Assessing risk of sex offenders with major mental illness: integrating research into best practices

Sharon M. Kelley and David Thornton

Dr Sharon M. Kelley is a Forensic Evaluator at Evaluation Unit, Sand Ridge Secure Treatment Center, Madison, Wisconsin, USA.
Dr David Thornton is Research Director at Research Unit, Sand Ridge Secure Treatment Center, Madison, Wisconsin, USA.

Abstract

Purpose – *Sex Offenders with a Major Mental Illness (SOMMI) are doubly stigmatized, as these individuals are members of two highly marginalized social groups (Guidry and Saleh, 2004). Within each of these groups SOMMI only represent a small minority. For professionals seeking to base their practice in empirical research this has led to a significant problem since the literature related specifically to this group is both limited and hard to locate. Additionally, intensity of psychological risk factors varies as a function of psychiatric decompensation for some SOMMI making it hard to apply certain procedures that work with ordinary sexual offenders. The purpose of this paper is to provide a review of the relevant literature and recommendations for clinical practice that are responsive to the particular challenges posed by this unusual group of sexual offenders.*

Design/methodology/approach – *The current paper provides a review of literature on risk factors for sexual recidivism and validity of current risk tools as it pertains to SOMMI. Recommendations for risk assessment with SOMMI are provided.*

Findings – *The static actuarial tools appear to be useful with SOMMI. However, risk assessments measuring dynamic risk factors have poorer predictive validity. Additional factors that will need to be considered involve a possible higher recidivism rate for SOMMI and a variable relationship between major mental illness and sex offending with it sometimes predisposing, sometimes exacerbating existing risk factors, and sometimes mitigating risk.*

Originality/value – *There is a paucity of research and guidance in assessment and risk management of SOMMI. The current paper is the first to thoroughly explore the efficacy of current sex offender risk assessment tools with SOMMI and provide structured guidance for making decisions about risk and risk management needs for this challenging population.*

Keywords *Risk assessment, Risk management, Prediction, Sex offenders, Criminogenic need, Major mental illness*

Paper type *Literature review*

Background of the problem

Sex Offenders with a Major Mental Illness (SOMMI) are doubly stigmatized, as these individuals are members of two highly marginalized social groups (Guidry and Saleh, 2004). Within each of these groups SOMMI represent only a small minority. Surveys of individuals in psychiatric settings indicate that only a minority is known to have committed sex offenses with numbers ranging from 1.6 to 20 percent (Baker and White, 2002; Fisher *et al.*, 2006; Wallace *et al.*, 2004). Similarly surveys of sexual offenders indicate that the prevalence of major mental illness is low, ranging from 1.4 to 16 percent, with higher rates seen among criminal defendants who were referred for forensic evaluations at court clinics (Becker *et al.*, 2003; Cochrane *et al.*, 2001; Langstrom *et al.*, 2004; Packard and Rosner, 1985; Raymond *et al.*, 1999). Sexual offenders do

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have mental disorders; however, these more commonly include substance use disorders, paraphilias, anxiety, and depression (Kafka and Prentky, 1994; McElroy *et al.*, 1999) rather than major mental illness (psychosis or bipolar disorder). Probably as a consequence of this dual stigma and dual minority status, SOMMI patients are often underserved by the mental health system, which lacks expertise in the management of sexual deviance and are equally poorly served by traditional sex offender-specific treatment programs, which do not consider the unique psychiatric issues within this population (Drake and Pathe, 2004).

A central difficulty for those seeking to provide evidence-based risk management services for SOMMI is that their double minority status means that it is not clear how well research into persons with either major mental illness or persons with a history of sexual offending applies to them. Given the cautions by Grisso (2000) against the generalization of test results outside the population(s) sampled to create norms, this leaves clinicians in the untenable situation of having to choose between using the existing assessment tools despite validity concerns or using unstructured clinical judgment, which has been shown to have weak predictive accuracy (Mann *et al.*, 2010).

The present paper seeks to assist professionals involved in carrying out risk management assessments for SOMMI by speaking to three inter-related questions:

1. How does major mental illness relate to sexual offending?
2. How predictive are commonly used risk assessment tools when used with SOMMI?
3. Is it possible to make individualized assessments of how major mental illness relates to sexual offending?

Unfortunately, research speaking directly to these questions is limited, so in endeavoring to provide a helpful answer we supplement it by drawing on wider bodies of literature.

How does major mental illness relate to sexual offending?

Before turning specifically to studies of SOMMI and sexual offending, it may be helpful to put this in the context of the larger body of studies that have examined the relationship between major mental illness and violent or general offending. Two recent, large meta-analyses of the relationship between psychosis and violence have been reported (Douglas *et al.*, 2009; Bonta *et al.*, 2014). Results indicate that individuals with psychosis are more likely to be violent than the general population or persons with internalizing mental disorders but less likely to be violent than those with externalizing disorders (e.g. Attention Deficit/Hyperactivity Disorder, Oppositional Defiant Disorder, Conduct Disorder, Antisocial Personality Disorder, and Substance Abuse Disorders). As a consequence they are not consistently more violent than the average mentally disordered offender.

Thus, psychosis may be seen as a risk factor for violence but as a less important risk factor than those embodied in externalizing disorders. This conclusion is consistent with other studies which found that treatment non-compliance, suicidal ideation, preoccupation with violence, impulsivity, hostility, and residing in neighborhoods with high-poverty rates appear to increase the risk of violence for individuals with, and individuals without, a major mental illness (Monahan *et al.*, 2001; Silver *et al.*, 1999; Swanson *et al.*, 2006). Somewhat similarly, Bonta *et al.*'s (2014) study also demonstrated that within the mentally disordered offender population in general, and specifically among those determined to be Not Guilty by Reason of Insanity, well-known general criminogenic factors such as procriminal attitudes, antisocial personality traits, and alcohol/substance abuse were more predictive than psychosis.

Consistent with interpreting the literature as indicating that major mental illness is a risk factor for violence is the finding that, among those with major mental illness, treatment specific to these disorders should lower risk. Van Dorn *et al.* (2013) found a protective effect related to mental health services aimed to maintain psychiatric stabilization among 4,056 individuals diagnosed with schizophrenia or bipolar disorder who had been released from a hospital. Specifically, having access to psychotropic medication for at least 90 days significantly reduced the likelihood of felony offenses.

Douglas *et al.*'s (2009) findings suggest that the relationship between psychosis and violence may vary between individuals. They found that violence is specifically linked to positive symptoms of psychosis (including, but not limited to, the well-known Threat Control Over-ride symptoms – Swanson *et al.*, 1996), so that risk would be less elevated for those whose current symptom picture predominantly involved negative symptoms. Taking this idea further, Peterson *et al.* (2014) attempted to study the relationship between mental illness and a general pattern of offending in 143 offenders with a diagnosis consistent with bipolar disorder, schizophrenia, and major depressive disorder. The relationship between the mental illness and criminal behavior was coded for each offense as one of the following: independent relationship between criminal behavior and mental illness; mostly unrelated to mental illness; mostly related to mental illness; or directly related to mental illness (i.e. mental illness was the sole reason for the crime). Peterson *et al.* (2014) reported that the majority of the crimes (64.7 percent) were committed independent of the mental illness, while 27.9 percent were somewhat related to the mental illness, and 7.5 percent were directly related to the mental illness. However, it is notable that this study relied primarily on an interview with the offender, as very little corroborating documentation was available (e.g. hospital admission reports shortly following arrest; forensic psychological evaluations), so it is unclear how valid this determination was.

Regarding studies that are more specifically concerned with sexual offending by SOMMI, it appears that SOMMI sometimes have different offense pathways than their non-psychotic counterparts. SOMMI have been described as tending to victimize other adults in their lives as opposed to children or strangers, to engage in opportunistic and non-violent offenses, and to make little attempt to evade capture by authorities (Craissati and Hodes, 1992).

Potential evidence for major mental illness playing a causal role is that oftentimes sex offending behavior has emerged following the first psychotic episode and the majority of these individuals have been psychotic at the time of the offense (Phillips *et al.*, 1999; Smith and Taylor, 1999). Of course this does not necessarily mean that SOMMI cannot have an independent underlying paraphilia. It is worth considering the multiple mechanisms that may be involved.

Sahota and Chesterman (1998) observed that the first onset of a psychotic break usually occurs at a crucial age period when many patients are developing a sexual identity and establishing intimate sexual relationships. Most individuals with schizophrenia have little to no history of long-term intimate partners and demonstrate profound impairments in social functioning, but will vary in the degree to which a sexual interest has been retained. Specifically, Phillips *et al.* (1999) found that SOMMI were twice as likely as patients with schizophrenia but without a history of sex offenses to report an unimpaired sexual interest. Thus, for those individuals whose sexual drive continues at normal levels, psychosis may create a long-term risk for sexual offending by impairing the development of the skills that would allow this sexual interest to be satisfied in a prosocial way.

A second kind of indirect mechanism has been described by Greenall and Jellicoe-Jones (2007). They report psychotic symptoms exacerbating risk by reducing effective self-regulation. Thus, a pre-existing aggressive or sexual urge that would normally be controlled may be expressed when a psychotic process impairs normal self-regulation.

A third indirect mechanism has been demonstrated by Olver *et al.* (2011). They found that individuals with psychotic disorders are less likely to complete treatment. SOMMI may therefore be at greater risk because it is harder for them to obtain the protective benefits normally provided by sexual offender treatment.

More immediate ways in which major mental illness may be related to sexual offending were explored by Smith and Taylor (1999). They had clinicians examine the files of 84 patients with schizophrenia who were hospitalized following a conviction for a sex offense. Using clear definitions, clinicians were able to reliably determine whether the mental illness had a direct or indirect relationship to the index offense or whether the symptoms of the mental illness were coincidental. They found that the majority of patients (95.2 percent) were actively psychotic when they committed the index sex offense. In just over half the sample (51 percent), symptoms were present but non-contributory to the sex offense. However, for 25 percent of patients, delusional beliefs indirectly contributed and, for 18 percent of patients hallucinations indirectly

contributed to the index sex offense. Further, delusional beliefs had a direct causal relationship for 18 percent of the patients and hallucinations had a direct effect for 15 percent of the patients (Smith and Taylor, 1999).

While the above mechanisms might mostly apply to both sexual and violent offending, it is worth noting two ways in which sexual offending may be differently affected by major mental illness. First, while negative symptoms of psychosis may indirectly protect from involvement in violent incidents through reduced social contact, these same negative symptoms may contribute to the failure to develop effective social skills and close relationships that in the long run can set the scene for sexual offending. Second, while increased disorganization resultant from psychotic processes may contribute to violence, it may actually disrupt those forms of sexual offending that depend on more skilled and extended grooming of potential victims or their protectors.

There is no doubt that mentally disordered sex offenders with a prior sex offense are much more likely to commit future sex offenses than are mentally disordered offenders without a history of sexual offending. For example, Duggan *et al.* (2013) examined sexual offenders with a co-occurring treatable mental disorder severe enough to require hospitalization, and found that they were about 20 times more likely to commit a sexual offense after release than mentally disordered offenders with no record of sexual offending. Some studies have also examined how the sexual recidivism for SOMMI compares to that of other sexual offenders. The results here are less clear-cut.

Hanson and Bussiere's (1998) meta-analysis found an association between severe mental illness and sexual recidivism. However, the authors note, "the large correlation for our 'severely disordered' variable could be almost completely attributed to Hackett's (1971) report that all of his exhibitionists with psychotic symptoms eventually recidivated" (p. 353). Hanson and Morton-Bourgon (2004) reported a further analysis of this effect, this time with nine studies and a cumulative sample size of 2,783. Again the overall effect was statistically significant but there was significant variability in the effect between studies. Underlying this was a single, large-scale, very carefully conducted study in which a relatively large effect was observed (Langstrom *et al.*, 2004) while there was no consistent effect of psychosis on recidivism across the remaining studies.

Langstrom *et al.*'s (2004) study examined the recidivism rate of a large sample comprising 1,215 convicted sex offenders in Sweden. In all, 4 percent ($n = 57$) had been admitted to the hospital because of a psychiatric disorder within the year preceding the index sexual offense. Sexual recidivism was found to be associated with psychosis, any psychiatric disorder, and any inpatient care, but there was a much stronger association with substance use and personality disorder.

These meta-analytic results are consistent with either there being no real relationship (and Langstrom *et al.*'s, 2004 results being dismissed as a fluke), with methodological limitations disguising a true relationship, or with variable results reflecting psychosis only influencing sexual offending under some conditions. Langstrom *et al.*'s study had better methodology than some of the other studies. Further evidence against dismissing it as a fluke comes from several studies completed after the meta-analyses.

Looman and Abracen (2013) found that within high-risk sex offenders, having a psychiatric impairment added incrementally to the prediction of recidivism after controlling for static risk factors (i.e. Static-99R scores). However, they did not define "psychiatric impairment," so their sample was likely heterogeneous as opposed to strictly composed of individuals with major mental illness. Additionally, their outcome variable was sexual or other violent offending, not just sexual recidivism.

Lee and Hanson (2015) used Cox regression survival analysis to compare the rate of sexual recidivism of sexual offenders under supervision who had a psychiatric history (operationalized as having spent at least one night in a psychiatric hospital) to those who did not have a psychiatric history. They found the rate of sexual recidivism to be significantly faster for those with a psychiatric history. The effect was relatively large with the recidivism rate for those with a psychiatric history being almost twice that of those without this history. Like the Looman and Abracen (2013) study, the main concern here is that the diagnostic composition of the psychiatric history variable is not known and may well have been broader than MMI.

Singer *et al.* (2013) examined the effect of mental illness on parole outcomes by comparing sex offenders who completed parole successfully ($n = 160$) with sex offenders who had been returned to custody after committing at least one additional sex crime ($n = 160$). They had access to a severity of mental health issues classification used by the California Department of Corrections and Rehabilitation in which offenders are assigned to one of three designations based on their mental health needs. The categories include having no mental health concerns, having mild to moderate mental health concerns, and requiring an enhanced program due to mental health concerns. The authors noted that mild to moderate mental health concerns could include anxiety disorders, adjustment disorders, and so forth, as well as more severe disorders (e.g. psychotic disorder). The enhanced program, however, was described as typically including chronically mentally ill offenders. The offenders who recidivated were significantly more likely to have had a mental illness (54 percent compared to 16 percent), but there was no significant difference in recidivism rate between offenders who had mild to moderate mental health concerns and those who had required the enhanced program. Even when controlling for dynamic risk factors, including homelessness, place of residence, and employment, mental illness continued to predict recidivism (Singer *et al.*, 2013). Thus, in this study major mental illness predisposed sexual recidivism, but it did this to about the same degree regardless of severity of mental illness.

Finally, Moulden *et al.* (2012) provided what are probably the methodologically strongest results in that they more specifically examined different kinds of mental disorder and focussed specifically on sexual recidivism. They examined sexual recidivism as a function of psychosis, antisocial personality disorder, and paraphilias in a Canadian sample. They found that all three diagnostic variables made a significant independent contribution to predicting sexual recidivism.

Overall, the research with the SOMMI population is limited and recidivism studies in particular have had inconsistent results with some studies finding marked effects and others finding little effect. Additionally, inferences specific to SOMMI are hampered by a lack of clear diagnostic information for some of the samples. Nevertheless, the weight of the evidence is sufficient to suggest that major mental illness can influence sexual offending and should be taken into account in risk management.

Predictiveness of risk assessment tools with SOMMI

Structured risk assessment tools intended for use with sexual offenders can usefully be regarded as falling into two categories, mechanical and structured professional judgment (SPJ). Both kinds of instrument structure the risk assessment process by directing the evaluator's attention to a predetermined set of risk factors. They differ in three key ways. First, mechanical instruments provide specific mechanical rules for scoring each item while SPJ instruments tend to provide more conceptual item-definitions and allow more clinical judgment in determining whether an item applies. Second, mechanical instruments provide specific mechanical rules (usually, summing item scores) for combining items into an overall risk score while SPJ instruments recommend combining items through professional judgment, thus allowing the weight given to a particular item to vary from one assessment to another. Third, the inclusion of items in mechanical instruments is normally justified by the statistical evidence that this item (or similar items) is predictive, authors of SPJ instruments consider this kind of evidence relevant but also draw on theory and the consensus of experienced professionals in deciding to include an item. We review evidence and issues related to use of mechanical instrument with SOMMI first, and then separately consider evidence and issues related to the use of SPJ instruments with this population.

Use of mechanical risk assessment instruments with SOMMI

Static actuarial tools are widely used to sort sexual offenders into groups that differ in their risk for sexual recidivism. Such classifications allow correctional systems to better follow the Risk-Need-Responsivity principles (Andrews and Bonta, 2010) and may also play a part in the risk management provided by forensic mental health services. Clearly these tools are potentially relevant to SOMMI but are they actually applicable to a group that is so different from the populations mainly used to develop and test these tools?

The STATIC family of instruments (Static-99: Hanson and Thornton, 2000; Static-99R: Helmus *et al.*, 2012; Static-2002: Hanson and Thornton, 2003; Hanson *et al.*, 2010; and Static-2002R: Helmus *et al.*, 2012) is the most widely used and researched set of instruments of this kind (Interstate Commission for Adult Offender Supervision, 2007; Jackson and Hess, 2007; McGrath *et al.*, 2010; Doyle *et al.*, 2010), so their application to SOMMI is considered here. It should be noted that the underlying structure of these tools involves using static historical information to index the individual offender's standing on broad dimensions relating to age, persistence and generality of past sexual criminality, and persistence of past general criminality. Since other actuarial tools (such as Thornton *et al.*, 2003) share similar underlying predictors, lessons learned from research with the STATIC family of tools can probably be generalized to them.

The original Static-99 study (Hanson and Thornton, 2000) was based on four samples including two from prisons and two from secure psychiatric facilities. Psychosis was likely a primary diagnosis within one of the psychiatric facilities (i.e. Oak Ridge in Canada). Although the frequencies of diagnoses were not described in the original Static-99 study, such data has been provided for Oak Ridge as a whole and suggests that psychosis was the primary diagnosis in 47-69 percent of the cases between 1961 and 1995, and 67 percent of patients were designated as Not Guilty by Reason of Insanity by 1995 (Quinsey *et al.*, 1998). The Static-99 predicted sexual recidivism more or less as well for the Oak Ridge sample (AUC = 0.67) as it did for the other three samples (AUC = 0.65-0.73). More recently, the Static-99 was demonstrated to have good predictive validity for an "exceptional" sample (composed of individuals identified as having a history of psychiatric hospitalizations and developmental disabilities) within the Dynamic Supervision Project (AUC = 0.73; Hanson *et al.*, 2007). Further, in a later analysis with a longer follow up (Helmus, 2012), both Static-99R and Static-2002R were found to be predictive for those with a psychiatric history (AUCs of 0.75 and 0.78, respectively). However, the nature of mental health diagnoses in this sample was unknown. Craissati and Blundell (2013) reported that the Static-99 predicted to some degree for a sample of community-based, mentally disordered sex offenders (AUC = 0.65). However, the diagnostic frequencies were not provided and a brief description of the mental health issues within one treatment group suggests the offenders primarily suffered from various types of personality disorders as opposed to a psychotic spectrum disorder. Overall, the limited studies available suggest that the STATIC family of instruments predicts moderately well for mental health populations that would have contained many SOMMI, with AUCs ranging from 0.65 to 0.78. This is comparable to how well these instruments predict in other sexual offender populations and indicates that these instruments can appropriately be used to triage SOMMI into groups differing in their relative risk of sexual recidivism.

Despite this, the proportion of sex offenders with major mental illness contained in the normative samples for Static-99R (Helmus, 2009) is either unspecified or known to be low. We have provided this information in Table I. Therefore, while these instruments appear helpful in making relative risk determinations, it is unknown whether the absolute recidivism rates are accurate for SOMMI. This highlights the need for norms to be developed specifically for SOMMI and it is hoped that researchers attempting to do this will be mindful of reporting diagnoses when conducting further validation and recidivism studies.

The risk indicators employed by the STATIC family of instruments are not psychologically meaningful factors such as those identified by Mann *et al.* (2010). As a consequence, these instruments have three important limitations in the context of risk management: first, they are an incomplete assessment of known risk factors; second, they do not inform the development of specific areas of concern/treatment targets; and third, they cannot measure change in risk. Each of these limitations is important. Incompleteness of the risk assessment means that where a group differs systematically on some risk factor not included in the STATIC instrument, that group will tend to have recidivism rates different from those indicated by the Routine norms (Hanson *et al.*, 2015). Failure to identify treatment targets means that assessment does not support application of the Need Principle (Andrews and Bonta, 2010). Finally, being unable to assess change in risk is a particularly egregious limitation for a population whose risk may fluctuate in response to the effectiveness of psychiatric management.

Table I Prevalence of major mental illness in the 2009 Static-99R normative samples

Study	*n*	*Setting*	*Major mental illness*
Routine samples ($k = 8$)			
Bartosh *et al.* (2003)	186	Prison	Not reported
Bigras (2007)	483	Prison	Not accessed (dissertation)
Boer (2003)	299	Prison	Not accessed (master's thesis)
Craissati *et al.* (2008)	209	Community	Unpublished study
Eher *et al.* (2008)	706	Prison	Not reported
Epperson (2003)	177	Prison and community	Not reported
Hanson *et al.* (2007)	702	Community	10% had at least one day inpatient hospitalization but diagnosis not reported
Långström (2004)	1,278	Prison	Approximately 18% of the total sample had any psychiatric inpatient care and 3% had a diagnosis of psychosis
Treatment needs samples ($k = 6$)			
Allan *et al.* (2007)	492	Prison	Not reported. However, the sample was involved in a prison treatment program, which required them to be free of active symptoms of mental illness
Brouillette-Alarie and Proulx (2008)	228	Maximum-security psychiatric hospital	Not reported
Harkins and Beech (2007)	197	Prison and community	Not reported
Johansen (2007)	273	Prison	Not accessed (dissertation)
Swinburne Romine *et al.* (2008)	680	Community	Not accessed (dissertation)
Ternowski (2004)	247	Prison	Not accessed (dissertation)
High risk/need samples ($k = 6$)			
Bengston (2008)	311	Pre-trial forensic psychiatric unit	No diagnosis reported, although the sample includes subjects suspected of major mental illness and intellectually disabled
Bonta and Yessine (2005)	133	Prison	Reported schizophrenia as occurring in 8% of "flagged" offenders and 12% in higher risk offenders
Haag (2005)	198	Prison	Not accessed (dissertation)
Knight and Thornton (2007)	466	Treatment facility for sexually dangerous persons	7% of the sample met DSM-III criteria for schizophrenia as scored on the VRAG
Terry Nicholaichuk (2001)	281	Maximum-security forensic mental health facility	Not reported
Wilson *et al.* (2007a, b)	232	Prison	Not reported

Instruments that assess a fairly comprehensive range of known psychological risk factors and show incremental predictive value relative to static instruments can be combined with them to address these limitations. There are several structured mechanical tools designed to measure criminogenic needs of sex offenders, including the STABLE-2007/ACUTE-2007 (Hanson *et al.*, 2007), Structured Risk Assessment – Forensic Version (SRA-FV; Thornton and Knight, 2015), the Violence Risk Scale: Sex Offender Version (VRS:SO; Olver *et al.*, 2007), and the Sex Offender Treatment Needs and Progress Scale (SOTIPS; McGrath and Cumming, 2003). These, however, were mainly developed with general sexual offender populations in mind and it is unclear how well they apply to SOMMI.

There are some reasons for supposing they might apply. As noted earlier, Bonta *et al.* (2014) found that criminogenic needs relevant to general and violent recidivism in offenders generally were also predictive of these outcomes for mentally disordered offenders, many of whom were diagnosed with schizophrenia. However, the limited available research raises questions about the applicability of the current instruments to SOMMI for assessing criminogenic needs relevant specifically to sexual recidivism.

The Dynamic Supervision Project (Hanson *et al.*, 2007; Helmus, 2012) examined the ability of static and psychological factors to predict sexual recidivism in a sample of Canadian sexual offenders under supervision. As noted earlier, a subset (about 10 percent) of the sample was designated as having a psychiatric history on the basis of having had at least one overnight stay in a hospital for a psychiatric issue. Hanson *et al.* (2007) constructed a fairly comprehensive

measure of psychological risk factors that they named STABLE-2007. They were able to demonstrate that scores on this instrument predicted sexual recidivism for child-molesters and rapists. However, STABLE-2007 turned out to have no predictive value for developmentally delayed sexual offenders (AUC = 0.50) and weak predictive value for those with a psychiatric history (AUC = 0.60). Indeed, it was notable that for those with a psychiatric history, combining STABLE-2007 with Static-99R actually degraded prediction relative to the level of predictive accuracy obtained with Static-99R alone (AUC = 0.74 for Static-99R alone; AUC = 0.67 for the recommended Static-99R/STABLE-2007 combination). A similarly low level of prediction (AUC = 0.63) for STABLE-2007 was obtained in Craissati and Blundell's (2013) study of mentally disordered sex offenders placed in a community treatment program. In this case, however, combining Static-99 and STABLE-2007 seemed to improve prediction. Thus, to date, STABLE-2007 seems to be consistently less predictive with SOMMI than it is with the general run of sexual offenders, and whether it can refine prediction beyond that provided by static instruments is quite uncertain.

STABLE-2007 is not the only instrument to have had difficulties assessing SOMMI. Sachsenmaier *et al.* (2011) studied the field inter-rater reliability of SRA-FV among 69 high-risk sex offenders were evaluated for civil commitment. In total, 30 percent of the cases ($n = 21$) were identified as being "low functioning" due to having cognitive deficits and/or major mental illness. Sachsenmaier *et al.* (2011) found the intra-class correlation (ICC; a measure of inter-rater reliability) to be poor (ICC = 0.55). However, when the "low functioning" cases were excluded, the ICC greatly improved (ICC = 0.68). Sachsenmaier *et al.* (2011) identified that some raters had discounted evidence that would otherwise have supported a factor on the SRA-FV because the rater attributed the evidence to low IQ or major mental illness. Sachsenmaier *et al.* (2011) recommended that further instructions for coding this population be made in the SRA-FV coding manual.

It is useful to consider some of the difficulties evaluators may encounter when trying to apply the existing mechanical psychological instruments to SOMMI. There are at least two difficulties. First, scoring guidelines often do not make clear how to rate a psychological risk factor that appears to be affected by the person's mental illness. Some evaluators may choose not to rate risk factors as present if they can be explained by the person's mental illness, whereas other evaluators, faced with the same fact picture, would attribute psychological risk factors that are manifested primarily during acute periods of psychosis as enduring characteristics of the individual. This variation in evaluator rating behavior will impair reliability and thus reduce predictive validity. Second, where the intensity of psychological risk factors changes profoundly depending on how well managed a person's mental illness is, no single score can validly characterize the intensity of psychological risk factors.

Use of SPJ risk assessment instruments with SOMMI

Three SPJ instruments seem relevant to the assessment of the sexual recidivism risk presented by SOMMI. These are the Sexual-Violence-Risk Management 20 (SVR-20; Boer *et al.*, 1997), the Risk for Sexual Violence Protocol (RSVP; Hart *et al.*, 2003), and the Assessment and Manageability for Individuals who Offend Sexually (ARMIDILO-S; Boer *et al.*, 2004). Evidence is limited for two of the three instruments. The first two instruments are similar and share three important potential merits. They both allow an integrated assessment of static and dynamic factors, they both involve an explicit assessment of the role of mental illness in the person's risk, and they both allow the clinician to determine how much weight to give to mental illness in making the final risk assessment. The third instrument contains dynamic individual and environmental factors.

There are no published studies examining the predictive value of the RSVP in relation to sexual recidivism. One unpublished conference presentation (Hart *et al.*, 2008) described the RSVP's application to a small sample ($n = 90$) of sexual offenders participating in community sexual offender treatment. It is unknown whether any of these offenders were SOMMI. In this sample the RSVP was about as predictive as the SVR-20 and a variety of mechanical instruments. Of particular note, the RSVP was reported as correlating 0.97 with the SVR-20, suggesting that it likely shares that instrument's predictive properties.

The ARMIDILO-S was designed for use with sexual offenders with learning disability. In two small studies it has appeared to show good predictive results (Blacker *et al.*, 2011; Lofthouse *et al.*, 2013) but neither sample seems to have been composed of SOMMI. This instrument has particular promise since it systematically incorporates assessment of the environment as well as individual dynamic factors of the offender, something that may be particularly relevant with SOMMI. The ARMIDILO-S includes a Mental Health item within the Stable Client Items, although personality disorders are included under this item as well, and Changes in Unique Considerations within the Acute Client Items, which captures sudden changes in mental health symptoms and medication changes.

Early reviews of the SVR-20's predictive abilities (Hanson and Morton-Bourgon, 2009) described average predictiveness that was at least comparable to that of static actuarial instruments but great variability from one study to the next in how predictive it was. This meta-analysis was based on ten studies. It is impossible to discern from this review what proportion of participants were SOMMI. These results have been supplemented by studies published subsequent to this review. Table II summarizes research into the SVR-20's predictiveness using the AUC statistic for 13 studies. Also shown is available information about the proportion of the sample that were SOMMI.

What is most striking about these results is the degree of variation in the AUCs. This is consistent with Hanson and Morton-Bourgon's (2009) finding of significant variation in predictiveness. A useful reference point in considering the AUCs shown in Table II is that the average AUC for Static-99 and Static-99R across multiple data sets (Helmus *et al.*, 2012) is 0.71/0.72. Of the AUCs in Table II, nine are lower than this reference point, one is the same, and three are higher. Consistent with this, the median AUC is 0.63 and in fact six studies have AUCs below 0.6, indicating poor predictive ability. In contrast, two studies show very high AUCs (0.8 and above).

It is tempting to attribute this variation in AUCs to the degree in which the team of raters understood the instrument and the SPJ model. Perhaps sophisticated teams working with rich clinical data obtain good results. A warning against this interpretation is that a sophisticated team working at the same clinic has obtained both very good and very poor predictive results with the SVR-20 (de Vogel *et al.*, 2004; de Vries Robbé *et al.*, 2015).

None of the SVR-20 studies were with a pure SOMMI population but three seem to have had a larger proportion of SOMMI. About half of de Vogel *et al.*'s (2004) participants had a history psychiatric hospitalization, about one in five of Hill *et al.*'s (2012) participants were detained in a psychiatric hospital due to insanity or diminished capacity. And nearly half of Sjöstedt and

Table II Prevalence of major mental illness in SVR-20 studies

Study	*n*	*Setting*	*Major mental illness*	*AUC*
Barbaree *et al.* (2008)	468	Prison	Not reported. However, 8% of the sample were assigned a score of 2 on the MMI item of the SVR-20	0.63
Blacker *et al.* (2011)	88	Community	Not reported. However, 50% had borderline intellectual functioning or lower	0.59
Craig *et al.* (2006)	85	Community	0%	0.48
Dempster and Hart (2002)	95	Prison	Not reported	0.74
de Vogel *et al.* (2004)	122	Forensic psychiatric hospital	56% had a previous psychiatric hospitalization	0.80
de Vries Robbé *et al.* (2015)	83	Forensic psychiatric hospital	3% with a psychotic disorder	0.58
Hill *et al.* (2012)	90	Court ordered psychiatric evaluation	19% detained in a psychiatric hospital due to insanity or diminished capacity	0.52
Parent *et al.* (2011)	503	Treatment facility for sexual dangerous persons	Not reported	0.66
Ramirez *et al.* (2008)	163	Prison	Not reported	0.83
Rettenberger *et al.* (2011)	493	Prison	Not reported	0.71
Sjöstedt and Långström (2002)	51	Pre-trial forensic assessments	43% found NGI for index offense. 35% had a psychiatric contact within 6 months of index offense	0.49
Smid *et al.* (2014)	332	Prison and forensic psychiatric hospital	Not reported	0.58
Stadtland *et al.* (2005)	134	Prison	0% (major mental illness was specifically excluded from study)	0.68

Långström's (2002) sample had been found Not Guilty by Reason of Insanity. Results from these three samples mirror those for the larger collection of SVR-20 studies in Table II. They are wildly variable, with AUCs of 0.49, 0.52, and 0.80, and an unweighted mean AUC of 0.60. Or to put it another way, the SVR-20 did wonderfully well in one of the three studies and had no predictive value in the other two.

These results are disconcerting. The low average AUC and the high proportion of studies in which prediction is poor means that an evaluator using the SVR-20 cannot rely on getting other than poor predictive accuracy when using this instrument. On the other hand, the occasional high AUC and the good results obtained with SPJ instruments like the HCR-20 suggests that under some conditions this instrument can perform well.

Making an individualized assessment of how major mental illness relates to sexual offending

A central difficulty in assessing SOMMI is that while the intensity of their risk factors may be affected by how well managed their mental illness is, it is unsafe to assume that the presence of mental illness has a uniform effect on sexual offending. Indeed, sometimes major mental illness will directly or indirectly influence sexual offending, but sometimes it would not (Smith and Taylor, 1999). This raises the question of how the relationship between mental illness symptoms and sexual behavior is to be assessed. Is it possible to assess this in an individualized way? Although there are no currently established tools to aid in this determination, one can reasonably glean this information through a thorough psychosexual evaluation that examines the chronology of the individual's problematic sexual behaviors and its proximity to more acute mental illness symptoms. Important questions to consider would be: first, whether the onset of the problematic sexual behavior pre-dates the first psychotic break; second, whether episodes of problematic sexual behavior occur primarily when the individual is psychiatrically stable, in a decompensated state, or in either condition; third, for individuals who engage in problematic sexual behavior regardless of psychiatric state, whether the sexual behaviors present differently as the individual becomes increasingly symptomatic; and fourth, whether there are co-morbid risk factors, such as substance use, personality disorders, or cognitive deficits that may be contributing to risky sexual behaviors. We would caution evaluators against making judgments about how the mental illness may be contributing to sexual recidivism risk based on one or two sexual offenses. Rather, it is important to look for a pattern of changes in sexual behavior, as well as other underlying psychological risk factors.

The kinds of case formulation that can result from a careful review of data related to these four questions are illustrated below:

1. Acute symptoms of a psychotic disorder have a direct causal effect on the sexual offenses: when he is psychiatrically stable and compliant with treatment, static actuarial scales likely yield an over-estimate of his risk for re-offense, but when acutely psychotic his risk is quite high.

2. Risk is related to an underlying predisposing disorder (e.g. paraphilic arousal pattern or antisocial personality pattern) that pre-existed and operates almost independently of his major mental illness. However, mental illness symptoms may exacerbate underlying psychologically meaningful risk factors. For example, an individual diagnosed with bipolar disorder may experience periods of increased hypomania, which then acutely impacts the expression of sexual preoccupation and impulsivity.

3. Risk relates to an underlying predisposing disorder (e.g. paraphilic arousal pattern or antisocial personality disorder), the impact of which is moderated by his major mental illness: his psychotic symptoms act as a protective factor, disrupting the organized behavior central to planning, grooming, carrying out the offense, and evading capture. This may result in disorganized, impulsive, opportunistic, and easily detected problematic sexual behavior (e.g. leering at women; exposing himself in a high-profile setting). At its most extreme, catatonia results in a near absence of risk, while at his best psychiatric baseline his offending is planned, more severe, and hard to detect.

Current recommendations and guidelines

The STATIC family of instruments appears to have acceptable predictive validity with a SOMMI population. We would recommend use of the revised versions (Static-99R, Static-2002R) since these take better account of the protective effect of older age. These age adjustments of assessed risk may be particularly important for SOMMI as the health of persons with major mental illness appears to be more adversely affected by the aging process (Casey *et al.*, 2011). Further, age has been shown to serve as a protective factor for serious recidivism among individuals with schizophrenia and bipolar disorder (Van Dorn *et al.*, 2013).

When using these instruments, evaluators should keep in mind that the presence of mental illness symptoms at the time of the offenses may reduce the likelihood of formal criminal charges due to such individuals being diverted to the mental health system. As a result, this process may affect some items. However, the Static-99 scoring manual attempts to account for this process. For example, the scoring manual reads, "Informal hearings and sanctions such as placement in treatment facilities and residential moves would be counted as both a charge and a conviction for a sexual offense" (www.static99.org). Therefore, evaluators are encouraged to carefully consult the scoring manual when assessing a SOMMI individual. It is also important to obtain a thorough psychiatric history that includes a history of non-adjudicated problematic sexual behavior within treatment settings so as to avoid underestimating the individual's risk.

It is currently difficult to unqualifiedly recommend for use with SOMMI any of the known instruments intended to assess psychological risk factors for sexual offending since they are either untested with this population or there appear to be problems with their application. However, some structured assessment of psychological risk factors would seem to be preferable to unstructured clinical judgment. The challenge is to find ways of assessing psychological risk factors that overcome some of the problems identified earlier. We recommend using the four questions detailed above to assist in judging how problematic sexual behaviors, and associated psychological risk factors defined by the various structured instruments, change as a function of individuals' psychiatric stability. If the overall density of psychological risk factors appears to be relatively unaffected by psychiatric stability, then scores on structured instruments assessing these factors should have their usual meaning. On the other hand, if the overall density of psychological risk factors is substantially affected by psychiatric stability, then the evaluator should determine both the level of psychological risk factors that is liable to apply when individuals are psychiatrically decompensated and endeavoring to live in the community without any special support, and the level of psychological risk factors that is liable to apply when individuals are at their best psychiatric baseline that they might be expected to achieve with the best psychiatric support that might plausibly be available to them in the community. Instruments like the Structured Assessment of PROtective Factors (SAPROF; de Vogel *et al.*, 2012) may play a useful role here in characterizing the level of support available under different conditions in a multifaceted way, for example considering the level of support provided by social protective factors.

This approach allows the evaluator to describe individuals in terms of a range of risk conditional on psychiatric support. More specific statements may be made if there is a plan/expectation for a particular level of community psychiatric support but these should be contextualized with statements about the level of risk that is liable to apply if the individual decompensates.

Users of the Static-99R who are concerned with estimating absolute sexual recidivism rates will need to select a normative reference group when assessing a SOMMI. The Static-99R (Hanson *et al.*, 2015) currently has two sets of recidivism norms: Routine and High Risk/High Needs (HRHN); see www.static99.org for more on these recidivism norms. As the differing recidivism rates between these normative groups appear to be accounted for by the presence of psychological risk factors, current recommendations for sex offenders include using a mechanical assessment of psychological risk factors to guide the selection of recidivism norms (Hanson and Thornton, 2012).

This is not straightforward given the current difficulty in using such tools with the SOMMI population, however, the approach described above provides one way of approaching this.

That is, one can apply this approach as usual when individuals' levels of psychological risk factors are not affected by their psychiatric stability. On the other hand, when their level of psychiatric stability does moderate their level of psychological risk factors, conditional risk assessments will have to be made, with the ascribed risk being estimated both for how they would function unsupported in the community and how the level of psychological risk factors would apply at the best psychiatric baseline that they might be expected to achieve with the best psychiatric support that might plausibly be available to them in the community.

Where evaluators do not feel able to make this kind of determination, we suggest that they should present recidivism estimates from both Routine and HRHN norms and acknowledge that the person's risk probably lies between these estimates. This strategy is based on two notions. First, that SOMMI are clearly not average sexual offenders, and indeed may generally have elevated recidivism rates (see earlier review). Second, that they nevertheless have not been as clearly selected for risk as have the samples defined as HRHN.

More generally though, we recommend that where possible evaluators avoid getting drawn into estimating absolute sexual recidivism rates that are relevant to particular SOMMI. Instead evaluators will generally do better to stay on the firmer ground of being able to triage SOMMI in terms of relative risk and to provide informed risk management guidance based on an understanding of how their mental illness affects psychological risk factors in general, and problematic sexual behaviors in particular. In so doing, evaluators should consider the relationship between the mental illness and problematic sexual behavior as well as the unique risk factors and risk management challenges stemming from that relationship. Factors such as acute changes in the individual's mental status, medication non-compliance, use of alcohol or drugs, changes in certain medical conditions such as diabetes, and changes in the external level of supervision or support can have a sudden impact upon a SOMMI's psychiatric presentation and thereby impact the expression of psychologically meaningful risk factors and problematic sexual behaviors. Attention and monitoring of these unique risk factors is important in effective risk management practices. The SAPROF may be helpful in this area, as the measure is highly dynamic and includes items that may be particularly useful with this population including motivation for treatment, medication, professional care, and living circumstances (e.g. living settings with oversight by mental health staff).

Finally, although we are aware that the SVR-20 and related instruments are popular with mental health professionals in some jurisdictions, our review of prediction studies indicates that it is not safe to rely on this instrument in risk assessment. In a majority of studies the SVR-20 has turned out to have poor predictive value. Presumably the same applies to the RSVP (given the high correlation between these two instruments) though there has been so little published research with the RSVP that the properties of this instrument are presently unknown. The ARMIDILO-S has yet to be validated on the SOMMI population but shows potential in its applicability.

Future directions

Almost all of the areas discussed here would benefit from further research. We need more information about the frequency of different kinds of relationships between major mental illness and sexual offending, and the identification of different pathways through which they interact. The issue of whether SOMMI have a higher sexual recidivism base rate than ordinary sexual offenders needs further research (e.g. we would benefit from the development of Static-99R recidivism norms specifically for the SOMMI population). This would provide a sounder foundation than applying Routine or HRHN norms that were largely based on offenders without major mental illness. We desperately need reliable ways of identifying criminogenic needs within the SOMMI population since this is vital for effective treatment and risk management practices. More fundamentally we need assessment models that allow structured ways of incorporating the three-way interaction between psychological risk factors, major mental illness and environmental protective factors.

Although we have sought to make recommendations that are reasonable in the light of existing knowledge, this is truly an area in which more research is needed.

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Corresponding author

Dr Sharon M. Kelley can be contacted at: SharonM.Kelley@dhs.wi.gov