, Mossman (2006) referenced the differing base rates of recidivism between jurisdictions and suggested investigation into the accuracy of actuarial instruments in various jurisdictions. Given the mixed results from various studies attempting to combine actuarial and SPJ measures, concerns raised about the effect of legal proceedings on the scoring of measures heavily reliant on previous offenses and convictions, and the recommendations proposed regarding the investigation of these measures in various jurisdictions, further investigation in the combination of SPJ and actuarial measures is warranted.

Static-99R predictive validity estimates have varied slightly in published reports, however a vast majority of studies have reported AUCs between 0.71 to 0.80 suggesting fair to good predictive accuracy (Hanson, Lunetta, Phenix, Neeley, & Epperson, 2014; Helmus et al., 2012). The predictive validity estimates for the STABLE-2007 have been lower than those reported for the Static-99R and have ranged between 0.67 to 0.76 suggesting fair predictive validity (Hanson et al., 2007; Eher et al., 2010). Results are expected to support the predictive power of the Static-99R and STABLE-2007 previously reported in the literature (Hanson & Thornton, 2000; Hanson et al., 2007), while the combination of the Static-99R and the STABLE-2007 is expected to provide enhanced predictive accuracy within this population.

The present study proposes to investigate the predictive accuracy of the Static-99R and the STABLE-2007 in a community sample of sexual offenders in North Dakota. Additionally, a review of the combination of both the Static-99R and the STABLE-2007 will be conducted to determine whether the predictive accuracy of the Static-99R can be enhanced with the addition of SPJ dynamic factors provided by the STABLE-2007.

It is hypothesized that (a) the Static-99R will provide moderate predictive accuracy within this sample, consistent with the original developmental sample provided by Hanson and Thornton (2000) (b) the STABLE-2007 will provide moderate predictive accuracy within this sample, consistent with previous reports and (c) the combination of both the Static-99R and STABLE-2007 will provide predictive accuracy that exceeds either protocol used in isolation.

## **CHAPTER III**

### **METHOD**

#### **Participants and Procedure**

This study used data from a community-based program in a North Dakota city. The sample consisted of sexual offenders who were assessed, but not necessarily treated, at an outpatient sex offender program. All offenders were included regardless of whether they participated in treatment.

Participants ( $n = 136$ ) included individuals from a clinical community sample of adult male sex offenders living in North Dakota. The sample was obtained from an outpatient treatment center. Each participant previously completed a variety of psychological measurements including the Static-99R and STABLE-2007 as part of an assessment or treatment evaluation. The study contained individuals who received either assessment or treatment evaluations as a result of a sexual offense charge or conviction within the state of North Dakota. Particular consideration was given to previous Static-99R and STABLE-2007 scores representing the level of risk to recidivate amongst these individuals.

A review of case files previously collected from a population of adult male sex offenders within a North Dakota community were conducted in order to obtain basic demographic information and Static-99R and STABLE-2007 assessment records. The ND public access criminal database was then utilized to identify the criminal behavior, prior to and following the dates of completion for the Static-99R and STABLE-2007 assessments. This database was used

to identify those participants who recidivated and those who did not following the completion of these risk assessment instruments.

## **Materials**

### **Demographic Information**

Participant records will provide age, sex, ethnicity, and education level.

### **Risk Assessment**

Risk to recidivate was measured utilizing the Static-99R (Hanson & Thornton, 2000) and the STABLE-2007 (Hanson et al., 2007). The Static-99R is a 10-item actuarial scale that is used to assess recidivism of risk in adult male sex offenders (Hanson & Thornton, 2000; [www.static99.org](http://www.static99.org)). The Static-99R includes items such as demographics, sexual criminal history, and general criminal history. Scores can range between -3 and 12, with the revised age weights provided and fall within four categories of risk: low (-3-1), low-moderate (2-3), moderate-high (4-5), and high (6-12). The STABLE-2007 is a 13-item dynamic actuarial risk/needs assessment measure used to assess recidivism risk and provide direction for community supervision of sexual offenders (Hanson et al., 2007). Items include capacity for relationship stability, intimacy deficits, general self-regulation, sexual self-regulation, and cooperation with supervision, all of which have been associated with risk to recidivate in adult male sexual offenders. Scores can range between 0 and 26 with three risk categories: low (0-3), moderate (4-11), and high (12+).

### **Recidivism**

Official criminal records were obtained through North Dakota public data access.

Recidivism will be defined as (Stadtland et al., 2005):

1. Any re-offense (*Total Recidivism*) – any violation of rules regardless of type (may include: traffic violations, lack of child support, etc.)

2. Any non-sexual, non-contact criminal offense (*General Recidivism*) – any criminal offense not including non-criminal violations
3. Any non-sexual violent offense (*Violent Recidivism*) – any violent criminal offense
4. Any non-contact sexual offense (e.g. threat, exhibitionism, voyeurism, distribution of pornography, obscene letters or phone calls, theft of fetish objects, etc.) (*Non-Contact Sexual Recidivism*)
5. Any contact sexual offense (e.g. coercion, force, touching a child over/under clothes, rape, incest, etc.) (*Contact Sexual Recidivism*)

An individual is considered to have committed a re-offense at the time a new criminal offense or violation was entered into the North Dakota criminal database.

### **Analytic Strategy**

The predictive validity of both dimensional and categorical Static-99R and STABLE-2007 scores were tested for each recidivism outcome indicator. Logistic regressions were used to test the predictive validity of the Static-99R and STABLE-2007 while controlling for the potential effects of follow-up duration. Each regression analysis was followed by an AUC calculation regarding the extent to which the protocol correctly predicted recidivism for each offense. AUC values were derived from receiver operating characteristic (ROC) curves which is a plot of the success of indicators in true versus false identifications of a dichotomous criterion. AUC values range from 0 to 1.0. An AUC of 0.5 indicates no better prediction over chance, while an AUC of 1.0 indicates perfect prediction (Stadtland et al., 2005). Interpretive guidelines for AUCs suggest values of .5 (poor), 0.70 to 0.80 (fair), 0.80 to 0.90 (good), and greater than 0.90 (excellent) when summarizing predictive validity. Chi square analyses of classification predictive accuracy will be followed with post-hoc assessments of the relative risk of

assignments to specific classification cells. The Low Risk cells were used as the comparison in each analysis. Relative risk (*RR*) calculations were completed using MedCalc for Windows, version 15.0 (MedCalc Software, Ostend, Belgium).

## CHAPTER IV

### RESULTS

#### Descriptive Statistics

The sample for this study was comprised of 136 male sex offenders who underwent forensic assessment in North Dakota between 2005 and 2017. The sample was primarily Caucasian (Caucasian, 68.4%; African American, 3.7%; Hispanic/Latino, 3.7%; Native American/American Indian, 14.7%; Other, .7%) and ranged in age from 21 to 73 years. Participant education level ranged from enrollment, but non-completion of grade school to completion of an Associate degree, with the largest percentage (52.6%) having obtained their high school diploma or equivalent. Recidivism data varied by offense (Total Recidivism,  $n = 58$ , 42.6%, General Recidivism,  $n = 45$ , 33.1%, Violent Recidivism,  $n = 9$ , 6.6%, Non-Contact Sexual Recidivism,  $n = 17$ , 12.5%, Contact Sexual Recidivism,  $n = 3$ , 2.2%). Table 1 presents descriptive statistics for the dimensional variables in this study.

Table 1. Dimensional Variable Descriptive Statistics.

| Variable             | <i>N</i> | <i>M</i> | <i>SD</i> | Range |
|----------------------|----------|----------|-----------|-------|
| Static-99R Raw       | 136      | 3.97     | 2.28      | -2-9  |
| STABLE-2007 Raw      | 136      | 9.25     | 4.36      | 0-21  |
| Months to Recidivism | 136      | 6.93     | 16.31     | 0-94  |



### **Offender Age Considerations**

Offender age contributed explicitly (Static-99R) or implicitly (STABLE-2007) in the generation of all dimensional and categorical predictor scores. Offender age was not found to be a significant predictor of any recidivism offense (Total Recidivism,  $AUC = .42, p = .107$ ; General Recidivism,  $AUC = .42, p = .120$ ; Violent Recidivism,  $AUC = .39, p = .259$ ; Non-Contact Sexual Recidivism,  $AUC = .50, p = .976$ ; Contact Sexual Recidivism,  $AUC = .69, p = .254$ ).

### **Follow-Up Duration Considerations**

Follow-up durations (in months) varied within the total sample for Static-99R ( $M = 51.26, SD = 34.56, Range = 2.40$  to  $153.87$ ) and STABLE-2007 ( $M = 41.65, SD = 27.10, Range = 4.83$  to  $124.67$ ). Follow-up durations only differed significantly for STABLE-2007 analyses of the Total Recidivism and Non-Contact Sexual Recidivism categories (see Table 2). Follow-up periods were otherwise similar in duration between recidivists and non-recidivists. All of the offenders were evaluated at a minimum of 2.40 (Static-99R) or 4.83 (STABLE-2007) months after their evaluation. Table 3 shows that the vast majority (70%) of reoffenses occurred long after these minimum follow-up periods ( $M = 19.22$  months;  $Mdn = 10$  months;  $SD = 22.5$ ). As a precaution, the follow-up duration was included as a statistical control in each of the logistic regression analyses.

Table 2. Static-99R and STABLE-2007 Follow-up Durations for Recidivists and Non-Recidivists.

| Recidivism Category           | Recidivists                            |          |           | Non-Recidivists |          |           | Wald $\chi^2$ |          |
|-------------------------------|--|----------|-----------|-----------------|----------|-----------|---------------|----------|
|                               | <i>n</i>                               | <i>M</i> | <i>SD</i> | <i>n</i>        | <i>M</i> | <i>SD</i> | <i>p</i>      | <i>d</i> |
|                               | <b>Static-99R Follow-Up Durations</b>  |          |           |                 |          |           |               |          |
| Total Recidivism              | 58                                     | 53.85    | 28.80     | 78              | 49.33    | 38.55     | .402          |          |
| General Recidivism            | 45                                     | 54.25    | 28.27     | 91              | 49.78    | 37.34     | .452          |          |
| Violent Recidivism            | 9                                      | 46.47    | 33.35     | 127             | 51.60    | 34.75     | .669          |          |
| Non-Contact Sexual Recidivism | 17                                     | 56.55    | 33.82     | 119             | 50.51    | 34.74     | .502          |          |
| Contact Sexual Recidivism     | 3                                      | 79.90    | 14.71     | 133             | 50.61    | 34.63     | .147          |          |
|                               | <b>STABLE-2007 Follow-Up Durations</b> |          |           |                 |          |           |               |          |
| Total Recidivism              | 57                                     | 47.67    | 27.27     | 78              | 37.24    | 26.28     | <b>.027</b>   | .38      |
| General Recidivism            | 44                                     | 44.11    | 22.63     | 91              | 40.45    | 29.06     | .464          |          |
| Violent Recidivism            | 9                                      | 39.54    | 35.23     | 126             | 41.80    | 26.60     | .810          |          |
| Non-Contact Sexual Recidivism | 16                                     | 60.87    | 33.09     | 119             | 39.06    | 25.26     | <b>.021</b>   | .80      |
| Contact Sexual Recidivism     | 3                                      | 67.84    | 20.74     | 132             | 41.05    | 26.99     | .090          |          |

Table 3. Distribution of Recidivism Durations for Reoffending Subset.

| Months to Reoffense | Frequency | Percent | Cumulative Frequency |
|---------------------|-----------|---------|----------------------|
| 1                   | 8         | 16.3%   | 16.3%                |
| 2                   | 4         | 8.2%    | 24.5%                |
| 3                   | 2         | 4.1%    | 28.6%                |
| 4                   | 2         | 4.1%    | 32.7%                |
| 5                   | 3         | 6.1%    | 38.8%                |
| 6                   | 1         | 2.0%    | 40.8%                |
| 8                   | 1         | 2.0%    | 42.9%                |
| 12                  | 5         | 10.2%   | 53.1%                |
| 13                  | 2         | 4.1%    | 57.1%                |
| 16                  | 1         | 2.0%    | 59.2%                |
| 18                  | 2         | 4.1%    | 63.3%                |
| 21                  | 1         | 2.0%    | 65.3%                |
| 22                  | 1         | 2.0%    | 67.3%                |
| 25                  | 1         | 2.0%    | 69.4%                |
| 26                  | 3         | 6.1%    | 75.5%                |
| 27                  | 1         | 2.0%    | 77.6%                |
| 28                  | 1         | 2.0%    | 79.6%                |
| 31                  | 1         | 2.0%    | 81.6%                |
| 34                  | 1         | 2.0%    | 83.7%                |
| 35                  | 1         | 2.0%    | 85.7%                |
| 37                  | 1         | 2.0%    | 87.7%                |
| 38                  | 1         | 2.0%    | 89.8%                |
| 39                  | 1         | 2.0%    | 91.8%                |
| 75                  | 1         | 2.0%    | 93.9%                |
| 77                  | 1         | 2.0%    | 95.9%                |
| 84                  | 1         | 2.0%    | 97.9%                |
| 94                  | 1         | 2.0%    | 100.00%              |

### Static-99R Predictions

The Static-99R is a 10-item actuarial scale that generates both a raw score ranging from -3 to 12 as well as a recidivism risk classification (low, -3 to 1; low-moderate, 2 to 3; moderate-high, 4 to 5; and high (> 6). Both dimensional and categorical Static-99R scores were tested as predictors in this analysis. Static-99R raw scores were found to vary by respondent age,  $r(136) = -.48, p < .001$ , but not education level,  $r(136) = -.02, p = .878$ . This sample was represented disproportionately by Caucasian ( $n = 93, 68.4\%$ ) over other-race (American Indian,  $n = 20, 14.7\%$ ; African American,  $n = 5, 3.7\%$ ; Hispanic,  $n = 5, 3.7\%$ ; or Other, .7%) offenders. The Static-99R raw scores generated by the Caucasian offenders did not differ significantly from the remaining subset of other ethnicities,  $t(105) = -1.72, p = .087$ , or from the Native American cohort examined in isolation,  $t(113) = 1.64, p = .105$ .

### Total Recidivism

This dichotomous criterion identified participants with any re-offense since the Static-99R assessment was completed. Adjusted Static-99R raw scores differed significantly between the recidivists ( $n = 58, M = 4.63, SE = .29$ ) and non-recidivists ( $n = 78, M = 3.48, SE = .25$ ) cohorts,  $Wald(1) = 7.88, p = .005$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = .70, p = .402$ . Static-99R raw scores were useful in segregating recidivists from non-recidivists in this sample,  $AUC = .63 (SE = .047), p = .009$ . Recidivism varied significantly by risk classification,  $\chi^2(3) = 9.96, p = .019$ . The relative risk of recidivism was significantly elevated by the moderate-high ( $RR = 3.43, 95\% CI [.87, 204.77], p = .024$ ) and high ( $RR = 4.16, 95\% CI [0.83, 201.03], p = .040$ ) risk classifications.

Table 4. Total Recidivism Frequencies by Static-99R Risk Classification.

| Total Recidivism | Static-99R Risk Classification |              |               |      | Total |
|------------------|--------------------------------|--------------|---------------|------|-------|
|                  | Low                            | Low-Moderate | Moderate-High | High |       |
| Yes              | 3                              | 12           | 26            | 17   | 58    |
| No               | 16                             | 23           | 22            | 17   | 78    |
| Total            | 19                             | 35           | 48            | 34   | 136   |

### General Recidivism

This dichotomous criterion identified participants with any non-sexual, non-violent offense since the Static-99R assessment was completed. Adjusted Static-99R raw scores differed significantly between recidivists ( $n = 45$ ,  $M = 4.56$ ,  $SE = .34$ ) and non-recidivists ( $n = 91$ ,  $M = 3.68$ ,  $SE = .24$ ) cohorts,  $Wald(1) = 4.36$ ,  $p = .037$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = .56$ ,  $p = .452$ . Static-99R raw scores were not useful in segregating general recidivists from non-recidivists in this sample  $AUC = .60$  ( $SE = .050$ ),  $p = .062$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 7.23$ ,  $p = .065$ , but the relative risk of recidivism was elevated significantly by the moderate-high ( $RR = 4.16$ , 95% CI [1.08, 16.03],  $p = .040$ ) classification. Significant relative risk elevations were not observed for the low-moderate ( $RR = 2.71$ , 95% CI [.66, 11.14],  $p = .170$ ), and high ( $RR = 3.35$ , 95% CI [0.84, 13.43],  $p = .088$ ) risk classifications.

Table 5. General Recidivism Frequencies by Static-99R Risk Classification.

| General Recidivism | Static-99R Risk Classification |              |               |      | Total |
|--------------------|--------------------------------|--------------|---------------|------|-------|
|                    | Low                            | Low-Moderate | Moderate-High | High |       |
| Yes                | 2                              | 10           | 21            | 12   | 45    |
| No                 | 17                             | 25           | 27            | 22   | 91    |
| Total              | 19                             | 35           | 48            | 34   | 136   |

## Violent Recidivism

This dichotomous criterion identified participants with any violent offense since the Static-99R assessment was completed. Adjusted Static-99R raw scores differed significantly between violent recidivists ( $n = 9$ ,  $M = 6.00$ ,  $SE = .74$ ) and non-recidivists ( $n = 127$ ,  $M = 3.83$ ,  $SE = .20$ ) cohorts,  $Wald(1) = 7.07$ ,  $p = .008$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = .30$ ,  $p = .840$ . Static-99R raw scores were useful in segregating violent recidivists from non-recidivists in this sample  $AUC = .76$  ( $SE = .070$ ),  $p = .008$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 7.66$ ,  $p = .054$ .

Table 6. Violent Recidivism Frequencies by Static-99R Risk Classification.

| Violent Recidivism | Static-99R Risk Classification |              |               |      | Total |
|--------------------|--------------------------------|--------------|---------------|------|-------|
|                    | Low                            | Low-Moderate | Moderate-High | High |       |
| Yes                | 0                              | 0            | 4             | 5    | 9     |
| No                 | 19                             | 35           | 44            | 29   | 127   |
| Total              | 19                             | 35           | 48            | 34   | 136   |

## Non-Contact Sexual Recidivism

This dichotomous criterion identified participants with any non-contact sexual offense since the Static-99R assessment was completed. Adjusted Static-99R raw scores did not differ significantly between non-contact sexual recidivists ( $n = 17$ ,  $M = 4.48$ ,  $SE = .57$ ) and non-recidivists ( $n = 119$ ,  $M = 3.90$ ,  $SE = .21$ ) cohorts,  $Wald(1) = .95$ ,  $p = .331$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = .47$ ,  $p = .495$ . Static-99R raw scores were not useful in segregating non-contact sexual recidivists from non-recidivists in this sample  $AUC = .56$  ( $SE = .076$ ),  $p = .432$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 2.03$ ,  $p = .567$ .

Table 7. Non-Contact Sexual Recidivism Frequencies by Static-99R Risk Classification.

| Non-Contact Sexual Recidivism | Static-99R Risk Classification |              |               |      | Total |
|-------------------------------|--------------------------------|--------------|---------------|------|-------|
|                               | Low                            | Low-Moderate | Moderate-High | High |       |
| Yes                           | 1                              | 5            | 5             | 6    | 17    |
| No                            | 18                             | 30           | 43            | 28   | 119   |
| Total                         | 19                             | 35           | 48            | 34   | 136   |

### Contact Sexual Recidivism

This dichotomous criterion identified participants with any contact sexual offense since the Static-99R assessment was completed. Adjusted Static-99R raw scores did not differ significantly between contact sexual recidivists ( $n = 3$ ,  $M = 3.36$ ,  $SE = 1.34$ ) and non-recidivists ( $n = 133$ ,  $M = 3.98$ ,  $SE = .20$ ) cohorts,  $Wald(1) = .26$ ,  $p = .611$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = 1.86$ ,  $p = .173$ . Static-99R raw scores were not useful in segregating contact sexual recidivists from non-recidivists in this sample  $AUC = .422$  ( $SE = .143$ ),  $p = .646$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 3.24$ ,  $p = .357$ .

Table 8. Contact Recidivism Frequencies by Static-99R Risk Classification.

| Contact Recidivism | Static-99R Risk Classification |              |               |      | Total |
|--------------------|--------------------------------|--------------|---------------|------|-------|
|                    | Low                            | Low-Moderate | Moderate-High | High |       |
| Yes                | 1                              | 0            | 2             | 0    | 3     |
| No                 | 18                             | 35           | 46            | 34   | 133   |
| Total              | 19                             | 35           | 48            | 34   | 136   |

### **STABLE-2007 Predictions**

The STABLE-2007 is a 13-item dynamic actuarial risk/needs assessment measure that generates both a raw score ranging from 0 to 26 as well as a recidivism risk classification (low, 0-3; moderate, 4-11; and high, >12). Both dimensional and categorical STABLE-2007 scores were tested as predictors in this analysis. STABLE-2007 raw scores were found to vary by respondent education level,  $r(136) = .21, p = .014$ , but not participant age,  $r(136) = -.15, p = .072$ . The STABLE-2007 raw scores generated by the Caucasian offenders did not differ significantly from the remaining subset from other ethnicities,  $t(105) = -.082, p = .935$ , or from the Native American cohort examined in isolation,  $t(113) = .270, p = .151$ .

### **Total Recidivism**

This dichotomous criterion identified participants with any re-offense since the STABLE-2007 assessment was completed. Adjusted STABLE-2007 raw scores differed significantly between recidivists ( $n = 57, M = 10.11, SE = .58$ ) and non-recidivist ( $n = 78, M = 8.55, SE = .49$ ) cohorts,  $Wald(1) = 3.98, p = .046$ . The follow-up duration was significant as a covariate in this analysis,  $Wald(1) = 4.78, p = .027$ . STABLE-2007 raw scores were useful in segregating recidivists from non-recidivists in this sample,  $AUC = .61 (SE = .048), p = .026$ . Recidivism varied significantly by risk classification,  $\chi^2(3) = 10.71, p = .005$ . The relative risk of recidivism was not elevated significantly within the moderate ( $RR = 13.34, 95\% CI [.87, 204.77], p = .063$ ) and high ( $RR = 12.95, 95\% CI [0.83, 201.03], p = .067$ ) risk classifications.

Table 9. Total Recidivism Frequencies by STABLE-2007 Risk Classification.

| Total Recidivism | STABLE-2007 Risk Classification |          |      | Total |
|------------------|---------------------------------|----------|------|-------|
|                  | Low                             | Moderate | High |       |
| Yes              | 0                               | 40       | 18   | 58    |
| No               | 13                              | 44       | 21   | 78    |
| Total            | 13                              | 84       | 39   | 136   |

### General Recidivism

This dichotomous criterion identified participants with any non-sexual, non-violent offense since the STABLE-2007 assessment was completed. Adjusted STABLE-2007 raw scores differed significantly between recidivists ( $n = 44$ ,  $M = 10.28$ ,  $SE = .65$ ) and non-recidivists ( $n = 91$ ,  $M = 8.69$ ,  $SE = .45$ ) cohorts,  $Wald(1) = 3.89$ ,  $p = .049$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = .59$ ,  $p = .464$ . STABLE-2007 raw scores were useful in segregating general recidivists from non-recidivists in this sample  $AUC = .62$  ( $SE = .049$ ),  $p = .026$ . Recidivism varied significantly by risk classification,  $\chi^2(3) = 7.19$ ,  $p = .027$ . The relative risk of recidivism was not elevated significantly within the moderate ( $RR = 10.05$ , 95% CI [.26, 65.69],  $p = .098$ ) and high ( $RR = 10.85$ , 95% CI [0.23, 65.27],  $p = .089$ ) risk classifications.

Table 10. General Recidivism Frequencies by STABLE-2007 Risk Classification.

| General Recidivism | STABLE-2007 Risk Classification |          |      | Total |
|--------------------|---------------------------------|----------|------|-------|
|                    | Low                             | Moderate | High |       |
| Yes                | 0                               | 30       | 15   | 45    |
| No                 | 13                              | 54       | 24   | 91    |
| Total              | 13                              | 84       | 39   | 136   |



## Violent Recidivism

This dichotomous criterion identified participants with any violent offense since the STABLE=2007 assessment was completed. Adjusted STABLE-2007 raw scores did not differ significantly between violent recidivists ( $n = 9, M = 9.22, SE = 1.46$ ) and non-recidivists ( $n = 127, M = 9.21, SE = .39$ ) cohorts,  $Wald(1) = .01, p = .992$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = .06, p = .810$ . STABLE-2007 raw scores were not useful in segregating violent recidivists from non-recidivists in this sample  $AUC = .51 (SE = .090), p = .944$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 1.46, p = .482$ .

Table 11. Violent Recidivism Frequencies by STABLE-2007 Risk Classification.

| Violent Recidivism | STABLE-2007 Risk Classification |          |      | Total |
|--------------------|---------------------------------|----------|------|-------|
|                    | Low                             | Moderate | High |       |
| Yes                | 0                               | 7        | 2    | 9     |
| No                 | 13                              | 77       | 37   | 127   |
| Total              | 13                              | 84       | 39   | 136   |

## Non-Contact Sexual Recidivism

This dichotomous criterion identified participants with any non-contact sexual offense since the STABLE-2007 assessment was completed. Age-adjusted STABLE-2007 raw scores did not differ significantly between non-contact sexual recidivists ( $n = 16, M = 9.66, SE = 1.13$ ) and non-recidivists ( $n = 119, M = 9.15, SE = .40$ ) cohorts,  $Wald(1) = .22, p = .640$ . The follow-up duration was significant as a covariate in this analysis,  $Wald(1) = 8.05, p = .021$ . STABLE-2007 raw scores were not useful in segregating non-contact sexual recidivists from non-

recidivists in this sample  $AUC = .54$  ( $SE = .069$ ),  $p = .631$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 2.11$ ,  $p = .349$ .

### Contact Sexual Recidivism

This dichotomous criterion identified participants with any contact sexual offense since the STABLE-2007 assessment was completed. Adjusted STABLE-2007 raw scores did not differ significantly between contact sexual recidivists ( $n = 3$ ,  $M = 9.35$ ,  $SE = 2.55$ ) and non-recidivists ( $n = 132$ ,  $M = 9.20$ ,  $SE = .38$ ) cohorts,  $Wald(1) = .01$ ,  $p = .938$ . The follow-up duration was not significant as a covariate in this analysis,  $Wald(1) = 2.43$ ,  $p = .090$ . STABLE-2007 raw scores were not useful in segregating contact sexual recidivists from non-recidivists in this sample  $AUC = .54$  ( $SE = .073$ ),  $p = .836$ . Recidivism did not vary significantly by risk classification,  $\chi^2(3) = 1.89$ ,  $p = .387$ .

### Static-99R and STABLE-2007 Predictive Validity Summary

Table 12 summarizes the statistical significance of the Static-99R and STABLE-2007 prediction estimates for each of the recidivism criterion measure. Table 13 provides a post-hoc analysis of the relative risk of elevated Static-99R and STABLE-2007 classifications as compared to the low risk cells.

Table 12. Non-Contact Sexual Recidivism Frequencies by STABLE-2007 Risk Classification.

| Non-Contact Sexual Recidivism | STABLE-2007 Risk Classification |          |      | Total |
|-------------------------------|---------------------------------|----------|------|-------|
|                               | Low                             | Moderate | High |       |
| Yes                           | 0                               | 12       | 5    | 17    |
| No                            | 13                              | 72       | 34   | 119   |
| Total                         | 13                              | 84       | 39   | 136   |

Table 13. Contact Sexual Recidivism Frequencies by STABLE-2007 Risk Classification.

| Contact Sexual Recidivism | STABLE-2007 Risk Classification |          |      | Total |
|---------------------------|---------------------------------|----------|------|-------|
|                           | Low                             | Moderate | High |       |
| Yes                       | 0                               | 3        | 0    | 3     |
| No                        | 13                              | 81       | 39   | 133   |
| Total                     | 13                              | 84       | 39   | 136   |

### Combined Static-99R and STABLE-2007 Raw Score Predictions

The merits of combining Static-99R and STABLE-2007 scores has been shown in previous studies of sex offense recidivism (Eher et al., 2012; Hanson et al., 2015). Standard scores for these two measures were combined and used as the predictor for each type of recidivism analyzed in this study. Table 14 shows that combined Static-99R and STABLE-2007 provided fair predictors of Total and General Recidivism.

Table 14. Summary of Static-99R and STABLE-2007 Dimensional and Categorical Analyses.

| Recidivism Offense            | Dimensional Analyses   |                                   | Categorical Analyses   |
|-------------------------------|------------------------|-----------------------------------|------------------------|
|                               | <i>Wald</i>            | <i>AUC</i>                        | $\chi^2$               |
| <b>Static-99R</b>             |                        |                                   |                        |
| Total Recidivism              | <b><i>p</i> = .005</b> | <b>AUC = .63, <i>p</i> = .009</b> | <b><i>p</i> = .019</b> |
| General Recidivism            | <b><i>p</i> = .037</b> | AUC = .60, <i>p</i> = .062        | <i>p</i> = .065        |
| Violent Recidivism            | <b><i>p</i> = .008</b> | <b>AUC = .76, <i>p</i> = .008</b> | <i>p</i> = .054        |
| Non-Contact Sexual Recidivism | <i>p</i> = .331        | AUC = .56, <i>p</i> = .432        | <i>p</i> = .567        |
| Contact Sexual Recidivism     | <i>p</i> = .611        | AUC = .42, <i>p</i> = .646        | <i>p</i> = .357        |
| <b>STABLE-2007</b>            |                        |                                   |                        |
| Total Recidivism              | <b><i>p</i> = .046</b> | <b>AUC = .61, <i>p</i> = .026</b> | <b><i>p</i> = .005</b> |
| General Recidivism            | <b><i>p</i> = .049</b> | <b>AUC = .62, <i>p</i> = .026</b> | <b><i>p</i> = .027</b> |
| Violent Recidivism            | <i>p</i> = .992        | AUC = .51, <i>p</i> = .944        | <i>p</i> = .482        |
| Non-Contact Sexual Recidivism | <i>p</i> = .640        | AUC = .54, <i>p</i> = .631        | <i>p</i> = .349        |
| Contact Sexual Recidivism     | <i>p</i> = .938        | AUC = .54, <i>p</i> = .836        | <i>p</i> = .387        |

### Incremental Static-99R and STABLE-2007 Risk Classification Predictions

STABLE-2007 did not provide incremental validity for any of the raw or classification risk logistic regression analyses (see Table 15).

Table 15. Relative Risks of Recidivism as a Function of Static-99R and STABLE-2007.

| Recidivism Offense | Risk Classifications   |   |   |
|--------------------|------------------------|---|---|
|                    | Static-99R             |   |   |
|                    | Low-Moderate           | Moderate-High                           | High                                    |
| Total Recidivism   | $RR = 2.17, p = .181$  | <b><math>RR = 3.43, p = .024</math></b> | <b><math>RR = 3.17, p = .040</math></b> |
| General Recidivism | $RR = 2.71, p = .170$  | <b><math>RR = 4.16, p = .040</math></b> | $RR = 3.35, p = .088$                   |
| Violent Recidivism | $RR = .556, p = .767$  | $RR = 3.67, p = .375$                   | $RR = 6.29, p = .205$                   |
|                    | STABLE-2007            |   |   |
|                    | Moderate               | High                                    |   |
| Total Recidivism   | $RR = 13.34, p = .063$ | $RR = 12.95, p = .067$                  |   |
| General Recidivism | $RR = 10.05, p = .098$ | $RR = 10.85, p = .089$                  |   |

*Note.* Low Risk cell used at control condition in each RR estimation.

Table 16. Combined Static-99R and STABLE-2007 Raw Scores as a Recidivism Predictor.

| Recidivism Offense            | Wald       | AUC                                     |
|-------------------------------|------------|---|
| Total Recidivism              | $p = .003$ | <b>AUC = .66, <math>p = .002</math></b> |
| General Recidivism            | $p = .010$ | <b>AUC = .64, <math>p = .009</math></b> |
| Violent Recidivism            | $p = .092$ | AUC = .68, $p = .079$                   |
| Non-Contact Sexual Recidivism | $p = .300$ | AUC = .55, $p = .437$                   |
| Contact Sexual Recidivism     | $p = .300$ | AUC = .46, $p = .824$                   |

Table 17. Logistic Regression Raw Score and Classification Recidivism Predictions.

| Recidivism Prediction Protocols | B                    | SE   | Wald | p           |  | B                      | SE   | Wald | p           |
|---------------------------------|----------------------|------|------|-------------|--|------------------------|------|------|-------------|
|                                 | Raw Score Predictors |      |      |             |  | Categorical Predictors |      |      |             |
|                                 | Total Recidivism     |      |      |             |  | Total Recidivism       |      |      |             |
| Static-99R                      | -.205                | .087 | 5.52 | <b>.019</b> |  | -.380                  | .162 | 5.50 | <b>.019</b> |
| STABLE-2007                     | -.058                | .044 | 1.77 | .183        |  | -.410                  | .325 | 1.59 | .207        |
|                                 | General Recidivism   |      |      |             |  | General Recidivism     |      |      |             |
| Static-99R                      | -.137                | .089 | 2.41 | .121        |  | -.290                  | .169 | 2.93 | .087        |
| STABLE-2007                     | -.071                | .045 | 2.45 | .118        |  | -.474                  | .339 | 1.96 | .162        |

Table 17. cont.

| Recidivism Prediction Protocols | <i>B</i>                      | SE   | Wald | <i>p</i>    |  | <i>B</i>                      | SE   | Wald | <i>p</i>    |
|---------------------------------|-------------------------------|------|------|-------------|--|-------------------------------|------|------|-------------|
|                                 | <i>Raw Score Predictors</i>   |      |      |             |  | <i>Categorical Predictors</i> |      |      |             |
|                                 | Violent Recidivism            |      |      |             |  | Violent Recidivism            |      |      |             |
| Static-99R                      | -.619                         | .227 | 7.43 | <b>.006</b> |  | -1.31                         | .550 | 5.64 | <b>.018</b> |
| STABLE-2007                     | .116                          | .094 | 1.52 | .218        |  | .476                          | .670 | .505 | .477        |
|                                 | Non-Contact Sexual Recidivism |      |      |             |  | Non-Contact Sexual Recidivism |      |      |             |
| Static-99R                      | -.097                         | .123 | .624 | .430        |  | -.218                         | .241 | .816 | .366        |
| STABLE-2007                     | -.026                         | .062 | .173 | .677        |  | -.219                         | .470 | .218 | .641        |
|                                 | Contact Sexual Recidivism     |      |      |             |  | Contact Sexual Recidivism     |      |      |             |
| Static-99R                      | .134                          | .257 | .272 | .602        |  | .276                          | .438 | .399 | .528        |
| STABLE-2007                     | -.024                         | .141 | .028 | .867        |  | .365                          | 1.03 | .125 | .724        |

*Note.* All ten logistic regressions had 1 degree of freedom.

## **CHAPTER V**

### **DISCUSSION**

This study explored the predictive validity of both actuarial and dynamic risk assessment protocols on sex offender recidivism within a community sample of North Dakota offenders. The Static-99R and the STABLE-2007 were examined independently and then as combined predictors as suggested by prior research teams (Eher et al., 2012; Hanson et al., 2015). Both the Static-99R and STABLE-2007 were expected to provide moderate predictive accuracy within this rural community sample based on previous reports derived from larger and more diverse samples (Hanson & Thornton, 2000; Eher et al., 2012; Hanson et al., 2007; Eher et al., 2010; Lussier, Deslauriers-Varin, & Ratel, 2010). Analyses from the current study provided only partial support for the predictive validity of these assessment protocols. Offender age and duration of follow-up period were utilized as co-variates in this study. Results indicated that neither variable contributed to the variation evident in risk to re-offend in this sample.

The Static-99R evidenced utility in risk prediction in this study. Results indicate that the Static-99R raw scores were able to significantly distinguish between individuals who recidivated and those who did not in the Total ( $p = .005$ ), General ( $p = .037$ ), and Violent ( $p = .008$ ) recidivism categories, but not for the Non-Contact Sexual ( $p = .331$ ) and Contact Sexual ( $p = .611$ ) recidivism categories. Segregation of recidivists from non-recidivists was achieved by the Static-99R dimensional scores in the Total (AUC = .63) and Violent (AUC = .76) recidivism categories, but not in the General ( $p = .062$ ), Non-Contact Sexual ( $p = .432$ ), and Contact Sexual

( $p = .646$ ) recidivism categories. It should be noted that significance was approached in the General recidivism category ( $p = .062$ ). The Static-99R underachieved in contrast to previous reports (Barbaree et al., 2001; McGrath et al., 2009, Hanson & Thornton, 1999) in predicting either contact or non-contact sexual recidivism. It should be noted that a number of studies analyzing smaller samples reported AUCs of around .60 which were similar to this study for at least Total and Violent recidivism (Sreenivasan et al., 2007; Boccaccini, Murrie, Caperton, & Hawes, 2009).

The Static-99 and Static-99R have been shown to provide reasonably accurate predictions (AUC = .69) of Violent recidivism amongst sex offenders (Hanson & Thornton, 2000). The results from this study compared favorably (AUC = .76) with these prior prediction estimates derived from sex offender samples. While a value-added benefit, the Static-99R was developed for use in the prediction of sexual recidivism, with alternative risk assessment inventories found optimal for the prediction of violent recidivism (Hanson & Thornton, 2000).

Static-99R risk classifications were also examined to determine their usefulness in the prediction of the risk categories in this study. Chi-square analyses revealed that only Total recidivism ( $p = .019$ ) was predicted by the Static-99R risk classifications. Significance was approximated for both the General ( $p = .065$ ) and Violent ( $p = .054$ ) recidivism categories. Again, the Static-99R underperformed in the Non-Contact Sexual ( $p = .567$ ) and Contact Sexual ( $p = .357$ ) recidivism categories. Relative risk analyses were conducted as a post-hoc test of the risk classifications identified in the Static-99R (i.e. Low, Low-Moderate, Moderated-High, and High). Utilizing the Low risk category as the control condition, significant differences were found for the Moderate-High ( $p = .024$ ) and High ( $p = .040$ ) risk categories in the Total recidivism category. Those offenders classified as Moderate-High risk to recidivate evidenced

three times the relative risk to re-offend, suggesting an increased frequency of re-offense for these offenders. Additionally, those offenders identified as High risk to recidivate also evidenced three times the relative risk compared to those offenders identified as Low risk to re-offend. The General recidivism category also evidenced differences among the Static-99R risk categories, specifically, those offenders identified as Moderate-High risk to re-offend were four times more likely to re-offend than their Low risk category counterparts in this sample.

The STABLE-2007 evidenced limited predictive utility in this sample of offenders. Results indicate that the STABLE-2007 raw scores were able to significantly differentiate between recidivists and non-recidivists in the Total ( $p = .046$ ) and General ( $p = .049$ ) recidivism categories, but not for the Violent ( $p = .992$ ), Non-Contact Sexual ( $p = .640$ ), and Contact Sexual ( $p = .938$ ) recidivism categories. Segregation of recidivists from non-recidivists in this sample was achieved by the STABLE-2007 in both the Total (AUC = .61) and General (AUC = .62) recidivism categories, but not in the Violent ( $p = .944$ ), Non-Contact Sexual ( $p = .631$ ), or Contact Sexual ( $p = .836$ ) recidivism categories. While widely used as a dynamic measure of risk, there are only a few studies available providing moderate support for the ability of the STABLE-2007 to predict sexual offense recidivism (McGrath et al., 2009). The STABLE-2007 has been shown to predict sexual re-offense outcomes with AUCs ranging from 0.67 to 0.71 (Eher et al., 2012). The AUCs for sexual offense recidivism in this study were .54 for both Non-Contact and Contact Sexual recidivism. AUCs for the remaining risk categories ranged from .51 to .62 and more closely approximated the findings from previous studies investigating relevant re-offense categories in sexual offenders (Eher et al., 2012; Hanson et al., 2007; Eher et al., 2010; Lussier, Deslauriers-Varin, & Ratel, 2010).



STABLE-2007 risk classifications were also examined to determine their usefulness in the prediction of the risk categories in this study. Chi-square analyses revealed that only Total ( $p = .005$ ) and General ( $p = .027$ ) recidivism categories were predicted by the STABLE-2007 risk categories. Similar to the Static-99R, the STABLE-2007 underperformed in the Non-Contact Sexual ( $p = .349$ ) and Contact Sexual ( $p = .387$ ) risk categories. Relative risk analyses were conducted as a post-hoc test of the risk classifications identified in the STABLE-2007 (i.e. Low, Moderate, and High). As with the Static-99R, the Low risk category was utilized as the control condition, however, no significant differences between the risk classifications were identified, suggesting no change in relative risk to re-offend regardless of which risk classification was identified.

Static-99R and STABLE-2007 scores were standardized and combined to determine their usefulness as predictors of recidivism. Although previous studies of the Static-99R and STABLE-2007 cited the benefit of combining these measures when predicting sex offense recidivism (Eher et al., 2012; Hanson et al., 2015), these same benefits were not identified in this study for sexual recidivism. The combined standard scores were able to differentiate between recidivists and non-recidivists in the Total ( $p = .003$ ) and General ( $p = .010$ ) recidivism categories. Additionally, the combined standard scores were determined to be “fair” predictors of Total (AUC = .66,  $p = .002$ ) and General (AUC = .64,  $p = .009$ ) recidivism categories. It should be noted that the combination of these standard scores generated comparable predictive validity for Total and General recidivism to either protocol used independently. Combined scores did not enhance the accuracy of recidivism predictions for Violent, Non-Contact Sexual, and Contact Sexual offenses. Logistic regressions were then utilized to evaluate the extent to which the

STABLE-2007 added incremental validity to the Static-99R risk prediction. The STABLE-2007 did not add incremental validity for any of the recidivism categories reviewed in this study.

Evidence regarding the merits of combining actuarial and dynamic risk assessment measures has been mixed. The STABLE-2007 and Static-99 or Static-99R have been found to provide good predictive accuracy in only general and violent recidivism (Eher et al., 2012). The STABLE-2007 and Static-99R were recently combined in a Canadian sample where all forms of recidivism evidenced incremental predictive accuracy (Hanson et al., 2015). Both of these studies involved non-U.S. samples where effect sizes have trended higher than in this country (Hanson & Morton-Bourgon, 2009). In the current study, the combination of the actuarial and dynamic risk measures appeared comparable in predictive accuracy to either protocol used in isolation for the Total and General recidivism categories. Combined scores were not significantly predictive of Violent, Non-Contact Sexual, and Contact Sexual re-offenses. While the combined assessments did anticipate Total and General recidivism, the resulting AUCs were found to be “fair” and did not represent a significant clinical enhancement in prediction.

In summary, the Static-99R was found to differentiate between recidivists and non-recidivists in the Total, General, and Violent recidivism categories which was consistent with prior small-scale studies (Hanson & Thornton, 2000). The STABLE-2007 was found to differentiate between recidivists and non-recidivists in the Total and General recidivism categories which was also consistent with prior research regarding general, non-sexual re-offenses (Eher et al., 2012; Hanson et al., 2007; Eher et al., 2010; Lussier, Deslauriers-Varin, & Ratel, 2010). Combined Static-99R and STABLE-2007 raw scores were predictive of Total and General recidivism, but evidence of incremental validity secondary to the inclusion of the STABLE-2007 was not found in this sample.

## CHAPTER VI

### LIMITATIONS

Interpretive caution was warranted by a number of design limitations in this study. First, the sample in this study was small ( $n = 136$ ) compared to most studies investigating the Static-99R and STABLE-2007 risk assessment measures (Hanson & Morton-Bourgon, 2009; Hanson et al., 2007; Eher et al., 2010; Hanson, Helmus, & Harris, 2015). The small sample size is theorized to have been in part responsible for the null findings throughout this study. Additionally, there was a lack of ethnic diversity in this sample, specifically the sample consisted of primarily Caucasian (68.4%) males. Future studies would benefit from a larger array of ethnicities as well as a larger sample size in general. This study highlighted the importance of investigating risk assessment measures in various jurisdictions as previous research has been mixed (Lussier & Davies, 2011; Bengtson & Langstrom, 2007; Quinsey, Harris, Rice, & Cormier, 1998) when investigated in various states and countries (Hanson & Morton-Bourgon, 2009). As such, future studies should continue to evaluate the usefulness of these measures independently and combined within their own jurisdictions and countries.

A second limitation concerns the length of time of the follow-up period in this study. This study investigated crimes committed since the completion of the Static-99R and STABLE-2007 assessment measures. The maximum length of time in this study was 7.8 years. This amount of time is considerably shorter than other studies investigating similar risk assessment measures (Mills & Gray, 2013; Hanson & Morton-Bourgon, 2009; Hanson et al., 2007; Eher et al., 2010;

Hanson, Helmus, & Harris, 2015). Future studies may benefit from examining longer follow-up periods.

A third limitation involves the measures examined in this study. Although both the Static-99R and the STABLE-2007 are still regularly used throughout the state of North Dakota, as well as other states, jurisdictions, and countries (Hanson, Helmus, & Harris, 2015; Hanson & Morton-Bourgon, 2009), an updated version of the former (Static-2002R) may have performed at a higher level for a number of reasons. First, the Routine and the High Risk/High Need (HRHN) are the only norms available for samples, as the samples pre-selected for treatment needs, as the differences between the routine and treatment needs samples were no longer useful with the addition of three new routine samples. Second, different relative risk parameters are now present. The new samples used in the Static-2002R allow for the variability in the relative risk parameters to be significant or approach significance with lower increases in relative risk per score in the HRHN samples than in the Routine Samples (Phenix, Leslie-Maaike Helmus & Hanson, 2015). The use of this measure may have aided in reducing the number of null results found in this study. Future studies should utilize the most recent version of the Static risk assessment measure to determine if the predictive accuracy is enhanced through the use of this updated measure.

## **CHAPTER VII**

### **FUTURE DIRECTIONS**

Further evaluation of the Static-99R and STABLE-2007, both independently and in combination remains warranted given prior research showing their merits in the prediction of sexual re-offending. Another potential direction of research from this study involves the examination of additional assessment measure combinations (i.e. VRS-SO, PCL-R, RRASOR, SCAJ-Min, etc.) to determine if predictive accuracy is enhanced through the use of differing measures of recidivism including those for violent, general, and sexual recidivism. It does seem important to continue efforts to generate outcome data for violence risk assessments from samples that are diverse in every possible relevant factor influencing recidivism.

## REFERENCES

- Ægisdóttir, S., White, M. J., Spengler, P. M., Maugherman, A. S., Anderson, L. A., Cook, R. S., ... & Rush, J. D. (2006). The meta-analysis of clinical judgment project: Fifty-six years of accumulated research on clinical versus statistical prediction. *The Counseling Psychologist, 34*(3), 341-382.
- Allan, M., Grace, R. C., Rutherford, B., & Hudson, S. M. (2007). Psychometric Assessment of Dynamic Risk Factors for Child Molesters. *Sexual Abuse: A Journal of Research and Treatment, 19*(4), 347-367. doi:10.1007/s11194-007-9052-5
- Andrews, D. A., & Bonta, J. L. (1995). *The Level of Service Inventory: Revised user's manual*. North Towanda, NY: Multi-Health Systems.
- Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct*. Routledge.
- Andrews, D. A., Bonta, J., & Wormith, S. J. (2006). The Recent Past and Near Future of Risk and/or Need Assessment. *Crime & Delinquency, 52*(1), 7-27.  
doi:10.1177/0011128705281756
- Babchishin, K. M., Hanson, R. K., & Helmus, L. (2012). Even Highly Correlated Measures Can Add Incrementally to Predicting Recidivism Among Sex Offenders. *Assessment, 19*(4), 442-461. doi:10.1177/1073191112458312
- Barbaree, H. E., Seto, M. C., Langton, C. M., & Peacock, E. J. (2001). Evaluating the Predictive Accuracy of Six Risk Assessment Instruments for Adult Sex Offenders. *Criminal Justice and Behavior, 28*(4), 490-521. doi:10.1177/009385480102800406

- Barbaree, H. E., Langton, C. M., Blanchard, R., & Cantor, J. M. (2009). Aging Versus Stable Enduring Traits as Explanatory Constructs in Sex Offender Recidivism: Partitioning Actuarial Prediction Into Conceptually Meaningful Components. *Criminal Justice and Behavior, 36*(5), 443-465. doi:10.1177/0093854809332283
- Barbaree, H. E., Langton, C. M., & Peacock, E. J. (2006). The Factor Structure of Static Actuarial Items: Its Relation to Prediction. *Sex Abuse Sexual Abuse: A Journal of Research and Treatment, 18*(2), 207-226. doi:10.1007/s11194-006-9011-6
- Bartosh, D. L., Garby, T., Lewis, D., & Gray, S. (2003). Differences in the Predictive Validity of Actuarial Risk Assessments in Relation to Sex Offender Type. *International Journal of Offender Therapy and Comparative Criminology, 47*(4), 422-438.  
doi:10.1177/0306624x03253850
- Beech, A. R., Fisher, D. D., & Thornton, D. (2003). Risk assessment of sex offenders. *Professional Psychology: Research and Practice, 34*(4), 339-352. doi:10.1037/0735-7028.34.4.339
- Bengtson, S., & Langstrom, N. (2007). Unguided Clinical and Actuarial Assessment of Re-offending Risk: A Direct Comparison with Sex Offenders in Denmark. *Sexual Abuse: A Journal of Research and Treatment, 19*(2), 135-153. doi:10.1177/107906320701900205
- Boccaccini, M. T., Murrie, D. C., Caperton, J. D., & Hawes, S. W. (2009). Field validity of the STATIC-99 and MnSOST-R among sex offenders evaluated for civil commitment as sexually violent predators. *Psychology, Public Policy, and Law, 15*(4), 278-314.  
doi:10.1037/a0017232
- Bonta, J. (1996). Risk-needs assessment and treatment. In A. T. Harland (Ed.), *Choosing correctional options that work* (pp. 18-32). Thousand Oaks, CA: Sage.

- Bonta, J., & Andrews, D. A. (2008). Risk-need-responsivity model for offender assessment and rehabilitation. *Rehabilitation, 6*, 1-22.
- Brouillette-Alarie, S., & Proulx, J. (2008). Predictive and convergent validity of phallometric assessment in relation to sexual recidivism risk. In *Poster presented at the annual conference for the Association for the Treatment of Sexual Abusers, Atlanta, GA.*
- Brouillette-Alarie, S., & Proulx, J. (2013). Predictive validity of the Static-99R and its dimensions. *Journal of Sexual Aggression, 19*(3), 311-328.  
doi:10.1080/13552600.2012.747630
- Bureau of Justice Statistics (BJS). (2015). *Bureau of Justice Statistics (BJS)*. Retrieved September 1, 2016, from <http://www.bjs.gov/content/pub/pdf/cv14.pdf>
- Dolan, M., & Doyle, M. (2000). Violence risk prediction: Clinical and actuarial measures and the role of the Psychopathy Checklist. *The British Journal of Psychiatry, 177*(4), 303-311.  
doi:10.1192/bjp.177.4.303
- Doren, D. (2002). Evaluating Sex Offenders. doi:10.4135/9781412990059
- Dowden, C., Antonowicz, D., & Andrews, D. A. (2003). The Effectiveness of Relapse Prevention with Offenders: A Meta-Analysis. *International Journal of Offender Therapy and Comparative Criminology, 47*(5), 516-528. doi:10.1177/0306624x03253018
- Eher, R., Matthes, A., Schilling, F., Haubner-Maclean, T., & Rettenberger, M. (2011). Dynamic Risk Assessment in Sexual Offenders Using STABLE-2000 and the STABLE-2007: An Investigation of Predictive and Incremental Validity. *Sexual Abuse: A Journal of Research and Treatment, 24*(1), 5-28. doi:10.1177/1079063211403164
- Epperson, D. L. (1998). Minnesota Sex Offender Screening Tool–Revised (MNSOST–R). *Encyclopedia of Psychology and Law*. doi:10.4135/9781412959537.n199



- Finkelhor, D., & Jones, L. (2015). Have Sexual Abuse and Physical Abuse Declined Since the 1990s? *Crimes Against Children Research Center*, 1-4. doi:10.1037/e534942013-001
- Gore, K. S. (2007). *Adjusted actuarial assessment of sex offenders: The impact of clinical overrides on predictive accuracy*. ProQuest.
- Grove, W. M., Zald, D. H., Lebow, B. S., Snitz, B. E., & Nelson, C. (2000). Clinical versus mechanical prediction: A meta-analysis. *Psychological Assessment*, 12(1), 19-30. doi:10.1037/1040-3590.12.1.19
- Grubin, D. (1998). *Sex offending against children: Understanding the risk* (Vol. 99). London, United Kingdom: Home Office, Policing and Reducing Crime Unit, Research, Development and Statistics Directorate.
- Guay, J.-P. (2006). Actuarial versus clinical prediction: The end of a tradition. *Revue internationale de criminologie et de police technique et scientifique*, 59.
- Hanson, R. K. (1997). The development of a brief actuarial risk scale for sexual offense recidivism (User Report 97-04). Ottawa, Ontario, Canada: Department of the Solicitor General of Canada.
- Hanson, R. K., & Harris, A. J. (1999). Where Should We Intervene?: Dynamic Predictors of Sexual Offense Recidivism. *Current Perspectives on Sex Crimes Current Perspectives on Sex Crimes*, 300-319. doi:10.4135/9781452229454.n23
- Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, 66(2), 348-362. doi:10.1037//0022-006x.66.2.348
- Hanson, R. K., & Harris, A. J. (1998). *Dynamic predictors of sexual recidivism*. Ottawa: Solicitor General Canada.

- Hanson, R. K., & Thornton, D. (2000). Improving risk assessments for sex offenders: A comparison of three actuarial scales. *Law and Human Behavior, 24*(1), 119-136.  
doi:10.1023/a:1005482921333
- Hanson, R. K., & Thornton, D. (1999). *Static 99: Improving actuarial risk assessments for sex offenders* (Vol. 2). Ottawa,, Canada: Solicitor General Canada.
- Hanson, R. K., & Harris, A. J. (2001). A Structured Approach to Evaluating Change Among Sexual Offenders. *Sexual Abuse: A Journal of Research and Treatment, 13*(2), 105-122.  
doi:10.1177/107906320101300204
- Hanson, R. K. (2002). Introduction to the Special Section on Dynamic Risk Assessment With Sex Offenders. *Sexual Abuse: A Journal of Research and Treatment, 14*(2), 99-101.  
doi:10.1177/107906320201400202
- Hanson, R. K., & Morton-Bourgon, K. E. (2005). The Characteristics of Persistent Sexual Offenders: A Meta-Analysis of Recidivism Studies. *Journal of Consulting and Clinical Psychology, 73*(6), 1154-1163. doi:10.1037/0022-006x.73.6.1154
- Hanson, R. K., & Morton-Bourgon, K. (2007). *The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis*. Ottawa: Public Safety and Emergency Preparedness Canada.
- Hanson, R. K., & Morton-Bourgon, K. E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment, 21*(1), 1-21. doi:10.1037/a0014421
- Hanson, R. K., Lunetta, A., Phenix, A., Neeley, J., & Epperson, D. (2014). The field validity of Static-99/R sex offender risk assessment tool in California. *Journal of Threat Assessment and Management, 1*(2), 102-117. doi:10.1037/tam0000014

- Hanson, R. K., Helmus, L., & Harris, A. J. (2015). Assessing the Risk and Needs of Supervised Sexual Offenders: A Prospective Study Using STABLE-2007, Static-99R, and Static-2002R. *Criminal Justice and Behavior*, *42*(12), 1205-1224.  
doi:10.1177/0093854815602094
- Hare, R. D. (2003). Hare Psychopathy Checklist–Revised (PCL-R)–2nd ed. Technical manual. Toronto, Canada: Multi-Health Systems.
- Hare, R. D. (1991). Hare Psychopathy Checklist-Revised. *PsycTESTS Dataset*.  
doi:10.1037/t04993-000
- Harris, A. J., & Hanson, R. K. (2010). Clinical, actuarial and dynamic risk assessment of sexual offenders: Why do things keep changing? *Journal of Sexual Aggression*, *16*(3), 296-310.  
doi:10.1080/13552600.2010.494772
- Harris, G. T., Rice, M. E., & Quinsey, V. L. (1993). Violent Recidivism of Mentally Disordered Offenders: The Development of a Statistical Prediction Instrument. *Criminal Justice and Behavior*, *20*(4), 315-335. doi:10.1177/0093854893020004001
- Harris, G. T., Rice, M. E., Quinsey, V. L., Lalumière, M. L., Boer, D., & Lang, C. (2003). A Multisite Comparison of Actuarial Risk Instruments for Sex Offenders. *Psychological Assessment*, *15*(3), 413-425. doi:10.1037/1040-3590.15.3.413
- Hart, S. D. (1998). The role of psychopathy in assessing risk for violence: Conceptual and methodological issues. *Legal and Criminological Psychology*, *3*(1), 121-137.  
doi:10.1111/j.2044-8333.1998.tb00354.x

- Helmus, L., Babchishin, K. M., & Blais, J. (2011). Predictive Accuracy of Dynamic Risk Factors for Aboriginal and Non-Aboriginal Sex Offenders: An Exploratory Comparison Using STABLE-2007. *International Journal of Offender Therapy and Comparative Criminology*, 56(6), 856-876. doi:10.1177/0306624x11414693
- Helmus, L., Thornton, D., Hanson, R. K., & Babchishin, K. M. (2011). Improving the Predictive Accuracy of Static-99 and Static-2002 With Older Sex Offenders: Revised Age Weights. *Sexual Abuse: A Journal of Research and Treatment*, 24(1), 64-101. doi:10.1177/1079063211409951
- Jackson, R. L., & Richards, H. J. (2007). Diagnostic and Risk Profiles Among Civilly Committed Sex Offenders in Washington State. *International Journal of Offender Therapy and Comparative Criminology*, 51(3), 313-323. doi:10.1177/0306624x06292874
- Jackson, R. L., & Hess, D. T. (2007). Evaluation for Civil Commitment of Sex Offenders: A Survey of Experts. *Sexual Abuse: A Journal of Research and Treatment*, 19(4), 425-448. doi:10.1007/s11194-007-9062-3
- Langton, C. M., Barbaree, H. E., Seto, M. C., Peacock, E. J., Harkins, L., & Hansen, K. T. (2007). Actuarial Assessment of Risk for Reoffense Among Adult Sex Offenders: Evaluating the Predictive Accuracy of the Static-2002 and Five Other Instruments. *Criminal Justice and Behavior*, 34(1), 37-59. doi:10.1177/0093854806291157
- Lehmann, R. J., Hanson, R. K., Babchishin, K. M., Gallasch-Nemitz, F., Biedermann, J., & Dahle, K. (2013). Interpreting multiple risk scales for sex offenders: Evidence for averaging. *Psychological Assessment*, 25(3), 1019-1024. doi:10.1037/a0033098

- Looman, J., Morphet, N. A., & Abracen, J. (2012). Does Consideration of Psychopathy and Sexual Deviance Add to the Predictive Validity of the Static-99R? *International Journal of Offender Therapy and Comparative Criminology*, 57(8), 939-965.  
doi:10.1177/0306624x12444839
- Lussier, P., Deslauriers-Varin, N., & Râtel, T. (2010). A descriptive profile of high-risk sex offenders under intensive supervision in the province of British Columbia, Canada. *International journal of offender therapy and comparative criminology*, 54(1), 71-91.
- Lussier, P., & Davies, G. (2011). A person-oriented perspective on sexual offenders, offending trajectories, and risk of recidivism: A new challenge for policymakers, risk assessors, and actuarial prediction? *Psychology, Public Policy, and Law*, 17(4), 530-561.  
doi:10.1037/a0024388
- Mann, R. E., Hanson, R. K., & Thornton, D. (2010). Assessing Risk for Sexual Recidivism: Some Proposals on the Nature of Psychologically Meaningful Risk Factors. *Sexual Abuse: A Journal of Research and Treatment*, 22(2), 191-217.  
doi:10.1177/1079063210366039
- McGrath, R. J., Cumming, G. F., Burchard, B. L., Zeoli, S., & Ellerby, L. (2009). Current practices and emerging trends in sexual abuser management. *The Safer Society*, 24.
- Meehl, P. E. (2002). CLIOMETRIC METATHEORY: II. CRITERIA SCIENTISTS USE IN THEORY APPRAISAL AND WHY IT IS RATIONAL TO DO SO (Monograph Supplement 1-V91). *Psychological Reports PR*, 91(6), 339. doi:10.2466/pr0.91.6.339-404

- Menzies, R., Webster, C. D., Mcmain, S., Staley, S., & Scaglione, R. (1994). The dimensions of dangerousness revisited: Assessing forensic predictions about violence. *Law and Human Behavior, 18*(1), 1-28. doi:10.1007/bf01499141
- Mills, J. F., Kroner, D. G., & Morgan, R. D. (2011). *Clinician's guide to violence risk assessment*. New York: Guilford Press.
- Mills, J. F., & Gray, A. L. (2013). Two-tiered violence risk estimates: A validation study of an integrated-actuarial risk assessment instrument. *Psychological Services, 10*(4), 361-371. doi:10.1037/a0032608
- Mossman, D. (2006). Another Look at Interpreting Risk Categories. *Sex Abuse Sexual Abuse: A Journal of Research and Treatment, 18*(1), 41-63. doi:10.1007/s11194-006-9001-8
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Parent, G., Guay, J. P., & Knight, R. A. (2011). An assessment of long-term risk of recidivism by adult sex offenders: One size doesn't fit all. *Criminal Justice and Behavior, 38*(2), 188-209.
- Parent, G., Guay, J., & Knight, R. A. (2012). Can We Do Better?: The Assessment of Risk of Recidivism by Adult Sex Offenders. *Criminal Justice and Behavior, 39*(12), 1647-1667. doi:10.1177/0093854812451680
- Paulhus, D. L., Robins, R. W., Trzesniewski, K. H., & Tracy, J. L. (2004). Two Replicable Suppressor Situations in Personality Research. *Multivariate Behavioral Research, 39*(2), 303-328. doi:10.1207/s15327906mbr3902\_7
- Phenix, A., Maaik-Helmus, L., & Hanson, R. K. (2015). *Static-99R and Static-2002R Evaluator's Workbook*. doi:661841-V6

- Quinsey, V. L., Harris, G. T., Rice, M. E., & Cormier, C. A. (2006). Violent offenders: Appraising and managing risk (2nd ed.). doi:10.1037/11367000
- Quinsey, V. L., Harris, G. T., Rice, M. E., & Cormier, C. A. (1998). Sex offenders. *Violent Offenders: Appraising and Managing Risk.*, 119-137. doi:10.1037/10304-007
- Quinsey, V. L., & Ambtman, R. (1979). Variables affecting psychiatrists' and teachers' assessments of the dangerousness of mentally ill offenders. *Journal of Consulting and Clinical Psychology*, 47(2), 353-362. doi:10.1037//0022-006x.47.2.353
- Romine, R. E., Miner, M. H., Poulin, D., Dwyer, S. M., & Berg, D. (2012). Predicting Reoffense for Community-Based Sexual Offenders: An Analysis of 30 Years of Data. *Sexual Abuse: A Journal of Research and Treatment*, 24(5), 501-514.  
doi:10.1177/1079063212446514
- Seto, M. C. (2005). Is More Better? Combining Actuarial Risk Scales to Predict Recidivism Among Adult Sex Offenders. *Psychological Assessment*, 17(2), 156-167.  
doi:10.1037/1040-3590.17.2.156
- Smid, W. J., Kamphuis, J. H., Wever, E. C., & Van Beek, D. J. (2014). A comparison of the predictive properties of nine sex offender risk assessment instruments. *Psychological assessment*, 26(3), 691.
- Sowden, J. N., & Olver, M. E. (2016). Use of the Violence Risk Scale—Sexual Offender Version and the Stable 2007 to Assess Dynamic Sexual Violence Risk in a Sample of Treated Sexual Offenders. *Psychological Assessment*. doi:10.1037/pas0000345

- Sreenivasan, S., Garrick, T., Norris, R., Cusworth-Walker, S., Weinberger, L. E., Essres, G., ... & Fain, T. (2007). Predicting the likelihood of future sexual recidivism: Pilot study findings from a California sex offender risk project and cross-validation of the Static-99. *Journal of the American Academy of Psychiatry and the Law Online*, 35(4), 454-468.
- Stadtland, C., Hollweg, M., Kleindienst, N., Dietl, J., Reich, U., & Nedopil, N. (2005). Risk assessment and prediction of violent and sexual recidivism in sex offenders: Long-term predictive validity of four risk assessment instruments. *Journal of Forensic Psychiatry & Psychology*, 16(1), 92-108. doi:10.1080/1478994042000270247
- Wong, S., Olver, M. E., Nicholaichuk, T. P., & Gordon, A. (2003). The Violence Risk Scale: Sexual Offender version (VRS-SO). Saskatoon, Saskatchewan, Canada: Regional Psychiatric Centre and University of Saskatchewan.
- Wormith, J. S., Hogg, S., & Guzzo, L. (2012). The Predictive Validity of a General Risk/Needs Assessment Inventory on Sexual Offender Recidivism and an Exploration of the Professional Override. *Criminal Justice and Behavior*, 39(12), 1511-1538. doi:10.1177/0093854812455741