Utility of the Static-99 and Static-99R With Latino Sex Offenders

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Abstract

The predictive validity of the Static-99 measures with ethnic minorities in the United States has only recently been assessed with mixed results. We assessed the predictive validity of the Static-99 and Static-99R with a sample of Latino sex offenders ($N = 483$) as well as with two subsamples (U.S.-born, including Puerto Rico, and non-U.S.-born). The overall sexual recidivism rate was very low (1.9%). Both the Static-99 measures were able to predict sexual recidivism for offenders born in the United States and Puerto Rico, but neither was effective in doing so for other Latino immigrants. Calibration analyses ($N = 303$) of the Static-99R were consistent with the literature and provided support for the potential use of the measure with Latinos born in the United States and Puerto Rico. These findings and their implications are discussed as they pertain to the assessment of Latino sex offenders.

Actuarial measures of sex offense recidivism risk are broadly used by researchers, evaluators, and clinicians in the United States (Babchishin, Hanson, & Blais, 2015; Claussen-Schulz, Pearce, & Schopp, 2004; Jackson & Hess, 2007). These measures have taken on an important role in the assessment of sex offenders and can play a crucial role in decisions ranging from the intensity of treatment received, to the release

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and/or supervision of sex offenders (Falk, 1999) to determination of the need for commitment as a sexually violent predator (Calkins, Jeglic, Beattey, Zeidman, & Perillo, 2014; Hamilton, 2011).

Actuarial risk assessment involves the measurement of the likelihood of an offender's target behavior on a limited set of factors, using a numerical weighting system; usually, the factors are derived from empirical research, and the total score of the factors is used as a recidivism risk score (Hanson & Thornton, 2000). This method has been found to be consistently more accurate than unstructured clinical judgment in predicting sexual and violent recidivism (Hanson & Morton-Bourgon, 2004, 2009).

The Static-99 (Hanson & Thornton, 2000) remains the most utilized sex offense risk assessment measure (Hanson, Thornton, Helmus, & Babchishin, 2015; Viljoen, McLachlan, & Vincent, 2010). A revised version of the measure, the Static-99R (Helmus, Thornton, Hanson, & Babchishin, 2012) was created by modifying one item from the Static-99 to account for a decrease in reoffending as offenders' age. Both measures have been found to have strong interrater reliability (e.g., Barbaree, Seto, Langton, & Peacock, 2001; de Vogel, de Ruiter, van Beek, & Mead, 2004; Hanson, Lunetta, Phenix, Neeley, & Epperson, 2014).

The Static-99 has exhibited at least moderate predictive validity (i.e., discriminating between recidivists and non-recidivists) for sexual recidivism using a variety of samples, with area under the curve (AUC) values ranging from 0.62 in a U.S. sample (Sreenivasan et al., 2007) to 0.78 for an Australian sample (Allan, Dawson, & Allan, 2006). The Static-99R has shown improved performance over the Static-99, with reported AUC values of 0.73 for a Canadian sample (Brouillette-Alarie & Prouxl, 2012) and 0.74 for a Dutch sample (Smid, Kamphuis, Wever, & van Beek, 2014).

However, discrimination alone provides an incomplete picture of a measure's predictive validity (Singh, 2013). The extent to which a measure's predictions of risk correspond to actual observed risk must also be determined (i.e., calibration; Singh, 2013). Hanson, Lunetta et al. (2014) described two approaches to assess the calibration properties of the Static-99R. The first approach involves the assessment of the fit between the expected (E) and observed (O) recidivism rates, by dividing the number of expected recidivists by the number of observed recidivists (E/O). The number of expected recidivists for a specific sample is obtained by using the percentage of expected recidivists in the normative sample for the measure. A 95% confidence interval (CI) for the ratio is calculated using the formula included provided by Rockhill, Byrne, Rosner, Louie, and Colditz (2003):

$$95\% \text{ CI} \left(\text{E/O} \right) = \left(\text{E/O} \right) \exp \left(\pm 1.96 \times \sqrt{1/\text{O}} \right).$$

Perfect calibration is denoted by an E/O index value of 1.0 (Hanson, Lunetta et al., 2014). Significant differences between the Expected and Observed rates are inferred from a 95% CI that does not contain the value of 1.0.

The second approach described by Hanson, Lunetta, and colleagues (2014) involves the comparison of logistic regression coefficients obtained in a study to those previously reported in the literature. Hanson, Lunetta et al. (2014) suggested centering the

logistic regression equation on the value of two, which corresponds to the score of the median offender. For example, when studying an ethnically diverse California sample, Hanson Lunetta et al. (2014) used the regression parameters based on a follow-up period of at least 5 years reported previously (Hanson, Babchishin, Helmus, & Thornton, 2013, Appendix Table B1: $B0_2 = -2.941$, standard error [SE] = 0.238; $B1 = 0.331$, SE 0.044) for comparison with the regression parameters they derived in their study. As Hanson, Lunetta et al. (2014) explained, the first regression coefficient ($B0_2$) ". . . represents the expected recidivism rate for a Static-99R score of 2 (p_2) in logit units (ln[$p2/\{1-p2\}$])" (p. 16). Hanson, Lunetta, and colleagues (2014) also determined the relative increase in risk of each increase in score on the Static-99R using the formula e^{B1}, where $B1$ is the model's regression coefficient and the adjusted 5-year recidivism rate for a Static-99R score of 2 using the formula $1/(1 + e^{B02})$, where $B0_2$ is the intercept's regression coefficient when scores on the measure are centered on the score of 2.

Use of the Static-99 and Static-99R With Non-Whites

The predictive accuracy of Static-99 and Static-99R needs be supported empirically with ethnically diverse samples before these measures can be used with confidence, particularly in the United States where racially and ethnically diverse correctional populations are the norm. Latinos are one of the fastest growing populations in U.S. prison and currently comprise approximately 22% of those incarcerated in state and federal prisons (Carson, 2014). The Static-99 development sample relied primarily on a Canadian offender sample, where less than 1% of the Canadian correctional population identifies as Latino (Trevethan & Rastin, 2004). Although recent Static-99R norms rely more heavily on U.S. data (Helmus, 2009), U.S. samples still made up a minority (approximately 25%) of the study samples used in development of the Static-99R norms. Most of the studies used in the re-norming were from Commonwealth and European countries, places with a very low number of Latinos. Previous authors have remarked that the Static-99 may have limited applicability to ethnically diverse people in the United States (Sreenivasan et al., 2007). Findings across the few studies that have assessed the predictive validity of Static-99 and Static-99R across different ethnicities have been inconsistent (see Table 1). Therefore, the applicability of the Static-99 measures with diverse offender populations has not been well established, particularly with respect to U.S. Latinos.

Some authors have found the Static-99 and/or Static-99R to work well with non-European samples (Babchishin, Blais, & Helmus, 2012; Hanson, Lunetta et al., 2014; Smallbone & Rallings, 2013). For example, Smallbone and Rallings (2013) reported that the Static-99 performed well with a small sample ($n = 67$) of indigenous Australians, but noted that the same was not the case for the Static-99R and urged more research using that measure. Babchishin et al. (2012) conducted a meta-analysis based on five studies that included indigenous Canadian participants and found that both the Static-99 and Static-99R successfully discriminated recidivists from non-recidivists with fairly strong effect sizes (AUCs of 0.698 for random effects and 0.718 for fixed effects).

Table 1. Predictive Validity of the Static-99 and Static-99R for Sex Offense Recidivism With Non-European Samples.

Author(s)	Sample	n	Base rate %	M score Static-99	M score Static-99R	AUC Static-99	AUC Static-99R
Långström (2004)	African/ Asians	128	3.1	3.05[a]	—	0.50, *ns*	—
Smallbone and Rallings (2013)	Indigenous Australians	67	9	4.04[a]	3.72[a]	0.76	0.61, *ns*
Babchishin, Blais, and Helmus (2012)	Indigenous Canadians	319	16	3.9[a]	4.01[a]	0.70	0.71
Varela, Boccaccini, Murrie, Caperton, and Gonzalez (2013)	U.S. African Americans	441	2.7	3.66[a]	3.29[a]	0.58, *ns*	0.65, *ns*
Varela et al. (2013)	U.S. Latinos	589	3.1	2.51[b]	2.08	0.59, *ns*	0.57, *ns*
Hanson, Lunetta et al. (2014)	U.S. African Americans	99	7.1	3.2[c]	2.7[c]	0.75	0.77
Hanson, Lunetta et al. (2014)	U.S. Latinos	200	2.5	2.0[c]	1.8[c]	0.75, *ns*	0.73, *ns*

Note. AUC = area under the curve.
[a]Mean score was significantly higher than European/White groups.
[b]Mean score was significantly lower than comparison group(s).
[c]Although the Hanson et al. (2014) reported a significant overall difference in mean scores among groups, they did not include information about post hoc analyses.

Hanson, Lunetta and colleagues (2014) reported similar findings with respect to African Americans in a field study of diverse (White, African American, and Latino) sex offenders in California. However, although the AUC values for Latinos were higher than 0.73 on both Static-99 measures, they did not reach statistical significance. Hanson and his colleagues noted that the low number of recidivists per group limited statistical power. Nonetheless, the Static-99R performed well with African Americans and Latinos in terms of *relative* risk, based on part of their calibration analyses. Using the entire sample of Whites, African Americans, and Latinos, Hanson et al.'s (2014) comparison of expected versus observed recidivism rates yielded only one significant difference, which centered on the Low-Moderate Risk group, with the observed recidivism rate for their entire sample being lower than the expected rate. In addition, regression analyses using the entire sample revealed that relative risk increased along with increments on the measure's total score (Hanson et al., 2014). However, regression coefficients for their entire sample, as well as for Latinos in particular, were somewhat different from those obtained from pooled samples by Hanson et al. (2013). The expected recidivism rate for a Static-99R score of two was somewhat lower, but the relative risk somewhat higher. These studies provide some support for the use of the measures with indigenous populations in Canada and Australia as well as with African Americans and Latinos in

California; nonetheless, Hanson, Lunetta et al. (2014) noted the potential need to validate the measures in specific localities.

However, Långström (2004) and Varela, Boccaccini, Murrie, Caperton, and Gonzalez (2013) found the measure(s) to be unable to predict sexual recidivism in their samples. Långström (2004) reported that the Static-99 performed no better than chance in predicting sexual or violent recidivism among African/Asian sexual offenders in Sweden. Varela and colleagues (2013) were the first to assess the cross-cultural validity of the Static-99 and Static-99R among U.S. ethnic minority sex offenders using a large sample (*N* = 1,911) from Texas. Despite having large sample size, they found the recidivism rates for African Americans and Latinos to be rather low (less than 3.2%). Moreover, even Latinos assessed by the Static-99 measures to be at high risk to reoffend sexually recidivated at a rate lower than 6%. They reported that neither measure predicted sexual recidivism for White, African American, or Latino sex offenders. Although these authors noted recidivism rates by risk category and race, they did not conduct calibration analyses. They concluded that the Static-99 and Static-99R

> . . . *may* not work well as well with Latino offenders as White and Black offenders . . . we do not assert that the Static-99 instruments are clearly *in*appropriate for use with Latino offenders. Rather, we suggest only that the Static-99 instruments' appropriateness for use with Latino sex offenders has *not* yet been clearly established . . . [emphasis in the original]. (p. 238)

Varela and his colleagues (2013) identified two general issues that may have accounted for the poor predictive validity of the Static-99 measures with Latinos. First, they raised concerns about possible measurement error based on the measures' reliance on historical information, which would not be available for sex offenders who are immigrants. Rice, Boccaccini, and Varela (2013, as cited in Varela et al., 2013) found that Latino sex offenders in Texas who were born outside the United States were assigned significantly lower total scores on the Static-99 than did those born in the United States. Moreover, they noted that cultural attitudes about sex and rape may also lead to a significant under-reporting of sexual offenses for this population, which could affect the accuracy of available recidivism rates. Second, they raised the possibility that the items on the Static measures may lack functional equivalence. In other words, items that are deemed to suggest sexual deviance (e.g., the lack of a long-term live-in partner, having unrelated, stranger, or male victims) may not be indicative of sexual deviance for Latinos. Neither the exploration of potential differences in the predictive validity of the Static-99 measure between Latinos born in the United States or its territories and those born in the rest of Latin America nor differences in individual item scores have been undertaken in the literature.

Current Study

The present study focused on assessing the predictive validity of the Static-99 and Static-99R when used with Latino sex offenders. Latinos constitute the fastest

growing group in the United States (Passel, Cohn, & Lopez, 2011). They comprise 12% and 29% of the total number of inmates involved in rape and sexual assault (unwanted sexual contact that does not include penetration) crimes respectively (Carson & Sabol, 2012) and have been found to be overrepresented among Level 3 sex offenders in some states, such as New York (Smith-Socaris, Perry, & Fox-Mullen, 2006). However, despite these figures, only two studies have evaluated the predictive validity of the Static-99 and Static-99R with Latino sex offenders in the United States (Hanson, Lunetta et al., 2014; Varela et al., 2013), with mixed results, and only the former included calibration analyses. Therefore, given that these instruments are integral in decision making regarding sex offender placement, supervision, and potentially post sentence civil commitment, it is essential that the predictive validity (both terms of discrimination and calibration) of the Static-99 measures with Latino sex offenders be further explored.

The main hypothesis is somewhat exploratory in nature given the contradictory findings about the Static-99 measures' performance with Latinos reported in the literature so far. Hence, we sought to assess the predictive validity of the Static-99 and Static-99R with this sample of Latino sex offenders, both in terms of discrimination and calibration. Moreover, we aimed to explore the performance of the measure with subgroups of Latinos. Researchers have typically divided Latinos based on their country of origin and representativeness in their samples (e.g., Vaughan, Kratz, Escobar, & Middendorf, 2013, who divided their sample accordingly: Mexican, Puerto Rican, Cuban, and Central/South American and Other Latino). However, given the issues raised by Varela et al. (2013), we opted to divide our sample based on availability of historical and follow-up information. The first group was composed of participants born in the United States or its territories (i.e., Puerto Rico). The second group was composed of participants born elsewhere in Latin America (i.e., Mexico, the Caribbean, Central, and South America). Given the considerable diversity within the Latino population in the United States (Ennis, Ríos-Vargas, & Albert, 2011), one of our primary aims was also to examine within-group differences on the Static-99 and Static-99R between Latinos born in the United States or U.S. territories (i.e., Puerto Ricans and U.S.-born Latinos) and Latinos born out of the United States (i.e., those born in Mexico, Central America, or South America).

Method

Participants

Data from the archival files of 483 Latino male sex offenders who had been incarcerated in New Jersey state prisons were utilized in this study. The data were gathered as part of a larger project funded by the National Institute of Justice (NIJ; Mercado, Jeglic, & Markus, 2011). The majority of the sample (*n* = 368, 76.2%) was composed of sex offenders who were incarcerated in a general prison population, whereas 115 (23.8%) were incarcerated in a specialized treatment facility for sex offenders deemed to be compulsive and repetitive, but amenable to treatment.

Table 2. Characteristics of the Sample.

	U.S.-born/ Puerto Ricans	Other Latin Americans		Odds ratio
	n (%)	*n* (%)	χ^2	
Victim age			2.61	—
Child under 13	146 (54.5)	118 (54.9)		
Teen/Adult	110 (41.0)	93 (43.3)		
Mixed	12 (4.5)	4 (1.9)		
Victim gender			0.36	
Female	241 (92.0)	199 (93.4)		
Male	21 (8.0)	14 (6.6)		
Past charges for sexual offenses	43 (16)	15 (7.0)	9.28*	2.55
Past charges for non-sexual offenses	182 (67.9)	92 (43.4)	29.04**	2.76
Non-sexual charges as juveniles	47 (21.4)	6 (3.6)	25.16**	7.24
Sexual charges as juveniles	10 (5.7)	0 (0.0)	—	—

*$p < .01$. **$p < .001$.

The overall sample was divided into two groups: those born in the United States and Puerto Rico ($n = 268$, 55.5%) and those born elsewhere in Latin America ($n = 215$, 44.5%). The characteristics of the samples are presented in Table 2. The groups did not differ significantly with respect to victim age category in their index offense (child under 13, teenager/adult, or mixed), $\chi^2(2) = 2.61$, $p = .271$. In addition, the groups did not differ significantly from one another with respect to victim gender, $\chi^2(1) = .36$, $p = .55$. Of note, two participants in the U.S.-born/Puerto Rican group offended against both males and females, whereas none in the other group did. These two participants were excluded from the preceding analysis. The two groups, however, differed with respect to aspects of their criminal histories. Participants born in the United States or Puerto Rico were significantly more likely than those born elsewhere in Latin America to have past charges for sexual offenses, $\chi^2(1) = 9.38$, $p = .002$ (2.55 times more likely), non-sexual offenses, $\chi^2(1) = 29.04$, $p < .001$ (2.76 times more likely), and to have charges as juveniles, $\chi^2(1) = 25.16$, $p < .001$ (7.24 times more likely). Moreover, 10 participants from the U.S.-born/Puerto Rican group were charged with sexual offenses when they were juveniles, whereas none were in the other group.

Measures

Static-99. The Static-99 (Hanson & Thornton, 2000) is a widely researched and used actuarial measure of recidivism risk. The Static-99 is composed of 10 items: (a) young, (b) single, (c) index non-sexual violence, (d) prior non-sexual violence, (e) prior sex offenses, (f) prior sentencing dates (excluding index), (g) any convictions for non-contact sex offenses, (h) any unrelated victims, (i) any stranger victims, and (j) any male victims. Total scores for the Static-99 can range from 0 to 12 and converted into

four risk categories: the scores of 0 and 1 as "Low" risk, 2 and 3 as "Moderate-Low" risk, 4 and 5 as "Moderate-High" risk, and 6 and above as "High" risk.

Static-99R. The only difference between the original Static-99 and the Static-99R is the way in which the age (at time of release) item is coded 1 for ages 18 to 34.9, 0 for ages 35 to 39.9, −1 for ages 40 to 59.9, and −3 for ages 60 and older (Helmus, Thornton et al., 2012). The total scores for the Static-99R range from −3 to 12. The risk category for the Static-99R is the same as that of the Static-99, with the exception of the "Low" risk category, which can include negative total scores.

Data collection tool. Demographic, criminal, and other data were gathered from the offender files as part of a larger study (Mercado et al., 2011). For the purposes of this study, only demographic information, Static-99 scores, and recidivism data were used to conduct the analyses.

Procedure

The Static-99 data were scored by clinicians (*n* = 378; as contained in the participants' record) and/or by trained graduate research assistants (*n* = 391). The level of agreement in Static-99 scores based on rater was measured using the intraclass correlation coefficient (ICC) for the 287 cases that were rated by both clinicians and research assistants. The ICC obtained was .884, which suggests excellent agreement (Cicchetti, 1994) and is consistent with previously reported interrater reliability for the Static-99 measures (e.g., Hanson, Lunetta et al., 2014, ICC of .85 for experienced raters; Quesada, Calkins & Jeglic, 2014, ICC of .89). When both sets of scores were available, the ratings from research assistants were used. The Static-99R total was subsequently obtained by the first author by recoding the first item using the participants' age at time of their release from custody and substituting this score for the Age item on the Static-99, according to the guidelines provided by Helmus, Thornton et al. (2012).

Recidivism data were obtained via the New Jersey State Police criminal records database for those offenders released from the New Jersey Department of Corrections (DOC) between the years 1996 and 2007 following an incarceration for a sexual offense. These records were obtained via the New Jersey State Police Computerized Criminal History System and the National Crime Information Center's Interstate Identification Unit; thus, the recidivism data account for criminal offenses across all U.S. jurisdictions, not just New Jersey. Recidivism data were collected on the number and nature of sexual and non-sexual. The average period of follow-up was 6.14 years (*SD* = 2.60, range = 1.63-12.11).

In order to replicate Hanson, Lunetta et al.'s (2014) calibration analyses using a follow-up period of at least 5 years, participants in our sample with shorter periods of time in the community were excluded from those analyses. The final sample for the calibration analyses was composed of 303 participants, with an average follow-up period of 7.62 years (*SD* = 1.83, range = 5.0-13.11). Both U.S.-born/Puerto Rican and other Latin

American participants had comparable ranges of time in the community for the purpose of follow-up analyses ($n = 174$, $M = 7.65$, $SD = 1.87$ vs. $n = 129$, $M = 7.58$, $SD = 1.77$, respectively), $t(301) = .32$, $p = .749$, *ns*. To compare observed recidivism rates with expected rates, we used the 5-year estimates provided by Phenix, Helmus, and Hanson (2012) for a routine sample because the majority of our participants (76.2%) came from a general prison population. The only difference in analytic strategy between the present study and Hanson, Lunetta et al.'s (2014) was the way in which logistic regression coefficients were compared. Whereas Hanson, Lunetta and colleagues (2014) used fixed-effect meta-analysis, we used the formula proposed by Paternoster, Brame, Mazerolle, and Piquero (1998) to test the equality of regression coefficients:

$$z = \frac{b1 - b2}{\sqrt{\left(SEb1\right)^2 + \left(SEb2\right)^2}},$$

where *z* is the standardized residual of the difference between coefficients. The coefficients being compared are represented by *b*1 and *b*2, and their SE by *SEb*1 and *SEb*2. The difference between coefficients is significant if the *z* score is smaller than −1.96 or larger than 1.96.

Results

Scores and Level of Risk

Static-99. The mean score on the Static-99 for the overall sample was 1.86 (median = 2.0, $SD = 1.40$, range = 0-8). There was a significant difference on average Static-99 total score between participants born in the United States/Puerto Rico ($n = 268$) and non-U.S.-born ($n = 215$; $M = 2.03$, $SD = 1.46$ vs. $M = 1.64$, $SD = 1.30$, respectively), $t(481) = 3.11$ $p = .002$, which represented a small effect size, Cohen's $d = .28$.

Static-99R. The mean score on the Static-99R for the overall sample was 1.64 (median = 2.0, $SD = 1.88$, range = −3-8). There was a significant difference on average Static-99R total score between participants born in the United States/Puerto Rico ($n = 268$) and those who were non-U.S.-born ($n = 215$; $M = 1.81$, $SD = 1.91$ vs. $M = 1.43$, $SD = 1.81$, respectively), $t(481) = 2.23$ $p = .026$, which represented a small effect size, Cohen's $d = .20$.

Comparison of item scores. A crosstabs analysis was performed using the Static-99 items, with the addition of the age-related item of the Static-99R, to assess potential differences between the two subgroups. Of note, the prior sex offenses item, which can have a value ranging from 0 to 3, was recoded as dichotomous to conduct a χ^2 analysis because only one participant in the non-U.S.-born group scored above a 1 on that item. Results are presented in Table 3. A specific analysis of the Age at the Time of Release item for the Static-99R is presented in Table 4. Significant differences between the two groups centered on the Static-99 items related to participants'

Table 3. Static-99 Item Analysis.

Static-99 item	U.S.-born/Puerto Rican n (%)	Other Latin American n (%)	$\chi^2(1)$
1. Young	36 13.4)	31 (14.4)	0.097
2. Ever lived with a partner >2 years	77 (28.7)	63 (29.3)	0.019
3. Index non-sexual violence convictions	17 (6.3)	16 (7.4)	0.226
4. Prior non-sexual violence convictions	61 (22.8)	23 (10.7)	12.084*
5. Prior sex offenses (dichotomous)	53 (19.8)	13 (6.0)	19.061**
6. Prior sentencing dates	49 (18.3)	11 (5.1)	19.012**
7. Non-contact sex offenses convictions	6 (2.2)	6 (2.8)	0.150
8. Any unrelated victims	182 (67.9)	148 (68.8)	0.047
9. Any stranger victims	24 (9.0)	24 (11.2)	0.650
10. Any male victims	24 (9.0)	15 (7.0)	0.629

*$p < .01$. **$p < .001$.

Table 4. Static-99R Age at Time of Release Item Analysis.

	Age at time of release score				
	−3	−1	0	1	$\chi^2(3)$
U.S.-born/Puerto Rican n (%)	13 (5.0)	92 (35.1)	50 (19.1)	107 (40.8)	1.490, ns
Other Latin American n (%)	13 (6.1)	70 (33.0)	34 (16.0)	95 (44.8)	

criminal history. Specifically, based on odds ratio analyses, we found that U.S.-Born Latinos/Puerto Ricans were 2.46 times more likely than non-U.S.-born Latinos to have prior non-sexual charges/convictions, more than 4 times (4.15) more likely to have prior sentencing dates, and almost 4 times (3.83) more likely to have prior sexual offenses.

Risk levels. With respect to assigned risk categories, we attempted to conduct chi-square analyses, but the ensuing crosstabs tables for risk categories for both Static-99 measures had expected counts less than five for more than 20% of the cells. We subsequently collapsed the risk categories into Low/Moderate-Low, and Moderate-High/High. There was no significant difference between the two groups on the collapsed Static-99 risk categories, but there was a trend, $\chi^2(1) = 3.688$, p = .055. However, there was a significant difference between the two groups with respect to the collapsed Static-99R risk categories, $\chi^2(1) = 7.639$, p = .006. Based on an odds ratio analysis, we determined that Latinos born in the United States or Puerto Rico were about twice as likely (2.05) than non-U.S.-born Latinos to fall in the Moderate-High/High collapsed risk category. Results are summarized in Tables 5 and 6.

Table 5. Static-99 and Static-99R Risk Categories Based on Total Score.

	Risk category				
	Low	Low/Mod	Mod/High	High	
	n (%)	*n* (%)	*n* (%)	*n* (%)	$\chi^2(3)$
Static-99					
U.S.-born/Puerto Ricans	108 (40.3)	121 (46.1)	36 (13.4)	3 (1.1)	6.319
Other Latin Americans	107 (49.8)	89 (41.4)	18 (8.4)	1 (0.5)	
Static-99R					
U.S.-born/Puerto Ricans	122 (45.5)	91 (34.0)	51 (19.0)	4 (1.5)	9.279
Other Latin Americans	107 (49.8)	84 (39.1)	24 (11.2)	0 (0.0)	

Table 6. Static-99 and Static-99R Collapsed Risk Categories Based on Total Score.

	Risk category		
	Low-Low/Mod	Mod/High-High	
	n (%)	*n* (%)	$\chi^2(1)$
Static-99			
U.S.-born/Puerto Ricans	229 (85.4)	39 (14.6)	3.688***
Other Latin Americans	196 (91.2)	19 (8.8)	
Static-99R			
U.S.-born/Puerto Ricans	213 (79.5)	55 (20.5)	7.639*
Other Latin Americans	191 (88.8)	24 (11.2)	

*p < .01.***p = .055.

Predictive Validity Analysis of the Static-99 and Static-99R

Rates of sexual offense recidivism. In the overall sample of 483 sex offenders, nine participants reoffended sexually (1.9%). Of the 268 U.S.-born Latinos/Puerto Ricans, six participants recidivated sexually (2.2%) versus three of the 215 non-U.S.-born Latinos (1.4%). However, this difference was not statistically significant (Fisher's Exact Test, p = .737).

Discrimination analyses. Receiver operating characteristic (ROC) analyses were performed to assess the ability of the Static-99 and Static-99R measures to discriminate between recidivists and non-recidivists. Analyses were conducted with the entire sample as well as for both subgroups. The magnitude of the ensuing AUC values was interpreted using the guidelines proposed by Rice and Harris (2005) for violence predictions studies (0.56 is small, 0.64 is moderate, and 0.71 is large).

For the entire sample, the AUC value for the Static-99 was moderate-large (0.683), although it was not statistically significant. In addition, the CI around the AUC value was wide, ranging from 0.483 to 0.883. However, the AUC value for the Static-99R, based on the entire sample, was large (0.719) and statistically significant. Once again, the corresponding CI around the AUC value was also wide, ranging from 0.529 to 0.909.

Results once the entire sample was divided into U.S.-born/Puerto Ricans and non-U.S.-born offenders were mixed. With respect to the U.S.-born/Puerto Rican group, the AUC values for both measures were large (0.774 for the Static-99 and 0.815 for the Static-99R) and statistically significant. Nonetheless, their corresponding CIs were also wide (0.611-0.938 for the Static-99 and 0.625-0.995 for the Static-99R). In contrast, for the non-U.S.-born group, the AUC values for both measures were small (0.469 for the Static-99 and 0.524 for the Static-99R) and not statistically significant. Moreover, their corresponding CIs were very wide (0.066-0.873 for the Static-99 and 0.191 to 0.856 for the Static-99R). Results are presented in Table 7.

Additional analyses were performed to assess whether or not group membership affected the Static-99 measures' prediction of sexual recidivism. We conducted binary logistic regressions using each Static-99 measure as the predictor for sexual recidivism alone as well as with group membership as a covariate. The Static-99 measures predicted sexual recidivism, whereas group membership did not. Results are presented in Table 8.

Calibration analyses. Calibration analyses focused solely on the Static-99R based on the recommendation from Hanson, Lunetta et al. (2014). The sensitivity of the measure was assessed using both calibration methods proposed by Hanson, Lunetta et al. (2014): through a comparison of observed versus expected recidivism rates (for our sample) based on the literature and comparison of regression coefficients with an intercept centered on a score of two. In general, our rates of observed sexual offense recidivism increased with Static-99R risk categories, as expected. The E/O indices for the Low and Moderate-High risk categories were close to 1.0, suggesting good calibration. However, the E/O indices for the Moderate-Low and High risk categories differed from 1.0, but not significantly given that their corresponding 95% CIs contained the value of 1.0. Results are presented in Table 9.

We subsequently performed a binary logistic regression to assess the Static-99R's ability to determine relative risk and compared our regression coefficients with those reported by Hanson et al. (2013) for the normative sample and by Hanson, Lunetta et al. (2014) with respect to their California Latino sample. The relationship between the centered (on the score of 2) Static-99R total scores and sexual offense recidivism fit a logistic distribution because the Hosmer–Lemeshow test was not significant, $\chi^2(5)$ = 5.73, p = .333; $B0_2$ = −3.75, SE = 0.43; $B1$ = 0.496, SE = 0.22. The ensuing logistic equation showed a relative increase in risk of 1.64 for each increase in Static-99R score ($e^{0.382}$ = 1.64) and an adjusted 5-year sexual offense recidivism rate of 2.3% for a Static-99R score of 2 ($1/\{1 + e\text{-}(\text{-}3.79)\}$ = 2.3) The adjusted base rate for our sample was not significantly different from that reported by Hanson et al. (2013), $B0_2$ of −3.75 versus −2.941, z = −1.64, and was very similar to the one reported for Latinos in California by Hanson et al. (2014), $B0_2$ of −3.75 versus −3.953, z = 0.47. With respect

Table 7. Predictive Validity (Discrimination) of the Static-99 and Static-99R for Sex Offense Recidivism.

	n	Observed recidivism rate n (%)		AUC	p	95% CI
Overall	483	9 (1.9)	Static-99	0.683	.060	[0.483, 0.883]
			Static-99R	0.719	.024	[0.529, 0.909]
U.S.-born/Puerto Ricans	268	6 (2.2)	Static-99	0.774	.022	[0.611, 0.938]
			Static-99R	0.815	.008	[0.635, 0.995]
Other Latin Americans	215	3 (1.4)	Static-99	0.469	.855	[.066, 0.873]
			Static-99R	0.524	.889	[.191, 0.856]

Note. AUC = area under the curve; CI = confidence interval.

Table 8. Prediction of Sexual Reoffending by Static-99 Measures and Group Membership.

Predictor(s)	B (SE)	Wald	p	Odds ratio	95% CI.
Static-99	.446 (.204)	4.787	.029	1.562	[1.048, 2.329]
$\chi^2(1)$ = 4.37, p = .037					
Nagelkerke R^2 = .053					
Static-99	.432 (.207)	4.380	.036	1.541	[1.028, 2.310]
Group membership	.271 (.727)	.139	.709	1.311	[.316, 5.448]
$\chi^2(1)$ = .142, p = .706					
Nagelkerke R^2 = .055					
Static-99R	.467 (.185)	6.368	.012	1.594	[1.110, 2.291]
$\chi^2(1)$ = 6.582, p = .011					
Nagelkerke R^2 = .08					
Static-99R	.455 (.186)	5.986	.014	1.577	[1.095, 2.270]
Group membership	.261 (.727)	.129	.720	1.298	[.312, 5.402]
$\chi^2(1)$ = .132, p = .717					
Nagelkerke R^2 = .082					

Note. CI = confidence interval.

to the change in relative risk, our findings were consistent to those reported both by Hanson et al. (2013; *B*1 of 0.496 vs. 0.331, *z* = 0.74) and Hanson, Lunetta et al. (2014) for Latinos (*B*1 of 0.496 vs. 0.383, *z* = 0.51).

Discussion

The main purpose of the current study was to assess the utility of the Static-99 measures for the assessment of risk among Latino sex offenders. First, we sought to evaluate the predictive validity of Static-99 and Static-99R with a sample of Latino sex

Table 9. Comparison of Expected Versus Observed Rates of Sexual Recidivism for Static-99R Risk Categories (With at Least 5 Years in the Community Post Release).

Risk category	n	Recidivism rates (%)		E/O	95% CI
		Observed	Expected		
		n (%)	n (%)		
Low	136	3 (2.2)	4 (3.0)	1.33	[0.43, 4.12]
Low/moderate	108	1 (0.9)	6 (5.6)	6.0	[0.84, 42.60]
Moderate/high	57	4 (7.0)	6 (9.7)	1.5	[0.56, 4.00]
High	2	1 (50.0)	0.4 (19.2)	0.4	[0.06, 2.84]
Total	303	9 (3.0)	19 (6.3)	2.11[a]	[1.10, 4.06]

Note. E/O = expected/observed; CI = confidence interval.
[a]The difference between the Observed and Expected is statistically significant.

offenders as a whole; then, we conducted separate analyses for those who were U.S.-born/Puerto Rican and those who were non-U.S.-born. Predictive validity was assessed both in terms of discrimination and calibration properties.

Overall, we found that the Latino sex offenders in the present study received fairly low average scores on the Static-99 and Static-99R when compared with the general sex offender literature (e.g., Helmus, 2009; Helmus, Hanson, Thornton, Babchishin, & Harris 2012). However, our findings were consistent with, but slightly lower than, other studies involving Latino sex offenders in Texas (Varela et al., 2013) and California (Hanson, Lunetta et al., 2014). The scores we obtained for our sample could be influenced by a number of factors. It is very possible that a number of Latino (except Puerto Rican) participants immigrated into the United States as adults from Mexico and other Latin American countries given the high influx of immigrants from those regions (Camarota, 2012). Participants' immigrant status could influence the amount of information available about them when scoring the Static-99 measures. Varela and colleagues (2013) raised concerns regarding measurement error of this type, which arises from the lack of documented criminal histories for immigrant sex offenders. Our findings corroborate those concerns. Moreover, even if immigrant sex offenders were forthcoming about their criminal history if interviewed, they may not have considered certain types of behaviors crimes, such as sexual contact between a young adult and a teenager, if there are no laws prohibiting that type of contact in their countries of origin or if those laws are not enforced. Consequently, measures that contain items about criminal history, such as the Static-99 and Static-99R, could provide somewhat depressed total scores.

The above appears to be a possibility for our sample, as evidenced by the fact that U.S.-born/Puerto Rican sample was 2½ times more likely than non-U.S.-born Latinos to get a score of one on the prior non-sexual charges/convictions item, more than 4 times more likely on the prior sentencing dates item, and almost 4 times more likely on the prior sexual offenses item. However, both groups received similar scores for the

remaining items. These findings support the theory proposed by Varela and colleagues (2013) that immigrant status affects the accuracy of scores on the Static-99 measures.

Our analysis of risk-level assignment on both Static-99 measures was affected by the fact that very few participants (four based on each measure) were assessed to fall in the High Risk category. Once we collapsed risk categories into two (Low/Low-Moderate and a Moderate-High/High), we found a strong trend that suggests U.S.-born/Puerto Ricans are more likely to fall in the Moderate-High/High risk category based on Static-99 total score as compared with non-U.S.-born participants. However, we found that the U.S.-born/Puerto Rican group was twice as likely than the non-U.S.-born group to fall in the same higher risk category, based on Static-99R total score. However, the fact that changes in risk-level assignment from the Static-99 to the Static-99R are solely based on the change in the item pertaining to age suggests that differences in the age category between U.S.-born and non-U.S.-born participants also affect differences in the assessment of risk between these two groups.

In addition to receiving lower scores on the Static-99 measures than normative samples, the sex offenders in our sample had significantly lower rates of documented sexual offense recidivism (based on convictions) than those reported in the literature based on meta analyses (Helmus, 2009). Low sexual offense recidivism rates have also been reported for Latino sex offenders by Varela et al. (2013) and Hanson, Lunetta et al. (2014). Moreover, we found that U.S.-born/Puerto Rican and other Latin American sex offenders (i.e., non-U.S.-born) in our sample did not differ significantly from one another with regard to their respective sexual recidivism rates.

Although lower documented recidivism rates for sexual offenses could be expected of immigrant sex offenders who would be likely to face deportation on the completion of a prison sentence, there are a number of other potential explanations for the low rates found for our overall sample. Varela and his colleagues (2013) have argued that if Latinos follow similar patterns of sexual offending as Whites and African Americans, a substantial number of them would have Latino/a victims (i.e., offend against individuals for their same ethnicity). However, reporting of sexual offenses may be depressed among Latinas in the United States based on negative beliefs about victims and endorsement of rape myths in this population (Jimenez & Abreu, 2003). In addition, cultural taboos around talking about sex and rape, the culture's focus on the family over the individual, and the lack of available community resources could prevent victims from reporting abuse (Jimenez & Abreu, 2003). In addition, Rennison (2010) identified fears related to immigration status and language barriers as obstacles to reporting sexual victimization among Latinas.

With regard to the ability of the original Static-99 to discriminate between sexual recidivists and non-recidivists, our findings were mixed. Although its performance with the entire sample did not reach formal statistical significance, the AUC value was consistent with that found in previous studies (e.g., Brouillette-Alarie & Proulx, 2012). It is striking that the measure was able to predict recidivism for the U.S.-born/Puerto Rican sample fairly well despite the very low number of recidivists in our sample. However, its performance was poor when applied to the non-U.S.-born Latino sample. In addition, the Static-99's predictive validity with the entire sample may have been

hindered by the lack of accurate historical information for the non-U.S.-born Latino sample, as well as other related factors, such as age at time of immigration into the United States, and the extent of travel between the United States and country of origin (transmigration).

We found a somewhat similar pattern with the Static-99R. However, this newer measure was able to discriminate recidivists from non-recidivists for the entire sample as well as the U.S.-born/Puerto Rican group. The AUCs for the Static-99R were large for the entire sample and the U.S.-Born/Puerto Rican group. However, the Static-99R was also not able to predict recidivism for the non-U.S.-born group, likely for the same reasons as the original measure.

The calibration analyses of the Static-99R were generally consistent with the existing literature (Hanson et al., 2013; Hanson, Lunetta et al., 2014). However, the total observed rate of recidivism was significantly lower than expected when compared with the norms provided by Phenix et al. (2012). The rest of our findings were similar to those reported by Hanson et al. (2013) based on a large sample of U.S., Canadian, and West European sex offenders, as well as findings pertaining specifically to a sample of Latino sex offenders in California reported by Hanson, Lunetta et al. (2014). Although our sample sizes for each risk level were small, as was the number of recidivists in each category, the recidivism rates increased consistently along risk levels, with the exception of the Low-Moderate risk category, which was also true in Hanson, Lunetta et al.'s (2014) study.

Moreover, our assessment of relative risk using logistic regression yielded similar results to those based on a normative sample (Hanson et al., 2013) and on a Latino sample (Hanson, Lunetta et al., 2014), both with respect to the adjusted base rate and adjusted 5-year expected recidivism rate regression coefficients. Of note, our adjusted base rate coefficient did not differ significantly from Hanson et al.'s (2013) when the standardized residual of the difference was examined, whereas Hanson, Lunetta et al. (2014) found a significant difference between their coefficient and Hanson et al.'s (2013) using meta-analytic methods, which are more sensitive. In all, our findings provide further evidence of the predictive validity of the Static-99R with respect to the assessment of offenders' relative risk.

Our findings provide some support for the use of the Static-99 measures with Latinos. Overall, the measures performed relatively well both in terms of discrimination and, in the case of the Static-99R, calibration, when applied to our entire sample of Latino sex offenders. Although the measures performed poorly with Latinos born outside the United States or Puerto Rico, more research is needed to come to stronger conclusions with respect to the utility of the measures with those individuals.

Limitations

Given the archival nature of this study, we were able to discern neither participants' age at the time of immigration to the United States nor their history of sexual aggression in their countries of origin. This lack of historical information affects the scores offenders obtained, as well as their assignment of level of risk on the Static-99

measures, and likely other actuarial measures that require such data. In addition, obtaining effective post-release follow-up information for Latinos can be rather difficult given the group's tendency to travel back and forth between the United States and their country of origin (e.g., Guarnizo, 1997; Massey, Goldring, & Durand, 1994). It is very possible that a number of individuals in our overall sample, even those born in the United States of Latino heritage, may have left the United States subsequent to their release from prison, which would render effective follow-up difficult (if the person went to Puerto Rico, which is American territory) or practically impossible. In sum, problems obtaining accurate historical and follow-up information may have affected the measures' performance with non-U.S.-born Latinos.

Another limitation is the lack of data about immigration status. Some of the individuals in the foreign-born sample may not have legal status in the United States, although others are likely visa holders, permanent residents, or citizens. Those who arrived to the United States legally would have already been vetted through a selective immigration process, one that would likely deny entry for individuals with any kind of documented criminal history. Thus, at least some portion of our non-U.S.-born sample is likely to have, by nature of their having gained legal entry into the United States, little to no criminal history or other serious red flags in their background.

Finally, although we found the Static-99 measures to perform well with U.S.-born and Puerto Rican offenders, our observed recidivism rates were rather low. Some of the calibration analyses for the Static-99R were affected by these low base rates. Although not necessarily a limitation of the methods used in this study, it is certainly an issue that affected our assessment of the sensitivity of the measure.

Conclusion and Future Directions

Our findings underscore the need for multicultural research in the sex offender field, particularly with respect to the assessment of recidivism risk. Moreover, they provide further evidence that different ethnic groups may vary considerably in their rate of sexual reoffending. In addition to recent studies by Varela et al. (2013) and Hanson, Lunetta et al. (2014), our findings suggest that Latinos' reoffending rates are rather low. These findings could be considered when Latino sex offenders are assessed post release to determine at what level they should be supervised (e.g., by parole or sex offender registry boards). However, more accurate assessment of recidivism is needed. Although it may be impossible to obtain follow-up information from foreign official sources, any assessment of an immigrant sex offender, or those with closer ties with a foreign territory or county (e.g., Puerto Ricans and Mexican Americans who may travel back and forth to the United States), should include questions about potential sexually aggressive behavior in which they may have engaged while outside the United States. In addition, researchers may wish to consider grouping samples of immigrant Latinos based on their age of immigration into the United States, because those who were younger (i.e., prepubescent) at time of entry into the United States may be more culturally similar to Latinos born in the United States, and historical information about them may be more readily available.

Although our findings suggest that the Static-99 measures exhibit predictive validity with Latinos of U.S. or Puerto Rican origin, solid conclusions about its cross-cultural validity would be premature given the impact low base rates had on the statistical power of our analyses. In addition, although our discrimination and calibration analyses suggest that the Static-99R in particular may be useful in the assessment of risk among U.S.-born Latinos, our findings should be considered within the context of the low base rate of recidivism.

It is clear that additional research is needed to provide more extensive evidence of the predictive validity of the Static-99R, both in terms of discrimination and calibration, with minority groups in the United States, as well as its cross-cultural validity with immigrants. Although Hanson, Lunetta et al. (2014) suggested using a localized approach to the validation of the measure, the pooling of resources and data to conduct validation analyses with more ample sample sizes could also be considered.

Finally, if Latinos indeed reoffend at such low rates, it would be valuable to determine what factors may contribute to their desistance from sex offending. Although a number of potential factors have been proposed with regard to sex offenders in general by Ward and Laws (2010), potential cultural factors that may predict desistance for specific ethnic or cultural groups should also be explored.

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References

Ahrens, C. E., Rios-Mandel, L. C., Isas, L., & Lopez, M. D. C. (2010). Talking about interpersonal violence: Cultural influences on Latinas' identification and disclosure of sexual assault and intimate partner violence. *Psychological Trauma: Theory, Research, Practice, and Policy*, *2*, 284-295. doi:10.1037/a0018605

Allan, A., Dawson, D., & Allan, M. M. (2006). Prediction of the risk of male sexual reoffending in Australia. *Australian Psychologist*, *41*, 60-68. doi:10.1080/00050060500391886

Babchishin, K. M., Blais, J., & Helmus, L. (2012). Do static risk factors predict differently for Aboriginal sex offenders? A multi-site comparison using the original and revised Static-99 and Static-2002 scales. *Canadian Journal of Criminology and Criminal Justice*, *54*, 1-43. doi:10.3138/cjccj.2010.E.40

Babchishin, K. M., Hanson, R. K., & Blais, J. (2015). Less is more: Using Static-2002R subscales to predict violence and general recidivism among sexual offenders. Sexual Abuse: A Journal of Research and Treatment. *Advance online publication*. doi:10.1177/1079063215569544

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*, 490-521. doi:10.1177/009385480102800406

Brouillette-Alarie, S., & Proulx, J. (2012). Predictive validity of the Static 99R and its dimensions. *Journal of Sexual Aggression*, *19*, 311-328. doi:10.1080/13552600.2012.747630

Calkins, C., Jeglic, E., Beattey, R. A., Zeidman, S., & Perillo, A. D. (2014). Sexual violence legislation: A review of case law and empirical research. *Psychology, Public Policy, and Law*, *20*, 443-462. doi:10.1037/law0000027

Camarota, S. A. (2012). Immigrants in the United States: A profile of America's foreign-born population. *Center for Immigration Studies*. Retrieved from http://www.cis.org/sites/cis.org/files/articles/2012/immigrants-in-the-united-states-2012.pdf

Carson, E. A. (2014). Prisoners in 2013. Report No. NCJ 247282. Rockville, MD: Bureau of Justice Statistics.

Carson, E. A., & Sabol, W. J. (2012). *Prisoners in 2011*. Report No. NCJ 239808. Rockville, MD: Bureau of Justice Statistics.

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, *6*, 284-290. doi:10.1037/1040-3590.6.4.284

Claussen-Schulz, A. M., Pearce, M. W., & Schopp, R. F. (2004). Dangerousness, risk assessment, and capital sentencing. *Psychology, Public Policy, and Law*, *10*, 471-491. doi:10.1037/1076-8971.10.4.471

de Vogel, V., de Ruiter, C., van Beek, D., & Mead, G. (2004). Predictive validity of the SVR-20 and Static-99 in a Dutch sample of treated sex offenders. *Law and Human Behavior*, *28*, 235-251. doi:10.1023/B:LAHU.0000029137.41974.eb

Ennis, S., Ríos-Vargas, M., & Albert, N. G. (2011). The Hispanic population: 2010 (2010 Census Briefs). Report No. C2010BR-04. Washigton, D.C.: US Census Bureau.

Falk, A. J. (1999). Sex offenders, mental illness and criminal responsibility: The constitutional boundaries of civil commitment after Kansas v. Hendricks. *American Journal of Law & Medicine*, *25*, 117-147.

Guarnizo, L. E. (1997). The emergence of a transnational social formation and the mirage of return migration among Dominican transmigrants. *Identities*, *42*, 281-322. doi:10.1080/1070289X.1997.9962591

Hamilton, M. (2011). Public safety, individual liberty, and suspect science: Future dangerousness assessments and sex offender laws. *Temple Law Review*, *83*, 697-756.

Hanson, R. K., Babchishin, K. M., Helmus, L., & Thornton, D. (2013). Quantifying the relative risk of sex offenders: Risk ratios for the Static-99R. *Sexual Abuse: A Journal of Research and Treatment*, *25*, 482-515. doi:10.1177/1079063212469060

Hanson, R. K., Lunetta, A., Phenix, A., Neeley, M. B., & Epperson, D. (2014). The field validity of Static-99/R sex offender risk assessment tool in California. *Journal of Threat Assessment and Management*, *1*, 102-117. doi:10.1037/tam0000014

Hanson, R. K., & Morton-Bourgon, K. E. (2004). Predictors of sexual recidivism: An updated meta-analysis (Corrections Research User Report No. 2004-02). 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*, 1-21.

Hanson, R. K., & Thornton, D. (2000). Improving risk assessments for sex offenders: A comparison of three actuarial scales. *Law and Human Behavior*, *24*, 119-136.

Hanson, R. K., Thornton, D., Helmus, L. M., & Babchinshin, K. M. (2015). What sexual recidivism rates are associated with Static-99R and Static-2002R Scores? *Sexual Abuse: A Journal of Research and Treatment*. Advance online publication. doi: 10.1177/1079063215574710

Helmus, L. (2009). *Re-norming Static-99 recidivism estimates: Exploring base rate variability across sex offender samples* (Master's thesis). Available from ProQuest Dissertations and Theses database (UMI No. MR58443).

Helmus, L., Hanson, R. K., Thornton, D., Babchishin, K. M., & Harris, A. J. R. (2012). Absolute recidivism rates predicted by Static-99R and Static-2002R sex offender risk assessment tools vary across samples: A meta-analysis. *Criminal Justice and Behavior*, *39*, 1148-1171. doi:10.1177/0093854812443648

Helmus, L., Thornton, D., Hanson, R. K., & Babchishin, K. M. (2012). 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*, 64-101. doi:10.1177/1079063211409951

Jackson, R. L., & Hess, D. T. (2007). Evaluation for Civil Commitment of Sex Offenders. *Sexual Abuse: A Journal of Research and Treatment*, *19*, 425-448. doi: 10.1007/s11194-007-9062-3

Jimenez, J. A., & Abreu, J. M. (2003). Race and sex effects on attitudinal perceptions of acquaintance rape. *Journal of Counseling Psychology*, *50*, 252-256. doi:10.1037/0022-0167.50.2.252

Långström, N. (2004). Accuracy of actuarial procedures for assessment of sexual offender recidivism risk may vary across ethnicity. *Sexual Abuse: Journal of Research and Treatment*, *16*, 107-120. doi:10.1177/107906320401600202

Massey, D. S., Goldring, L., & Durand, J. (1994). Communities in transnational migration: An analysis of nineteen Mexican communities. *American Journal of Sociology*, *99*, 1492-1533.

Mercado, C. C., Jeglic, E. L., & Markus, K. (2011). Data collection tool. Unpublished manuscript.

Passel, J. S., Cohn, D., & Lopez, M. H. (2011, March). Census 2010: 50 million Latinos. Hispanics account for more than half of the nation's growth in past decade. Retrieve from http://www.pewhispanic.org/files/reports/140.pdf

Paternoster, R., Brame, R., Mazerolle, P, & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology*, *36*, 859-866.

Phenix, A., Helmus, L., & Hanson, R. K. (2012). Static-99R & Static-2002R evaluators' workbook. *Available* from www.static99.org

Quesada, S. P., Calkins, C., & Jeglic, E. L. (2014). An examination of the interrater reliability between practitioners and researchers on the Static-99. *Journal of Offender Therapy and Comparative Criminology*, *58*, 1364-1375. doi:10.1177/0306624X13495504

Rennison, C. M. (2010). An investigation of reporting violence to the police: A focus on Hispanic victims. *Journal of Criminal Justice*, *38*, 390-399. doi:10.1016/j.jcrimjus.2010.04.007

Rice, M. E., & Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC area, Cohen's d, and r. *Law and Human Behavior*, *29*, 615-620. doi:10.1007/s10979-005-6832-7

Rockhill, B., Byrne, C., Rosner, B., Louie, M. M., & Colditz, G. (2003). Breast cancer risk prediction with a log-incidence model: Evaluation of accuracy. *Journal of Clinical Epidemiology*, *56*, 856-861. doi:10.1016/S0895-4356(03)00124-0

Singh, J. P. (2013). Predictive validity performance indicators in violence risk assessment: A methodological primer. *Behavioral Sciences & the Law*, *31*, 8-22. doi:10.1002/bsl.2052.

Smallbone, S., & Rallings, M. (2013). Short-term predictive validity of the Static-99 and Static-99-R for indigenous and nonindigenous Australian sexual offenders. *Sexual Abuse: Journal of Research and Treatment*, *25*, 302-316. doi:10.1177/1079063212472937

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*, 691-703. doi:10.1037/a0036616

Smith-Socaris, C., Perry, R. A., & Fox-Mullen, L. (2006). Racial and ethnic demographics of the New York state level 3 sex offender population. Retrieved from http://www.nyclu.org/publications/report-racial-and-ethnic-demographics-of-new-york-state-level-3-sex-offender-population

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*, *35*, 454-468.

Trevethan, S., & Rastin, C. J. (2004). A profile of visible minority offenders in the federal Canadian correctional system (Report No. R-144). Retrieved from http://www.csc-scc.gc.ca/research/r144-eng.shtml#LinkTarget_24722

Varela, J. G., Boccaccini, M. T., Murrie, D. C., Caperton, J. D., & Gonzalez, E., Jr. (2013). Do the Static-99 and Static-99R perform similarly for White, Black, and Latino Sexual Offenders? *International Journal of Forensic Mental Health*, *12*, 231-243. doi:10.1080/14999013.2013.846950

Vaughan, E. L., Kratz, L. M., Escobar, O. S., & Middendorf, K. G. (2013). Latino subgroup as a moderator of the relationship between language usage and alcohol use in a national sample of Latino emerging adults. *Journal of Latina/o Psychology*, *3*, 182-194. doi:10.1037/a0033384

Viljoen, J. L., McLachlan, K., & Vincent, G. M. (2010). Assessing violence risk and psychopathy in juvenile and adult offenders: A survey of clinical practices. *Assessment*, *17*, 377-395. doi:10.1177/1073191109359587

Ward, T., & Laws, D. R. (2010). Desistance from sex offending: Motivating change, enriching practice. *International Journal of Forensic Mental Health*, *9*, 11-23. doi:10.1080/14999011003791598