Examining the utility of strengths and protective factors in violence risk assessment measures in a tertiary civil psychiatric population

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Abstract

Research on risk assessments utilizing protective factors with civil psychiatric populations remains limited. Additionally, there has been some debate regarding the generalizability of risk assessment measures to female populations given that many of these measures were developed with male populations. Despite this, no known studies exist that have made direct comparisons between male and female civil psychiatric patients on protective factors and violence prediction. The *Structured Assessment of Protective Factors for Violence Risk* (SAPROF; de Vogel et al., 2008) is a structured professional judgment risk assessment measure intended to be used in conjunction with a measure of risk factors, (i.e., HCR-20, Webster et al., 1997). The *Short-Term Assessment of Risk and Treatability* (START; Webster et al., 2004) is a multidisciplinary tool that is intended for use in inpatient and community settings and for which clinicians code the measure by considering a client's strengths and vulnerabilities. Until now there has been no empirical comparison of the START and SAPROF. To address these gaps in the current body of knowledge on the utility of protective factors in violence risk assessment, we conducted a prospective study, utilizing interview and file review to investigate strength based risk assessments in a male and female civil psychiatric population. Participants included 102 civil psychiatric patients residing at a large tertiary psychiatric hospital who were being transferred to community-based tertiary inpatient settings. Baseline file reviews and interview-based assessments were conducted prior to patient transfer to community based treatment facilities. Outcome data (i.e., verbal, sexual, and physical aggression) was collected every 6 months over a 12-month period. We found evidence that supports the use of strength based risk assessments with civil psychiatric populations. On the whole, the psychometric properties for all the measures included were good. Protective factors demonstrated incremental validity over the risk factors alone, as did summary risk judgments over actuarial assessments. We found a number of potentially interesting gender differences in the predictive validity of all the risk measures included. Generally, these measures performed better with the males when predicting physical and verbal aggression, and better with the females when predicting sexual aggression.

Keywords: Risk assessment; protective factors; violence; civil psychiatric patients; gender differences; serious mental illness

Dedication

To my mother and father who always believed in me even (especially) when I did not, your unwavering love and support is what got me here. I also dedicate this to my partner, Nathan M. LaPlante, who motivated me and supported me throughout this whole process.

Acknowledgements

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List of Acronyms

AUC   Area Under The Curve

FAM   Female Additional Manual

HCR-20   The Historical, Clinical, Risk Management-20 Version 2

ICC   Intraclass Correlation Coefficients

IFRJ   Integrated Final Risk Judgments

IORNS   Inventory Of Offender Risks, Needs, And Strengths

PCL-SV   Psychopathy Checklist Screening Version

RA   Research Assistants

ROC   Receiver Operating Characteristic

RVH   Riverview Hospital

SAPROF   The Structured Assessment Of Protective Factors For Violence Risk

SAVRY   Structured Assessment Of Violence Risk In Youth

SMI   Serious Mental Illness

SOS   Start Outcome Scale

SPJ   Structured Professional Judgment

START   The Short-Term Assessment Of Risk And Treatability

VRJ   Violence Risk Judgments

Chapter 1.

Introduction

1.1. Serious Mental Illness and Violence/Offending

Past research has found a relationship between serious mental illness (SMI) and multiple negative outcomes such as violent behaviour, suicide, victimization and homelessness (Douglas, Guy, & Hart, 2009; Fazel, Gulati, Linsell, Geddes, Grann, 2009a; Fazel, Lichtenstein, Grann, Goodwin, & Långström, 2010; Hodgins, 1992; Hillbrand, 2001; Hiroeh, Appleby, Mortensen, & Dunn, 2001; Nicholls, Brink, Desmarais, Webster, & Martin, 2006; Roy, Crocker, Nicholls, Latimer, & Ayllon, 2014; Salkow, & Fichter, 2003; Short, Thomas, Luebbers, Mullen, & Ogloff, 2013; Short, Thomas, Mullen, & Ogloff, 2013; Volavka & Swanson, 2010). However, there is some debate as to the exact nature of the relationship between SMI and violence/offending. Hillbrand (2001) and Nicholls and colleagues (2006) concluded that patients with SMI showed relatively high rates of aggressive behaviour compared to previous research on the general population, and further that this aggression was correlated with other adverse behavioural outcomes such as victimization, self-harm, suicide ideation and behaviours, and self-neglect. Douglas and colleagues (2006) conducted a large-scale systematic review of the violence prediction literature, and found that a psychotic illness was associated with a 49-68% increased risk of violent behaviour.

A large-scale study by Appelbaum and colleagues (2000) following acute psychiatric patients discharged from hospital found that SMI was either not associated, or was even negatively associated, with violent behaviour. Additionally, a recent study by Elbogen and Johnson (2009), using the *National Epidemiologic Survey on Alcohol and Related Conditions*, found that severe mental illness alone did not predict future violence. Severe mental illness in combination with substance abuse/dependence and a

history of violence was the strongest predictor of future violence (Elbogen & Johnson, 2009). Furthermore, other studies have found that substance abuse acts as a mediating factor in violence perpetration among individuals with mental illness (e.g. Buckley, Miller, Lehrer, & Castle, 2009; Fazel et al., 2009a; Fazel, Långström, Hjern, Grann, & Lichtenstein, 2009b). For example, a systematic review by Fazel and colleagues (2009a) found that there was a relationship between schizophrenia and other psychotic spectrum disorders with violence perpetration, but that this relationship is mediated by substance abuse. In contrast, a recent study by Short et al., (2013) looked at the association between SMI and violence in a sample of 4168 patients with schizophrenia, and found that even patients diagnosed with schizophrenia but without co-morbid substance abuse disorders had an elevated risk of violence perpetration compared to the control group with no schizophrenia diagnosis.

Thus, the exact nature of the relationship between SMI and aggression against others is unclear. Some findings suggesting that SMI is related to violence perpetration, others have found no relationship and finally some studies suggest that substance abuse mediates the relationship. Regardless of the causal mechanism, it does appear that aggression towards others occurs frequently in psychiatric populations, thus having methods to assess and manage risk of violence perpetration within these populations is essential.

1.2. Prediction of Future Violence/Offending

Given the relationship between SMI and violence, it is imperative within psychiatric settings for the safety of staff and patients that clinicians complete an assessment of risk of violence to self and others so that they can tailor treatment and implement safety strategies such that they are better able to manage that risk. Risk assessments are often utilised by courts and review boards to help inform decisions around how to balance an individual's civil liberties and public safety. For example, a risk assessment might be used to decide on sentencing length for an individual or if a patient should be released from a forensic psychiatric institution. A variety of tools have been developed for the prediction and management of future violence and offending. Many risk assessment tools rely largely on demographic and static risk factors, such as age,

prior offences, and childhood history, which remain largely unchangeable and are, therefore, less useful for treatment planning purposes (Rogers, 2000). Douglas and Skeem (2007) asserted that the focus on static risk factors to the exclusion of dynamic factors is not especially useful in terms of risk management. However, even in the case of measures that include dynamic risk factors, most risk assessment tools still largely ignore the presence of possible protective factors that reduce the likelihood that an individual will reoffend (Rogers, 2000; de Ruiter & Nicholls, 2011).

Risk assessments that ignore client's strengths and protective factors can have several potential detrimental effects. As mentioned above, risk assessments can have potential influence over an individual's civil liberties and freedoms, yet risk assessments that exclude protective factors reflect a biased/one-sided perspective (Rogers, 2000; de Ruiter & Nicholls, 2011). Assessments that only consider a patient's deficits and vulnerabilities may not be an accurate reflection of an individual's risk of re-offending, because protective factors may have a compensatory or mediating effect on the risk factors, leading to a more positive outcome (Webster et al., 2004, 2009). In addition, a one-sided risk assessment may also have a stigmatizing effect, particularly within forensic and civil psychiatric populations, and engender negative views of these patients in professionals and the general population (de Ruiter & Nicholls). Some experts argue that protective factors are simply the opposite or absence of risk factors (Costa, Jessor, & Turbin, 1999; Hawkins, Catalano, & Miller, 1992). Although this is possible, the relationship appears to be more complex, and whether a factor is protective or not depends largely on the context and the level of the factor (Rogers, 2000). Take the example of intelligence, having high levels of intelligence can be considered a protective factor, unless it is combined with psychopathic personality disorder, in which case having high intelligence might be a risk factor (de Vogel, de Ruiter, Bouman, & de Vries 2009)

In response to the concerns raised in the literature, risk measures that include protective factors have been developed, including four measures that have been published recently: the *Structured Assessment of Violence Risk in Youth* (SAVRY; Borum, Bartel, & Forth, 2006), *Inventory of Offender Risks, Needs, and Strengths* (IORNS; Miller, 2006a), *The Short-Term Assessment of Risk and Treatability* (START;

Webster et al., 2004), and *The Structured Assessment of Protective Factors for Violence Risk* (SAPROF; de Vogel et al., 2009). It seems intuitive that ignoring protective factors in risk assessment would only result in unbalanced and inaccurate risk assessments and that more focus should be placed on the use of tools which incorporate both risk and protective factors. Research on protective factors and their utility in risk assessments is limited, despite the fact that many scholars have called for their inclusion in these assessments (Rogers, 2000; de Ruiter & Nicholls, 2011; de Vogel, et al., 2009; Webster et al., 2006).

1.3. Resilience and Protective Factors

Resilience in the forensic and psychiatric context might be best understood in terms of protective factors that help individuals either avoid or reduce their risk of negative expected outcomes (e.g. violence, suicide, victimization etc.). Thus, despite the presence of risk factors, a negative outcome is reduced or avoided as a result of protective factors (Fergus & Zimmerman, 2005). A related concept is vulnerability, which is sometimes seen as the polar opposite of resilience, in that vulnerability is the extent to which someone will have an increased likelihood of a negative outcome after exposure to a risk factor, whereas resilience relates to avoiding the negative outcome despite the presence of that vulnerability. When the negative outcome is avoided and the vulnerability is not present, this can be viewed as normative development or normative responding (Fergus & Zimmerman, 2005).

According to Bonanno (2004) there is a distinction between recovery and resilience, in that resilience is characterised more by the ability to generate positive experiences and emotions in the months following a trauma or even immediately afterwards. In contrast, recovery is characterised by an initial traumatic reaction with moderate to severe interruption in normal functioning, followed by a return to normal functioning some months later. Although Bonanno (2004) theorized about resilience in the context of posttraumatic response, this distinction is potentially applicable to psychiatric populations, for instance, in that recovery could be akin to desisting from offending behaviours once released into the community. Conversely, resilience could be

seen in individuals who are considered at high risk for offending but are able to avoid an antisocial life style and alternatively engage in a pro-social lifestyle.

There is also the trait view of resilience, which states that resiliency is a personality trait that some individuals have which help them to overcome adversity, and in this view resiliency is a protective factor (Richardson, 2002). This view is problematic in that it implies that if one has this "resiliency trait," then one is resilient to all types of risks; this would be similar to proposing that one is not only immune to smallpox but also to chicken pox. It seems plausible that different negative outcomes could be buffered by different protective factors. On the other hand, the risk literature supports the view of concurrence in risk factors. For example, we know that childhood abuse is associated with vulnerability for many psychopathologies, including, substance abuse, suicide and violence. The implication that resilience is a trait also suggests that it is static and thus invariant, however, research has indicated that protective factors are in fact dynamic, and may even possibly be taught (Schwartz, Magee, Griffin, & Dupuis 2004; Webster et al., 2006). Additionally, the "resiliency trait" is an internal protective factor, but it is also possible that there are external protective factors that will have an equal or greater influence on resilience depending on the context of the risk and the population (de Vries Robbé, 2014).

Fergus and Zimmerman (2005) describe what is referred to as the resilience process, which basically states that resiliency entails the use of internal protective factors or "assets" in combination with external protective factors or "resources". This seems to be the most useful theory with regard to recidivism research, in that it is clear that some risks are influenced not only by internal factors such as self-esteem and self-efficacy but also by external factors, such as social support or socio- economic status. More importantly, these factors are malleable to change, and thus can guide treatment and risk management. Thus, for the purpose of this study, a *process* conceptualization of resilience was adopted, and as such, both internal and external protective factors were considered.

Within the process concept of resiliency, Fergus and Zimmerman (2005) described three models of resiliency. *Compensatory resilience* directly influences the risk

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factor by working against it independently and thus counteracting or compensating for the effects of the risk. *Protective models of resilience* view negative effects of risk factors as being moderated by protective factors, which could mean that the protective factor either reduces the effects of a negative event or it neutralizes it; these are referred to as protective-reactive and protective-stabilizers, respectively. Lastly, the *challenging model* postulates that resilience is seen more as a "what does not kill you only makes you stronger" philosophy, in that it describes a curvilinear model were both too much and too little risk are seen as resulting in negative outcomes. The challenge model reflects an assumption that individuals need to experience some hardship in order to learn from these experiences and overcome them, using assets and resources as tools to help them attain success. In this model, the same variable could be considered a risk factor or a protective or "promotive factor." It is the extent of exposure that determines which it becomes. Specifically, when the factor is challenging enough but not overwhelming, the individual can learn from it, it becomes a promotive factor. In contrast, if the factor is so challenging that it overwhelms the individual, and then it becomes a risk factor.

1.4. Utility of Protective Factors in Risk Assessment

The budding extant literature indicates that protective factors may be useful in risk assessments in adults (Braithwaite et al., 2010; Chu, Thomas, Ogloff, & Daffern, 2011; Desmarais et al., 2012; Gray et al., 2011; Miller, 2006b; Nonstad, et al., 2011; O'Shea, & Dickens, 2014;Viljoen et al., 2011; de Vries Robbé et al., 2011; de Vries Robbé & de Vogel, 2010; Wilson et al., 2010) and adolescent populations (Lodewijks, 2008; Rennie & Dolan 2010). Research has shown that individuals who desisted from future negative behaviours (i.e., did not commit an act of violence) displayed more protective factors and fewer risk factors than those who recidivated (Desmarais et al., 2012; Gray et al., 2011; Miller, 2006b; Nonstad, et al., 2011 Viljoen et al., 2011; Wilson et al., 2010). Thus, it may be the interaction between protective factors and risk factors that is important in the desistence process, in that more protective factors in combination with low risk factors may be needed to stop engaging in aggression or offending behaviours. Furthermore, several studies have shown that protective factors demonstrate good predictive validity providing evidence for the utility of protective factors

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in risk assessment measures (Braithwaite et al., 2010; Chu, et al., 2011; Desmarais et al., 2012; Gray et al., 2011; Lodewijks, 2008; Miller, 2006b; Nonstad, et al., 2011; Rennie & Dolan 2010; Viljoen et al., 2011; de Vries Robbé et al., 2011; de Vries Robbé & de Vogel, 2010; Wilson et al., 2010). Only a few studies have directly investigated the incremental validity of protective factors over risk factors. These studies have revealed mixed results, with some studies finding support for the additive value of protective factors (Desmarais et al., 2012; Lodewijks, 2008; de Vries Robbé & de Vogel, 2010; de Vries Robbé et al., 2011) while other studies did not find evidence to support incremental validity of protective factors (Chu et al., 2011; Viljoen et al.; 2011; Wilson et al., 2010).

In summary, the literature indicates that protective factors may be useful in risk assessments, which are instrumental in informing mental health professionals how at risk populations such as psychiatric patients and offenders will cope while institutionalized, after transfer to lower security levels and ultimately after release into the community. Specifically, these measures provide clinical practitioners with a useful tool that can help to predict recidivism/desistence upon release through identifying gaps in services, supports, and skills as well as avenues for fostering success. These findings suggest a balanced evaluation of the clients' strengths and weaknesses that can help patients and their direct care providers to manage their risk of engaging in different forms of aggression while institutionalized. However, the literature on desistence and the use of protective factors in risk assessment is still in the early stages, and as such there is still much to be clarified. Future studies still need to determine whether certain protective factors are more important than others, or whether there is merely an additive effect of having more protective factors than risks. For example, is one of Fergus and Zimmerman's (2005) three models of resiliency superior (i.e., compensatory, protective, or challenging) in explaining desistence, or is some other model of resilience needed to describe desistence? Investigation into the individual aspects of those who successfully navigate through their release period, as well as those who do not, will inform our understanding of the characteristics of resilience and also which protective factors are more influential in the resilience process. Similarly, identifying additional protective factors that are predictive of success in the community can help to enhance risk assessment tools and make them more effective in clinical practice. Lastly, future studies will need to compare directly the incremental validity of protective factors in

assessment of future risk of violence and success in the community, as only a handful of studies have looked specifically at the additive value of protective factors in these measures.

1.5. Gender differences in Violence/Offending

There is a plethora of literature that shows than men are more aggressive than women (for review see Nicholls et al., in press). For example, men are convicted of more offences in general including more violent offences than women (West, Sabol, Greenman, 2010). According to United States Bureau of Justice statistics, in 2009 1,500,278 men and 113,462 women were convicted prisoners under the jurisdiction of a state or federal facility (West et al., 2010). Of these convicted prisoners 661,600 men and 31,800 females committed a violent offence. However, it has been suggested that fewer females are being prosecuted for their crimes, which may explain in part these differences in incarceration rates. For example, a study by Horowitz and Pottieger (1991) looking at social biases in the adjudication process with adolescent offenders found that a higher percent of male arrest for a Major Felony went on to adjudication than females (68% vs. 50%), although there were significantly higher numbers of arrest for males than for females (133 vs. 12). Additionally, there is growing evidence to suggest that the apparent gender difference in aggression and violence is diminishing. For example, male violence rates are decreasing while female rates are substantially increasing (Graves, 2006).

Within institutional settings the rates of violence are more similar between men and women (Binder & McNiel, 1990; Ehmann et al., 2001; Lam, McNiel, & Binder, 2000; Hodgins, 1992; Nicholls, Ogloff, & Ledwidge, 2003; Nicholls et al., in press), and intimate partner violence (Dutton, Nicholls, & Spidel, 2005; Magdol, Moffitt, Caspi, Newman, Fagan, Silva, 1997; Lie, Schilit, Bush, Montague, Reyes, 1991). In a seminal article by Hodgins (1992), results showed that women with a major mental illness were 27 times more likely to have committed a violent offence than women who did not have a diagnosis. The men were four times more likely to have committed a violence offence than men without a diagnosis. Similar findings were reported by Short and colleagues (2013), who found that female schizophrenic patients without a substance abuse

disorder had higher odds ratios for violence perpetration than males (females OR = 8.59 vs. males OR = 2.25).

Looking at rates of recidivism after release from forensic and psychiatric institutions, studies that directly compared male and female offender recidivism rates in the community found that females had lower recidivism rates than males (e.g. Freeman & Sandler, 2008; Harris, Rice, & Cormier, 2002; de Vogel & de Ruiter, 2005). However, other studies found similar rates of recidivism between men and women (e.g. Garb, 1997; Schaap et al., 2009; Skeem et al., 2005). Recidivism is challenging to measure because success can be very difficult to operationalize due to what is known as the "dark figure of crime". Most studies rely on either court data or on self-report data in order to ascertain whether individuals reintegrated into the community have reoffended or not. It is clear why this method is problematic, as many crimes go undetected by the authorities and offenders themselves may be reluctant to disclose information about offending for fear of being rearrested. It remains unclear whether female offenders reoffend less than males do or if female reoffending is just not being detected by the criminal justice system. As previously mentioned, males and females do not differ with regard to rates of violent incidents whilst in forensic and psychiatric institutions, thus violence occurring in the community might be under detected (Nicholls et al., 2003; Ross, Hart, & Webster, 1998; de Vogel & de Ruiter, 2005).

1.6. Gender Bias in Violence Risk Assessment

Most risk assessments have been developed and validated using male populations, thus it is important to investigate whether they are as effective with females as with males, especially in light of the recent findings that men and women equally aggress while institutionalized and have similar rates of re-offenses after release (Garb, 1997; Nicholls et al., 2003; Poels, 2007; Schaap et al., 2009; Skeem et al., 2005). A recent review on the effectiveness of risk assessments with female populations found very little evidence to support the use of risk assessments with female populations (de Vogel & de Vries Robbé, 2013). One particular type of risk assessment called, *Structured Professional Judgment* (SPJ), utilises a list of known risk factors, which are then taken into account for an individual by a mental health professional were a final risk

judgement is made by evaluating all of the available information. In these types of assessments, it is clear that there is the risk of biases affecting the judgments of mental health professionals and potentially resulting in inaccurate risk assessments. As a result of some of these concerns, de Vogel and colleagues (2012) published additional guidelines for assessing specific risk factors for women in addition to the HCR-20: the *Female Additional Manual* (FAM).

Studies looking at gender bias in the assessment of risk for violence have found that in general mental health practitioners are less accurate in their judgments with females as compared to males. They tend to rate females as lower risk than males, and in addition they tend to rate females who should be higher risk (i.e., recidivated) as lower risk (Lidz, Mulvey, & Gardner, 1993; McNiel & Binder, 1995; Skeem et al., 2005). For example, one study with a short-term inpatient population found that the males had a higher likelihood of a false positive error and the females had a higher likelihood of a false negative error, or in other words the risk of violence was underestimated for the female patients and overestimated for the male patients (McNiel & Binder, 1995). Skeem and colleagues (2005) found the same effect and also found that the gender of the mental health professional did not improve the accuracy of these judgments indicating that both genders equally underestimated the risk of violence in women in that sample. Thus, it seems that both genders in the mental health profession are likely to be gender biased in their assessments of future risk. Thus, mental health professionals are applying faulty logic in their judgments; they are using aggregate data and applying it to the individual.

1.7. Objective of the Current Study

Given the gaps in the literature outlined above, our overarching goal for this study was to examine the utility of protective factors in risk assessment measures in a chronic civil psychiatric population, which is a commonly under-researched population.

1.8. Research Questions

1. Are strength-based risk assessment measures valid and reliable in a civil psychiatric population?

2. Are protective factors as predictive of negative outcomes as risk factors?

3. Do protective factors and structured professional judgments made using both risks and protective factors show incremental validity in the prediction of negative outcomes?

4. Are strength-based risk assessment measures equally reliable and valid for men and women?

1.9. Hypotheses

1. All the measures included will show good psychometric properties in this sample, similar to previous findings in other civic or forensic psychiatric populations (Braithwaite et al., 2010; Chu, et al., 2011; Desmarais et al., 2012; Gray et al., 2011; Lodewijks, 2008; Miller, 2006b; Nonstad, et al., 2011; Rennie & Dolan 2010; Viljoen et al., 2011; de Vries Robbé et al., 2011; de Vries Robbé & de Vogel, 2010; Wilson et al., 2010).

2. In line with previous research, protective factors will evidence predictive validity of future violence comparable with risk factors (Braithwaite et al., 2010; Chu, et al., 2011; Desmarais et al., 2012; Gray et al., 2011; Lodewijks, 2008; Miller, 2006b; Nonstad, et al., 2011; Rennie & Dolan 2010; Viljoen et al., 2011; de Vries Robbé et al., 2011; de Vries Robbé & de Vogel, 2010; Wilson et al., 2010).

3. Consistent with previous findings, protective factors and structured professional judgments made using both risks and protective factors will show incremental validity in the prediction of negative outcomes (Desmarais et al., 2012; Lodewijks, 2008; de Vries Robbé & de Vogel, 2010; de Vries Robbé et al., 2011).

4. Given previous research demonstrating gender biases in violence predictions (e.g. de Vogel & de Vries Robbé, 2013; Skeem et al., 2005) we hypothesis there will be a gender difference in validity (i.e. predictive) of all the risk measures, including the strength-based measures.

Chapter 2.   Methods

2.1. Participants

This project was part of a larger body of research conducted with patients with severe mental illness (SMI) who were residing in BC's only tertiary psychiatric hospital, Riverview Hospital (RVH). The facility was closed down and patients were moved to residential treatment facilities in the community as part of BC's redevelopment of psychiatric services. We attempted to recruit the entire population of patients being transferred from this facility to community-based care. At the start of data collection, RVH housed $N = 300$ individuals living with SMI of which approximately 243 patients were identified for transfer to the new regionalized tertiary psychiatric facilities as part of the Riverview Redevelopment Project[1]. The vast majority of these patients were hospitalized involuntarily under section 22 of the BC Mental Health Act, indicating that they presented a risk of harm to themselves or others and/or that they were gravely unable to care for their needs. Psychiatrists were asked to provide assent for each patient to be included in the study, of those 230 patients approved to take part, 68 where incompetent to consent and required consent from a substitute decision maker, of which we were only able to contact 5, all SDMs provided consent for the patient to take part in the study. Of the 162 patients who where competent to consent 156 where approached and 143 agreed to be consented. Out of the 148 (five substitute decision makers and 143 patients) that agreed to be consented three where rejected, 33 declined to participate, and 112 where enrolled. During the baseline stage, five participants were recategorized to non-redevelopment status (i.e., they were discharged from the hospital)

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[1] RVH is the last tertiary care psychiatric hospital in BC, and has been slowly downsizing since 1960 with the goal of closure. The final phase of the redevelopment plan includes development of regionalized tertiary psychiatric facilities to treat severely mentally ill individuals that are hard to place and require a similar level of care provided at RVH. In this final stage patients are either discharged to the community or transferred to these regional tertiary psychiatric facilities.

and where excluded resulting in a sample of 107. At follow up one two participants were deceased and three had withdrawn from the study, therefore the final sample was 102 (see Figure 1).

In some cases participants had already moved from RVH to their community based facility, and their baseline data was collected using file only ($n = 23$). Some participants were not stable enough to be interviewed and therefore data collection was done using file information only ($n = 33$), resulting in a mixed sample of interview and file review ($n = 56$) and file review only ($n = 46$) participants.

Figure 1.   Recruitment Flow Chart
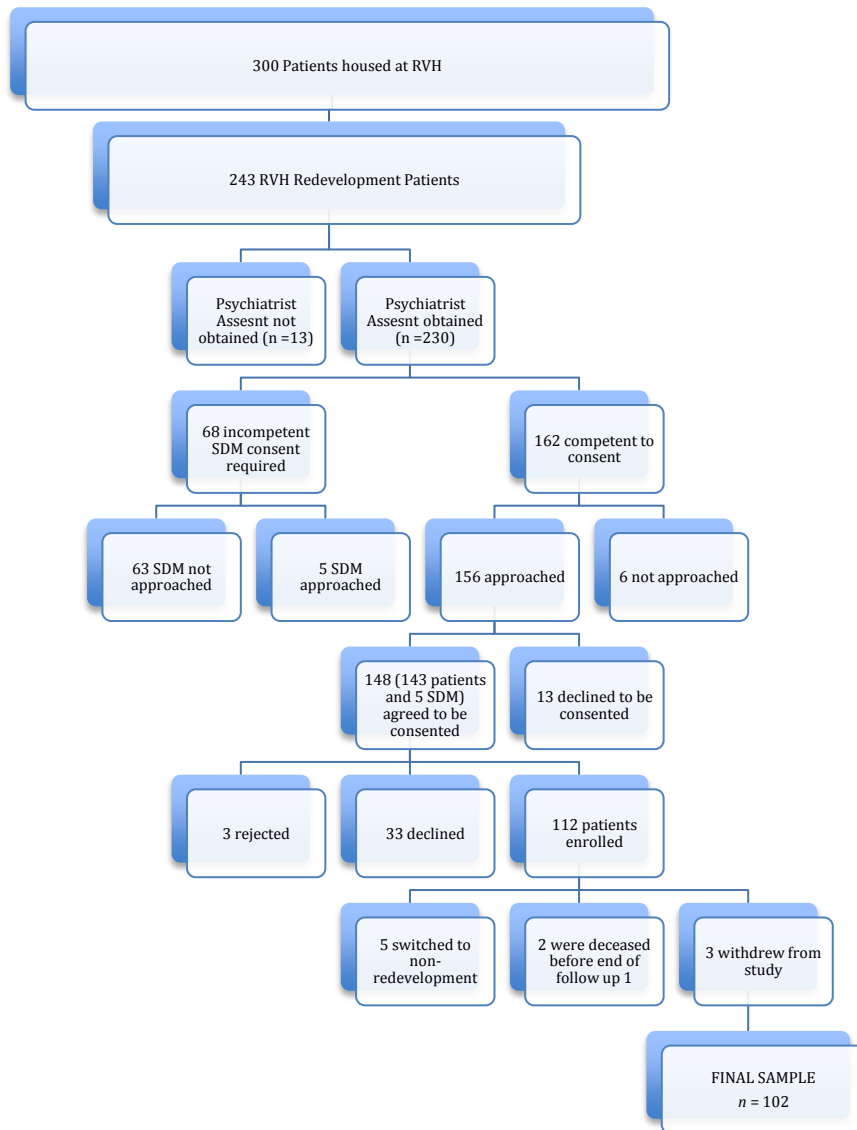
2.2. Measures

A purpose-built coding package that covered several variables, including information about demographic background such as; age, ethnicity, education level, and employment history was used to review the files. Additionally, information was collected on psychological characteristics such as alcohol and substance abuse, current psychiatric diagnosis, and psychiatric history. Forensic history was also obtained including previous forensic psychiatric admissions and history of previous offences (see Appendix B).

Short-Term Assessment of Risk and Treatability (START; Webster et al., 2004; 2009) is a brief clinical guide for the dynamic assessment of clients' risks, strengths, and treatability (Webster et al., 2004, 2009). The START is designed as a structured professional judgment guideline intended to inform the evaluation of multiple-risk domains relevant to everyday psychiatric clinical practice such as: violence, suicide, self-harm, self-neglect, substance misuse, unauthorized leave, and victimization. This tool is intended for use with a broad range of adults in correctional, forensic and civil psychiatric inpatient and community settings. There are 20 items and each item is scored both as vulnerability and strength with scores of 0 (none), 1 (possible), or 2 (definite). These ratings are made using succinct descriptions for each item provided in the manual. After coding the items, the assessor has to make seven different judgments of risk (i.e., violence to others, suicide, self-harm, self-neglect, unauthorized absence, substance use, and victimization), which are each coded as low, moderate, or high risk. The measure is intended for interdisciplinary use and is also meant to inform both therapeutic and forensic assessments (see Heilbrun, 2001; Monahan, 1980). A semi-structured interview was developed in order assist RAs with coding the START (see Appendix C).

The Structured Assessment of Protective Factors for Violence Risk (SAPROF; de Vogel, de Ruiter, Bouman, & de Vries Robbé, 2009) is a measure of protective factors and is intended for use with forensic psychiatric adult populations, to always be used in conjunction with traditional risk focused measures such as the HCR – 20 (Webster et al., 1997). There are 17 protective factors of which 15 are dynamic, with each item coded on a 3-point scale (0, 1, 2). These 17 items are grouped around three scales within the

SAPROF: Internal factors, Motivational factors and External factors. Once a clinician has rated all of the items, he or she makes the Final Protection Judgment of low, moderate, or high based on all the items coded. Lastly, the Final Protective Judgment is considered along with the Final Risk Judgment (made on the HCR-20) to inform an Integrated Final Risk Judgment (low, moderate or high) by interpreting and weighing the risk and protective factors in their totality.

The Historical, Clinical, Risk Management-20 Version 2 (HCR-20, Webster, Douglas, Eaves, & Hart, 1997) is a structured professional guideline, which consists of three main areas: 10 historical factors, five clinical factors, and lastly five risk management factors. Whereas the clinical and risk items are considered dynamic in that they are changeable, the historical items are static as they are generally resistant to change (but some items can worsen). Each item is given a rating of 0 (not present), 1 (possible/less serious), or 3 (definite/serious). A trained clinician uses all available sources of information to complete the assessment and make their judgement of risk. There is a possible score range of 0 – 40 with a higher score indicating higher risk.

To assess psychopathy the *Psychopathy Checklist Screening Version* (PCL:SV, Hart, Cox, & Hare 1995) was used. The PCL-R is considered the gold standard in the assessment of psychopathy (Fulero, 1995). However, the PCL-R is a lengthy and time-consuming measure and as such the PCL-SV (Hart et al., 1995) was developed for screening for the possibility of psychopathy with civil psychiatric patients. The PCL:SV is a 12-item scale based on a subset of PCL-R items that measure emotional detachment and social deviance, or antisocial behaviour. The PCL:SV can be completed in fewer than one and a half hours in both civic and forensic settings. Each item is scored with a 0, 1, or 2, resulting in a maximum score of 40, with a cut-off score of 30 or higher for a diagnosis of psychopathy. A semi-structured interview was developed in order to assist RAs with coding both the PCL:SV and the HCR-20 (see Appendix D).

START Outcome scale (SOS; Nicholls, Gagnon, Crocker, Brink, Desmarais, & Webster, 2007) is a modified version of the Overt Aggression Scale (OAS; Yudofski, Silver, Jackson, Endicott, & Williams, 1986) for use in research and clinical practice. The SOS consists of 11 outcomes: 1) verbal aggression, 2) physical aggression against

objects, 3) physical aggression against self, 4) physical aggression against other people, 5) self-neglect, 6) substance abuse, 7) victimization, 8) sexual aggression, 9) unauthorized leave, 10) suicidal behaviour, and 11) stalking. Each adverse outcome category is rated according to its severity on a 4-point scale from *least severe* (1) to *most severe* (4). Prior research shows that the START outcome scale can be reliably coded from patient files (intraclass correlation coefficient = .70; Nicholls et al., 2006).

2.3. Research Design

We used a prospective design using both file review and interview methods to collect all of our data. Many previous studies have found that file review is a viable means of collecting this type of data (see Douglas, Guy, & Weir, 2006; Nicholls et al., 2006).

2.4. Procedure

2.4.1. Ethics Approval

Firstly, ethics approval for the proposed amendments to the original study protocol (i.e. adding the SAPROF) were obtained from the British Columbia Forensic Psychiatric Services Commission Research Advisory Committee, Simon Fraser University Research Ethics Board, and University of British Columbia Research Ethics Board prior to the start of data collection. Research assistants for this project received training in the research protocols specific to this study, underwent criminal record checks, and completed confidentiality agreements. They were continually mentored regarding safe and responsible data management and ethical issues.

2.4.2. Recruitment and Retention

Baseline file reviews and interviews were conducted at Riverview Hospital when patients were identified for transfer to the new community-based facilities. Psychiatrist approval was obtained prior to approaching patients in order to recruit them for

participation in the study. Patients whose psychiatrist felt they were incapable of consenting did not take part in the study fully (i.e. were excluded from interviews and file review was completed only). Patients that were deemed able to consent were approached by research assistants on their ward and asked if they wished to participate. They were given a description of the objectives of the research and also the potential risks and benefits of participating. Participants were provided a small remuneration ($10/interview) for each interview session (three interview sessions total) to compensate participants for their time and reduce attrition rates. Baseline data collection was completed between 2008 and 2012. Follow-up data collection was completed between 2009 and 2013. We had no attrition the first follow-up, with sample size of 102, and minimal attrition by the second follow-up with a sample of 100.

2.4.3.   Baseline data collection

File reviews were conducted on all hospital chart records to collect information pertaining to demographic, social, psychiatric, forensic, and legal histories. A semi-structured interview was utilized for the patients that were interviewed at baseline for the START (Appendix C) and the HCR-20 and PCL:SV (Appendix D). At this point all original measures included in this study (i.e. START, PCL-SV and HCR-20) were then coded. Data collection was initiated after some of the participants had been transferred to the community based facility, thus for a subset ($n = 23$, 22.5%) of the sample the data was collected retrospectively as opposed to prospectively. The SAPROF was added to the protocol at a later date, after the majority of the baseline data was collected, therefore the SAPROF was coded retrospectively using file information only.

2.4.4.   Inter-rater reliability

In order to assess inter-rater reliability of all the risk measures (i.e. START, SAPROF, PCL-SV and HCR-20) approximately 15% were coded by two research assistants (RA). The file reviews and risk measures were coded by 12 RAs in total. All the RAs received training for the risk assessment measures they coded from certified trainers. RAs were either assigned the HCR-20 and the PCL-SV, or they were assigned the START measure to avoid any potential bias in comparisons between the HCR-20

and START. In other words, if someone coded the START they did not code the HCR-20 or the PCL-SV for any given participant. As previously noted, the SAPROF was not included in the original protocol, thus the primary author and two other RAs retrospectively coded the SAPROF for all of the participants. However, as the primary author and two RAs collected data on this project and have conducted several of the baseline data collections we ensured that the RA that coded the SAPROF did not code any of the other risk assessment measures (i.e. HCR-20, START or PCL:SV) at baseline to minimize any potential bias in coding. As the SAPROF is intended to be used with the HCR-20 the previous HCR-20 total score and risk rating was provided to the RA that was coding the participant in order to be able to make a final integrated risk judgment.

2.4.5.   Follow-up data collection

To assess the predictive validity of these measures, negative outcomes were coded (i.e., violence to others, self-neglect, suicidality, etc.) prospectively from file and interview information at whichever community-based care facility patients were residing in at the time. Outcomes were coded at two follow-up time periods, once after six months and again after a year. Due to the nature of these facilities the negative outcomes could either reflect behaviours occurring in the inpatient setting (i.e. in their community-based care facility) or in the community while the patient was on pass in the community. RAs were kept blind from information pertaining to the outcomes even when coding the SAPROF for baseline retrospectively. RVH files do not have follow-up information on patients at their new facilities so the RAs did not have access to any data pertaining to outcomes when coding the files. Due to limited resources, availability of RAs, and the nature of the data collection methods of the larger project it was not always possible to ensure that the RA who completed the follow-up data collection was different to the RA coding the SAPROF. Specifically, data collection was structured in such a way that the same person does not always collect all of the follow-up data. For example one participant could have follow-up data collected by 4 different RAs. Therefore, for some participants all three of the RAs coding the SAPROF had also completed at least one

follow-up.[2] However, best efforts were made by the RAs that if they could recall outcomes from a participant's follow-up then another RA that could not recall outcomes would be assigned that participant to try to minimize potential bias.

2.5. Statistical Analyses

Statistical analysis was performed using SPSS 20.0 for Mac OS X (SPSS INC, Chicago, IL). Firstly, descriptive statistics were used (i.e., central tendency and frequency distribution) to characterize the group as a whole with regard to demographic and background details. Student's t-tests were conducted to analyze the continuous variables and Chi-square tests for categorical variables. For Chi-square analysis, the Pearson Chi square statistic was used when Cochran's rule has been satisfied (i.e., each cell contains five or more counts); Fisher's Exact Test was used when Cochran's rule has not been satisfied. When possible, variables were collapsed into fewer categories to try to avoid having cells with fewer than five counts. Specifically, T-tests and Chi-square tests were used to establish that the male and female patients did not differ significantly with regard to background and demographic variables; additionally, these tests were performed to check that the two groups do not differ in relation to the duration of the index hospitalization. Furthermore, descriptive statistics were used to present prevalence statistics on the negative outcomes and Chi square statistics were used to analyze any potential gender differences on the negative outcomes.

Psychometric analysis was conducted using means for total scores, scale scores and item scores for all of the risk measures used in this study (i.e. START, SAPROF, and HCR-20). . Inter-rater reliability for all of the risk measures used in this study (i.e. START, SAPROF, and HCR-20) was assessed with Intraclass Correlation Coefficients (ICC), using the one-way random effect model and absolute agreement type as each case was rated by a different set of raters, randomly selected from the pool of judges (McGraw & Wong, 1996; Shrout & Fleiss, 1979). According to Fleiss (1986), the

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[2] Of the total sample of 102, only 13 cases were coded by an RA that had previously completed a follow-up on a participant. Selected analyses were repeated with the 13 participants removed from the data set, results can be found under Appendix A.

critical values for single measure ICCs are as follows: ICC ≥ 0.75, excellent; 0.60-0.74, good; 0.40- 0.59, moderate; and ≤ 0.40, poor.

The SOS data obtained from patient interviews and file reviews were collapsed to create several outcome variables. Firstly, an outcome variable was created in line with the HCR-20 definition of violence (i.e. "actual, attempted, or threatened harm to a person or person" [Webster et al., 1997, p. 24]), which included actual or attempted violence towards a person, threatened violence, and sexual aggression (using: SOS verbal aggression levels 3 and 4; SOS physical aggression against others levels 2, 3, and 4; SOS sexual aggression levels 2, 3, and 4). Additionally, three separate variables were created to look at all verbal aggression, all physical aggression, and all sexual aggression collapsed across severity levels. Additional variables were created to examine severe physical violence, serious verbal aggression and serious sexual aggression. Serious verbal aggression included "impulsively threatens violence towards others," and "makes clear threats of violence towards others repeatedly or deliberately." Serious physical aggression towards others included "strikes, pushes, scratches, pulls hair (without injury)," kicks, punches, bites (mild-moderate physical injury)," and "attacks others, uses weapons (severe physical injury)." Lastly, serious sexual aggression this included "makes sexually threatening statements, exposes genitals to others, masturbates in public or is voyeuristic", "sexually touches or fondles others non-consensually", and "commits coercive or violent sexual assaults (with/without penetration; oral, genital, or anal), uses weapons". Lastly, an aggregate outcome variable was created for the most serious incident overall (including physical or sexual aggression) reported (either by patient or file) and separately for the most serious violent and sexual incidents (see appendix E). These different hierarchical levels of outcomes where developed in order to evaluate the ability of these measures to predict different degrees of severity of aggression. Specifically, these measures are intended to evaluate the risk of more severe forms of aggression, thus severe outcome variables where created. On the other hand less severe forms of aggression are more frequently occurring in psychiatric settings, thus it is important to investigate the utility of these measures to identify those lower severity but frequent outcomes.

The risk measures where coded once at baseline. Follow up data was collected at six months and twelve months. Analyses were conducted using two time points: 1. the six month out comes and 2. aggregated data from both time periods (i.e., any outcomes occurring within 12 months.

Receiver Operating Characteristic (ROC) analysis was conducted to test the ability of the risk assessment measures to predict the measured outcomes on the SOS. For the ROC analysis a positive finding on the outcomes (i.e., the presence of an outcome) was used as the outcome target for each of the measures: HCR-20, HCR-20 – SAPROF (created by subtracted the SAPROF total score from HCR-20 total score), START vulnerability scale, and the summary risk judgments. A negative finding of the outcome (i.e. absence of violence) was used as the outcome target for the SAPROF, SPAROF protective judgment, and START strength scale. The main advantage of ROC analysis is that it is reasonably insensitive to low base rates, and is often used in recidivism research to test predictive validity of risk assessment tools (Rice & Harris, 1995; de Vogel & de Ruiter, 2005). The ROC plots the fraction of true positives (sensitivity) against the fraction of false positives (1 - specificity) for every possible cut off score of an instrument. The probability that a randomly selected member from a specific group would score higher on the instrument being tested than a randomly selected member of the opposing group is represented by the Area Under the Curve (AUC) value. Generally, AUC values above 0.70 are considered good to excellent (Douglas, Shaffer, Blanchard, Guy, Reeves, & Weir, 2014; Rice & Harris, 2005; Swets, 1988). Rice and Harris (2005) calculated values of AUCs that compared to Cohen's *d* effect sizes. They reported that AUC values of < .55 indicated poor predictive validity, 0.55 - 0.63 indicated fair predictive validity, 0.64 - 0.71 indicated good predictive validity, and AUC values of 0.71 - 1.00 indicated excellent predictive validity. ROC analyses will be repeated separately for each gender to evaluate if each risk measure is equally predictive for both genders.

In order to assess incremental validity of protective factors over risk factors and SPJ over actuarial risk assessments we used hierarchical logistic regression. We first checked that there was no multicollinearity issues present between any of the relevant predictor variables, which there were none. For all these analyses the strength/protective

scores were reverse- coded such that lower strength scores represent higher strengths. Lastly, in order to control for the effect of gender on the predictive validity of the risk measures gender was entered into the first step of each logistic regression.

Chapter 3.   Results

3.1. Sample Characteristics

3.1.1.   Overall Characteristics

The final sample contained 102 civil psychiatric patients residing at a large tertiary psychiatric hospital in western Canada. The sample was 60.8% male and ranged from 20 to 73 years of age (M=46.66, SD=12.4). The majority of the patients had a primary diagnosis of a schizophrenia spectrum disorder (89.0%), followed by a mood disorder (7.0%), dementia (3.0%) and substance use disorder (1.0%). Further, 34.3% were also diagnosed with an Axis II disorder or traits, with the most common diagnosis being borderline intellectual functioning (25.7%) and antisocial personality disorder and/or traits (25.7%) followed by borderline personality disorder and/or traits (8.6%). Most patients were involuntarily detained (99.0%) at the time of admission and at the time of data collection (95.1%). The average number of weeks spent in the hospital was 286.91, with a range of 4 to 1509 (SD = 329.31). The most prevalent ethnic background was Caucasian (76.5%), followed by Asian (8.8%), First Nations (7.8%), Other (2.9%), Afro-Canadian (2.0%), Indo-Canadian (1.0%), and Hispanic (1.0%). Around half of the sample had less than grade 12 education (52.0%), almost a third had completed grade 12 high school (29.4%), and close to one fifth had more than a high school education (17.6%). At the time of admission, the majority of the participants were single (71.6%), separated or divorced (18.7%), with a smaller proportion either married (4.9%), common law (2.0%), widowed (2.0%) or other (1.0%). In order to be hospitalized at RVH a referral needs to be made from other institutions (i.e. psychiatric institution or hospitals) therefore all of the patients were residing in a supervised institution prior to hospitalization at RVH. Before being referred to RVH, many of the participants resided in a private home or apartment (28.7%). The remaining participants were admitted directly from an inpatient psychiatric hospital (19.1%), boarding house/hotel (19.1%),

homeless/homeless shelter (14.9%), other (6.4%), supervised living arrangement (5.3%), residential treatment facility (3.2%), nursing/rest home (2.1) and jail/prison/remand centre (1.1%). Only three participants received income from employment (3.6%), with the majority of the remaining sample receiving their income from disability pension (80.7%), welfare (12.0%), family support (7.2%), savings/inheritance (3.6%), or workers compensation benefits (1.2%).

3.1.2. Gender Differences in Characteristics

The male and female participants were compared to ensure that the two groups did not differ significantly on demographic and other background factors. As can be seen in Table 1, the two groups did not differ significantly on most of the variables coded for demographic background, social economic status, education, ethnicity, psychiatric history and forensic history. The male and female patients did differ in terms of whether they had a history of being charged for crime as an adult, with the males having significantly higher rates than females (61.40% vs. 37.50%; χ^2 (1) = 5.38, $p \leq 0.05$).

It should be noted, however, that there were several trend significance findings. The males had a higher number of weeks in the hospital than the females (332.64 vs. 212.29; t (98) = 1.79, $p \leq 0.1$), the females were more likely to be involuntary at admission than the males (100.0% vs. 91.90; χ^2 (1) = 3.39, $p \leq 0.1$), the males were more likely to have income than the females (96.4% vs. 86.5; χ^2 (1) = 3.07, $p \leq 0.1$), males were more likely to have a substance abuse history than the females (75.4% vs. 60.0; χ^2 (1) = 2.70, $p \leq 0.1$), and the males were more likely to have a history of a conviction as an adult than the females (44.8% vs. 28.2; χ^2 (1) = 2.73, $p \leq 0.1$).

Table 1.   **Background Demographic Characteristics**

Outcome	Male % (n)	Female % (n)	χ^2 (df)/t (df)	p-value
Age (Mean, SD)	46.59 (12.68)	46.59 (12.13)	-0.07 (99)	0.94
Length of Stay in weeks (Mean, SD)	332.64 (384.61)	212.29 (192.51)	1.79 (98)	0.08 [†]
Legal Status (Involuntary)	91.90 (57)	100.00 (40)	3.39 (1)	0.07 [†]
Ethnicity			2.10 (1)	0.15
Caucasian	74.20 (46)	80.00 (32)		
First Nations	8.10 (5)	7.50 (3)		
Asian	6.50 (4)	12.50 (5)		
Other	11.20 (7)	0.0 (0)		
Language			0.70 (1)	0.40
English	87.10 (54)	80.00 (32)		
Cantonese/Mandarin	3.20 (2)	12.50 (5)		
Other	9.70 (6)	7.50 (3)		
Education			2.70 (2)	0.26
High School Incomplete	59.00 (36)	42.50 (17)		
High School Complete	26.20 (16)	35.00 (14)		
Greater than High School	14.70 (9)	22.50 (9)		
Do They Have Monthly Income (yes)	96.40 (53)	86.50 (32)	3.07 (1)	0.08 [†]
Unemployed	95.00 (57)	97.50 (39)	0.39 (1)	0.52
Type of Residence			0.21 (1)	0.64
Private Home/Apt	19.30 (11)	43.20 (16)		
Inpatient Psychiatric Hospital	28.10 (16)	5.40 (2)		
Boarding/Rooming Hotel	21.10 (12)	16.20 (6)		
Supervised Living Arrangement	5.30 (3)	5.40 (2)		
Residential Treatment facility	3.50 (2)	2.70 (1)		
Homeless/Homeless Shelter	15.80 (9)	13.50 (5)		
Nursing/Rest Home	1.80 (1)	2.70 (1)		
Marital Status			0.15 (1)	.698
Single	80.60 (50)	57.50 (23)		
Common Law	1.60 (1)	2.50 (1)		
Married	1.60 (1)	10.00 (4)		
Separated/ Divorced	12.90 (8)	27.50 (11)		
Widowed	1.60 (1)	2.50 (1)		
Other	1.60 (1)	0.00 (0)		
Primary Axis I Diagnosis at Admission				
Schizophrenia Spectrum	88.50 (54)	89.70 (35)		
Substance Use Disorder	0.00 (0)	2.60 (1)		
Mood Disorder	8.20 (5)	5.10 (2)		
Dementia	3.30 (2)	2.60 (1)		

Primary Axis II Diagnosis at Admission	35.50 (22)	32.50 (13)	0.09 (1)	0.76
Antisocial PD	9.10 (2)	15.40 (2)		
Antisocial Traits	13.60 (3)	15.40 (2)		
Borderline PD	0.00 (0)	15.40 (2)		
Borderline Traits	0.00 (0)	7.70 (1)		
Borderline IQ	22.70 (5)	30.80 (4)		
Schizotypal	9.10 (2)	0.00 (0)		
Other	45.50 (10)	15.40 (2)		
Previous RVH Hospitalization	71.20 (42)	72.50 (29)	0.02 (1)	0.89
Previous FPH Hospitalization	37.70 (23)	23.10 (9)	2.33 (1)	0.13
Previous Other Hospitalization	100.00 (59)	97.50 (39)	1.49 (1)	0.22
Substance Abuse History	75.40 (46)	60.00 (24)	2.70 (1)	0.10[†]
Charged as an Adult	61.40 (35)	37.50 (15)	5.38 (1)	0.02[*]
Convicted as an Adult	44.80 (26)	28.20 (11)	2.73 (1)	0.10[†]
Violent Convictions as Adult	29.60 (16)	15.80 (6)	2.35 (1)	0.13

Note. *** $p ≤ 0.001$ level (2-tailed). ** $p ≤ 0.01$ level (2-tailed). * $p ≤ 0.05$ level (2-tailed). [†] $p ≤ 0.1$ level (2-tailed).

3.2. Base Rates of Outcome Variables

3.2.1.   Base Rates for the Whole Sample

Figure 2 depicts the base rates of the outcome variables collapsed over time frames. At follow-up one we found base rates of 52% for violence, 66.7% for verbal aggression and 24.5% for sexual aggression. When Follow-up one base rates were combined with base rates at follow-up two we found rates of 64.4% for violence, 76.2% for verbal aggression and 29% for sexual aggression. These rates include varying degrees of severity, and we therefore also looked at base rates for severe violence, serious verbal aggression and serious sexual aggression.

Figure 2.   Outcome Base Rates
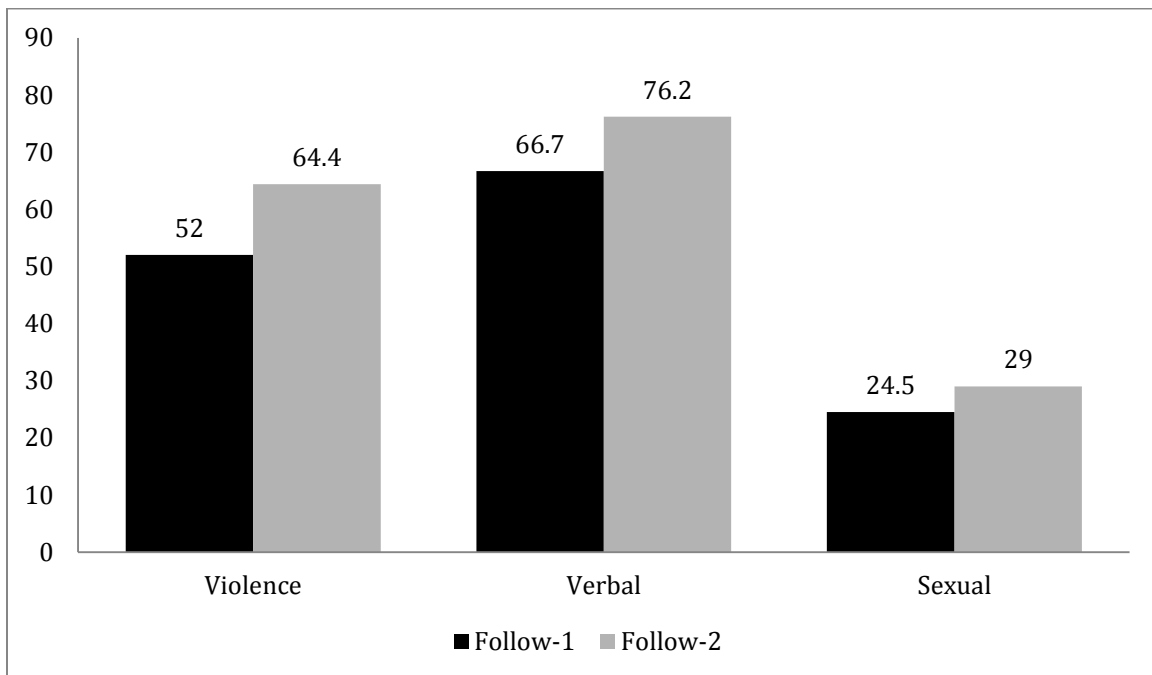
Note. Base rates are cumulative over time frames

Figure 3 depicts base rates of the serious outcome variables collapsed over time frames. At follow-up one we found base rates of 28.4% for severe violence, 25.5% for serious verbal aggression and 8.8% for serious sexual aggression. When Follow-up one base rates for serious outcomes were combined with base rates for serious outcomes at follow-up two we found rates of 45% for serious physical aggression, 37.6% for serious verbal aggression and 14% for serious sexual aggression.

Figure 3.   **Serious Outcomes Base Rates**
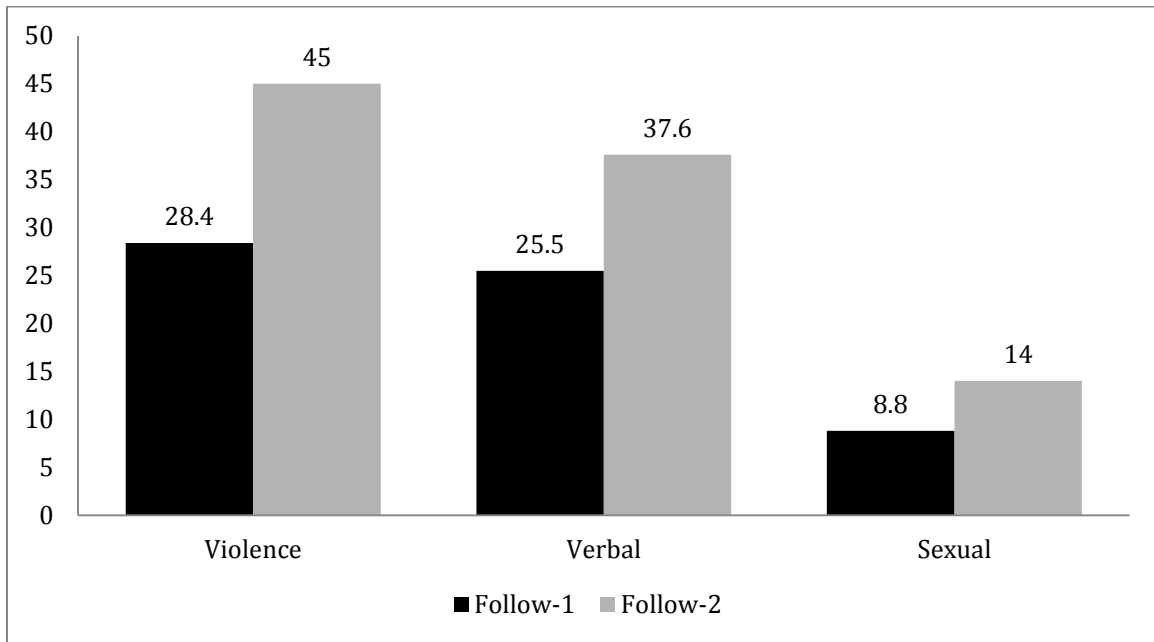
Note. Base rates are cumulative over time frames

Figure 4 depicts the base rates for the most serious incident reported (overall and separately for violent and sexual aggression) either by file or by the patient collapsed over time frames. At follow-up one we found base rates of 42.2% for overall most serious incident reported, 33.3% for most serious incident of violent aggression reported and 10.8% for most serious incident of sexual aggression reported. When Follow-up one base rates were combined with base rates at follow-up two we found rates of 59.6% for overall most serious incident reported, 53.5% for most serious incident of violent aggression reported and 17.8% for most serious incident of sexual aggression reported.

Figure 4.   Most Serious Incident Base Rates
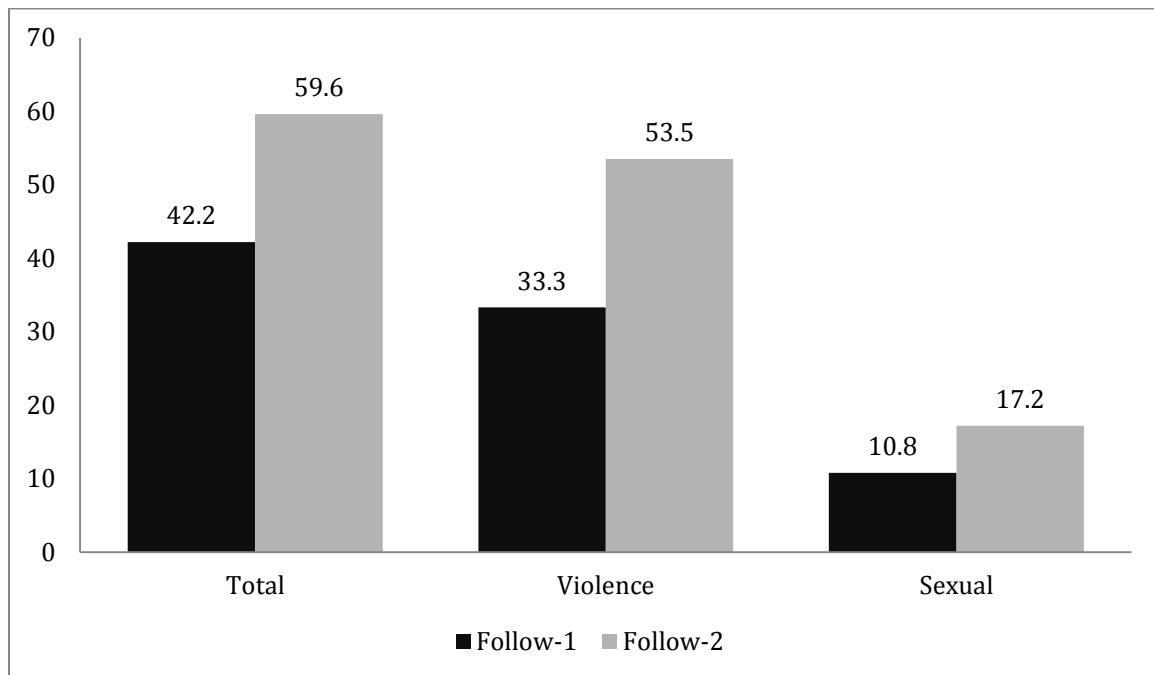
Note. Base rates are cumulative over time frames

3.2.2.   Base Rates Separated by Gender

Table 2 outlines the base rates by gender for all the outcome variables for follow-up one. The males did not differ significantly from the females on almost any of the outcome variables, with the exception of the most serious sexual aggression incident reported. The males had significantly higher rates of most serious sexual aggression incident reported (17.7% vs. 0%, χ^2 (1) = 7.88, $p \le 0.01$).

Table 2. **Differences In Base Rates By Gender Follow-Up 1**

Outcome	Male % (n)	Female % (n)	Chi-Square (df)	p-value
Violence	58.1 (36)	42.5 (17)	2.36 (1)	0.13
Physical Aggression	38.7 (24)	37.5 (14)	0.02 (1)	0.90
Verbal Aggression	64.5 (40)	70.0 (28)	0.33 (1)	0.57
Sexual Aggression	29.0 (18)	17.5 (7)	1.75 (1)	0.19
Serious physical aggression	25.8 (16)	32.5 (13)	0.54 (1)	0.46
Serious verbal aggression	29.0 (18)	20.0 (8)	1.04 (1)	0.31
Serious sexual aggression	8.1 (5)	10.0 (4)	0.11 (1)	0.73
Most Serious Incident Reported[a]	46.8 (29)	35.0 (14)	1.38 (1)	0.24
Most Serious Violent Only	32.3 (20)	35.0 (14)	0.08 (1)	0.77
Most Serious Sexual Only	17.7 (11)	0.0 (0)	7.88 (1)	0.01**

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a.] Including Physical and Sexual aggression

Table 3 outlines the base rates separated by gender for all the outcome variables for follow-up two. Similar to follow-up one, the males did not significantly differ from the females on almost any of the outcome variables with the exception of the most serious sexual aggression incident reported. The males had significantly higher rates of most serious sexual aggression incident reported (23.3% vs. 7.7%, χ^2 (1) = 4.01, $p \leq 0.05$).

Table 3. **Differences In Base Rates By Gender Follow-Up 2**

Outcome	Male % (n)	Female % (n)	Chi-Square (df)	p-value
Violence	68.9 (42)	57.5 (23)	1.36 (1)	0.24
Physical Aggression	56.5 (35)	50.0 (20)	0.41 (1)	0.52
Verbal Aggression	75.4 (46)	77.5 (31)	0.06 (1)	0.81
Sexual Aggression	33.3 (20)	22.5 (9)	1.37 (1)	0.24
Serious physical aggression	45.0 (27)	45.0 (18)	0.00 (1)	1.00
Serious verbal aggression	44.3 (27)	27.5 (11)	2.89 (1)	0.09 [†]
Serious sexual aggression	15.0 (9)	12.5 (5)	0.13 (1)	0.72
Most Serious Incident Reported[a]	63.3 (38)	53.8 (21)	0.88 (1)	0.35
Most Serious Violent Only	55.0 (33)	51.3 (20)	0.13 (1)	0.72
Most Serious Sexual Only	23.3 (14)	7.7 (3)	4.01 (1)	0.04*

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. Including Physical and Sexual aggression

3.3. Hypothesis One: Measures will show good psychometric properties in this population

3.3.1. Short-Term Assessment of Risk and Treatability (START)

Inter-rater reliability. As can be seen from Table 4, Inter-rater reliability analyses showed single measure ICCs of .44 ($p \leq 0.05$) for total Strength Scale scores, .56 ($p \leq .05$) for total Vulnerability Scale scores, and .24 ($p = .20$) for Violence Risk Judgments (VRJ). With regard to individual items on the Strength Scale, the Inter-rater reliabilities ranged from poor to excellent, with ICCs ranging from -.20 (Conduct) to 1.00 (Medication Adherence), with only seven items were $p \leq .05$ (See Table 4 for details). Looking at the individual items on the Vulnerability Scale, the Inter-rater reliabilities again ranged from poor to excellent, with ICCs ranging from -.34 (Coping) to .94 (Self Care), and with nine items were $p \leq .05$ (See Table 7 for details). Upon closer inspection of the ratings, it became clear that the Strength Scale had two pronounced outliers with rating differences of 10 points or more. Both these cases were coded using file information only and were both female participants, it is possible that there was vague and insufficient information in these files resulting in differing scores. When these outliers were removed, the ICC was good for both the Strength Scale ($N = 10$; ICC = .71) and Vulnerability Scale ($N = 10$; ICC = .65) total scores (See Table 5 and Table 8 for details).

Descriptive Statistics. Table 6 shows the mean total and item ratings for the Strengths Scale of the START. The Strengths Scale had a mean of 13.21 ($SD = 6.19$) and a range of 1 to 28 (possible range = 0 to 40). Means for the Strength item ratings ranged from 0.38 ($SD = 0.48$) to 1.22 ($SD = 0.80$) and all items ranged from 0-2 (possible range = 0 to 2). Table 9 shows the mean total and item ratings for the Vulnerabilities Scale. The Vulnerability scale had a mean of 19.25 ($SD = 6.31$) and a range of 3 to 34 (possible range = 0 to 40). Means for the Vulnerability item ratings ranged from 0.40 ($SD = 0.48$) to 1.44 ($SD = 0.64$) and all items ranged from 0-2 (possible range = 0 to 2). Pearson *r* correlations were conducted to see to what extent the strength scale was related to the vulnerability scale. Table 14 shows the Vulnerability total score correlated negatively with the Strength total score ($r = -.43$, $p \leq 0.001$).

Table 4. START Strength Inter-rater Reliability (N=12)

Scale	ICC$_1$ One-way Random	P-Value	ICC$_1$ Mixed Absolute	P-Value
Total Score	0.44	0.05	0.44	0.08
Final Violence SPJ	0.24	0.21	0.26	0.19
Items				
1. Social Skills	0.27	0.17	0.25	0.22
2. Relationships	0.29	0.16	0.29	0.17
3. Occupation	0.75	0.00	0.75	0.00
4. Recreation	0.34	0.12	0.34	0.12
5. Self-Care	0.60	0.01	0.59	0.02
6. Mental State	-0.13	0.67	-0.19	0.71
7. Emotional State	0.28	0.17	0.25	0.22
8. Substance Use	0.53	0.03	0.52	0.04
9. Impulse Control	0.02	0.48	0.00	0.50
10. External Triggers	0.50	0.04	0.49	0.05
11. Social Support	0.29	0.16	0.27	0.21
12. Material Resources	0.63	0.01	0.65	0.01
13. Attitudes	0.28	0.17	0.25	0.22
14. Med. Adherence	1.00	n/a	1.00	n/a
15. Rule Adherence	0.59	0.02	0.59	0.01
16. Conduct	-0.20	0.75	-0.06	0.59
17. Insight	0.49	0.04	0.49	0.05
18. Plans	0.26	0.19	0.24	0.23
19. Coping	0.23	0.22	0.20	0.27
20. Treatability	0.13	0.34	0.21	0.20

Table 5. START Strength Inter-rater Reliability without 2 outliers (N=10)

Scale	ICC$_1$ One-way Random	P-Value	ICC$_1$ Mixed Absolute	P-Value
Total Score	0.71	0.01	0.71	0.01
Final Violence SPJ	0.27	0.21	0.29	0.17
Items				
1. Social Skills	0.36	0.13	0.33	0.18
2. Relationships	0.39	0.11	0.37	0.14
3. Occupation	0.73	0.00	0.74	0.00
4. Recreation	0.29	0.19	0.31	0.16
5. Self-Care	0.44	0.08	.043	0.11
6. Mental State	-0.13	0.64	-0.17	0.68
7. Emotional State	0.33	0.15	0.31	0.19
8. Substance Use	0.60	0.02	0.59	0.04
9. Impulse Control	0.04	0.45	0.00	0.50
10. External Triggers	0.62	0.02	0.61	0.03
11. Social Support	0.47	0.06	0.46	0.09
12. Material Resources	0.63	0.02	0.64	0.01
13. Attitudes	0.46	0.07	0.44	0.10
14. Med. Adherence	1.00	n/a	1.00	n/a
15. Rule Adherence	0.56	0.03	0.57	0.03
16. Conduct	-0.20	0.72	-0.08	0.62
17. Insight	0.40	0.10	0.40	0.11
18. Plans	0.65	0.01	0.64	0.02
19. Coping	0.16	0.31	0.12	0.37
20. Treatability	0.39	0.11	0.43	0.06

Table 6.   START Strength Scale Descriptive Statistics

Scale	Mean	Std. Deviation	Range
Strength Scale Total Score	13.21	6.19	1- 28
Items			
1. Social Skills	0.89	0.64	0 - 2
2. Relationships	0.69	0.63	0 - 2
3. Occupation	0.45	0.61	0 - 2
4. Recreation	0.82	0.65	0 - 2
5. Self-Care	0.82	0.65	0 - 2
6. Mental State	0.44	0.61	0 - 2
7. Emotional State	0.74	0.66	0 - 2
8. Substance Use	1.22	0.80	0 - 2
9. Impulse Control	0.41	0.59	0 - 2
10. External Triggers	0.48	0.54	0 - 2
11. Social Support	0.81	0.66	0 - 2
12. Material Resources	0.66	0.65	0 - 2
13. Attitudes	0.76	0.65	0 - 2
14. Med. Adherence	0.63	0.61	0 - 2
15. Rule Adherence	0.84	0.59	0 - 2
16. Conduct	0.79	0.60	0 - 2
17. Insight	0.41	0.57	0 - 2
18. Plans	0.38	0.58	0 - 2
19. Coping	0.38	0.53	0 - 2
20. Treatability	0.57	0.57	0 - 2

Table 7.   **START Vulnerability Inter-rater Reliability (N=12)**

Scale	ICC$_1$ One-way Random	P-Value	ICC$_1$ Mixed Absolute	P-Value
Total Score	0.55	0.02	0.56	0.02
Items				
1. Social Skills	0.49	0.04	0.48	0.06
2. Relationships	0.58	0.02	0.57	0.02
3. Occupation	0.60	0.01	0.59	0.02
4. Recreation	0.26	0.19	0.27	0.18
5. Self-Care	0.94	0.00	0.94	0.00
6. Mental State	0.53	0.03	0.52	0.04
7. Emotional State	0.22	0.22	0.27	0.16
8. Substance Use	0.77	0.00	0.77	0.00
9. Impulse Control	0.16	0.29	0.17	0.28
10. External Triggers	0.16	0.29	0.32	0.04
11. Social Support	0.77	0.00	0.77	0.00
12. Material Resources	0.39	0.08	0.39	0.10
13. Attitudes	0.04	0.44	0.00	0.50
14. Med. Adherence	0.50	0.04	0.52	0.02
15. Rule Adherence	0.42	0.07	0.41	0.10
16. Conduct	-0.25	0.80	-0.14	0.71
17. Insight	0.14	0.32	0.11	0.37
18. Plans	0.69	0.00	0.67	0.01
19. Coping	-0.34	0.88	-0.25	0.83
20. Treatability	0.23	0.22	0.20	0.27

Table 8. **START Vulnerability Inter-rater Reliability without the 2 outliers (N=10)**

Scale	ICC$_1$ One-way Random	P-Value	ICC$_1$ Mixed Absolute	P-Value
Total Score	0.65	0.01	0.65	0.02
Items				
1. Social Skills	0.49	0.06	0.47	0.09
2. Relationships	0.58	0.03	0.57	0.04
3. Occupation	0.64	0.01	0.63	0.02
4. Recreation	0.27	0.20	0.28	0.20
5. Self-Care	1.00	n/a	1.00	n/a
6. Mental State	0.22	0.25	0.18	0.31
7. Emotional State	0.28	0.19	0.36	0.08
8. Substance Use	0.75	0.00	0.75	0.01
9. Impulse Control	0.15	0.32	0.16	0.32
10. External Triggers	0.04	0.45	0.21	0.17
11. Social Support	0.73	0.00	0.73	0.01
12. Material Resources	0.40	0.10	0.38	0.14
13. Attitudes	0.04	0.45	0.00	0.50
14. Med. Adherence	0.43	0.08	0.46	0.05
15. Rule Adherence	0.52	0.04	0.51	0.06
16. Conduct	-0.29	0.81	-0.20	0.75
17. Insight	-0.13	0.64	-0.20	0.70
18. Plans	0.65	0.01	0.64	0.02
19. Coping	-0.34	0.85	-0.29	0.83
20. Treatability	0.05	0.43	0.00	0.50

Table 9.   START Vulnerabilities Scale Descriptive Statistics

Scale	Mean	Std. Deviation	Range
Vulnerabilities Scale Total Score	19.25	6.31	3 - 34
Items			
1. Social Skills	1.09	0.66	0 - 2
2. Relationships	0.95	0.64	0 - 2
3. Occupation	1.21	0.76	0 - 2
4. Recreation	0.87	0.64	0 - 2
5. Self-Care	1.05	0.67	0 - 2
6. Mental State	1.44	0.64	0 - 2
7. Emotional State	1.08	0.62	0 - 2
8. Substance Use	0.40	0.65	0 - 2
9. Impulse Control	1.02	0.72	0 - 2
10. External Triggers	0.68	0.69	0 - 2
11. Social Support	1.09	0.71	0 - 2
12. Material Resources	0.81	0.67	0 - 2
13. Attitudes	0.81	0.69	0 - 2
14. Med. Adherence	0.73	0.73	0 - 2
15. Rule Adherence	0.77	0.63	0 - 2
16. Conduct	0.74	0.69	0 - 2
17. Insight	1.37	0.74	0 - 2
18. Plans	1.12	0.69	0 - 2
19. Coping	1.13	0.69	0 - 2
20. Treatability	0.92	0.63	0 - 2

3.3.2.   The Structured Assessment of Protective Factors for Violence Risk (SAPROF)

Inter-rater reliability. As can be seen from Table 10, Inter-rater reliability analyses showed single measure ICCs of .75 ($p \leq .001$) for total SAPROF scores, .64 ($p \leq .01$) for Final Protection Judgments and .58 ($p \leq. 01$) for Final Protection Judgments 5 Point Scale. With regard to the Integrated Final Risk Judgments (IFRJ), we found ICCs of .76 ($p \leq .001$) and .84 ($p \leq .001$) for the IFRJ 5-Point Scale. Inter-rater reliability analysis for the Scales showed .74 ($p \leq .001$) for the Internal Scale, .76 ($p \leq .001$) for the

Motivational Scale, and .48 ($p \le .05$) for the External Scale. With regard to individual items, the Inter-rater reliabilities ranged from poor to excellent, ICCs ranging from -.19 (Life Goals) to .87 (Empathy), and all but three items were $p \le .05$ (See Table 10 for details). Notably, four of the items had zero variability and ICCs could not be calculated. These items were all from the External Scale and may account for the lower ICCs on this scale.

Table 10.   SAPROF Inter-rater Reliability (N = 15)

Scale	ICC$_1$ One-way Random	P-Value	ICC$_1$ Mixed Absolute	P-Value
Total Score	0.75	0.00	0.75	0.00
Final Protective SPJ	0.64	0.00	0.63	0.01
Final Protective 5-Point SPJ	0.58	0.01	0.57	0.01
Integrated SPJ	0.76	0.00	0.76	0.00
Integrated 5-Point SPJ	0.84	0.00	0.84	0.00
Internal Scale Total	0.74	0.00	0.74	0.00
Motivational Scale Total	0.76	0.00	0.75	0.00
External Scale Total	0.48	0.03	0.47	0.04
Items:				
1. Intelligence	0.80	0.00	0.80	0.01
2. Secure Attachment In Childhood	0.81	0.00	0.81	0.00
3. Empathy	0.87	0.00	0.90	0.00
4. Coping	0.29	0.13	0.33	0.07
5. Self-Control	0.10	0.35	0.07	0.40
6. Work	0.74	0.00	0.74	0.00
7. Leisure Activities	0.36	0.08	0.35	0.10
8. Financial Management	0.49	0.02	0.49	0.03
9. Motivation For Treatment	0.64	0.00	0.63	0.01
10. Attitudes Towards Authority	0.48	0.03	0.48	0.03
11. Life Goals	-0.19	0.76	-0.19	0.76
12. Medication	0.80	0.00	0.80	0.00
13. Social Network	0.48	0.03	0.47	0.04
14. Intimate Relationship	0 Variance	n/a	0 Variance	n/a
15. Professional Care	0 Variance	n/a	0 Variance	n/a
16. Living Circumstances	0 Variance	n/a	0 Variance	n/a
17. External Control	0 Variance	n/a	0 Variance	n/a

Descriptive Statistics. Table 11 shows the mean total and item ratings for the SAPROF. The total score had a mean of 15.56 (*SD* = 4.60) and a range of 6 to 27 (possible range = 0 to 34). The mean for the Internal Scale was 3.59 (*SD* = 2.22) with a range of 0 to 10 (possible range = 0 to 10). The mean for the Motivational Scale was 4.66 (*SD* = 2.82) with a range of 0 to 11 (possible range = 0 to 14). The mean for the External Scale was 7.23 (*SD* = 1.08) with a range of 6 to 10 (possible range = 0 to 10). Individual item ratings ranged from 0.25 (*SD* = 0.62) to 1.99 (*SD* = 0.09) and all but two items ranged from 0-2 (possible range = 0 to 2).

Table 11.   SAPROF Descriptive Statistics

Scale	Mean	Std. Deviation	Range
Total Score	15.56	4.60	6-27
Internal Scale	3.59	2.22	0-10
Motivational Scale	4.66	2.82	0-11
External Scale	7.23	1.08	6-10
Items:			
1. Intelligence	.37	.517	0-2
2. Secure Attachment In Childhood	1.23	.855	0-2
3. Empathy	.95	.786	0-2
4. Coping	.44	.623	0-2
5. Self-Control	.53	.656	0-2
6. Work	.36	.657	0-2
7. Leisure Activities	.87	.767	0-2
8. Financial Management	.61	.761	0-2
9. Motivation For Treatment	.72	.750	0-2
10. Attitudes Towards Authority	.96	.757	0-2
11. Life Goals	.30	.559	0-2
12. Medication	.84	.797	0-2
13. Social Network	1.01	.802	0-2
14. Intimate Relationship	.25	.620	0-2
15. Professional Care	2.00	.000	2-2
16. Living Circumstances	1.99	.099	1-2
17. External Control	1.98	.198	0-2

3.3.3. The Historical, Clinical, Risk Management-20 Version 2

Inter-rater reliability. As can be seen from Table 12, inter-rater reliability analyses showed single measure ICCs of .80 ($p \leq 0.001$) for total scores, .68 ($p \leq .01$) for Historical total scores, .31 ($p = .15$) for Clinical total scores, .89 ($p \leq .001$) for Risk total scores, and .42 ($p \leq .05$) for VRJ. With regard to individual items, the Inter-rater reliabilities ranged from poor to excellent, ICCs ranging from -.05 (Substance Use Problems) to 0.92 (Noncompliance with Remediation Attempts), and 11 items were $p \leq .05$ (See Table 14 for details). It should be noted that one item (Major Mental Illness) had zero variance and therefore ICC could not be computed.

Descriptive Statistics. Table 13 shows the mean total and item ratings for the HCR-20. The total score had a mean of 23.64 ($SD = 5.59$) and a range of 9 to 35 (possible range = 0 to 40). The mean for the Historical Scale was 11.76 ($SD = 3.89$) with a range of 2 to 19 (possible range = 0 to 20). The mean for the Clinical Scale was 6.25 ($SD = 1.94$) with a range of 0 to 10 (possible range = 0 to 10). The mean for the Risk Scale was 5.61 ($SD = 1.83$) with a range of 2 to 10 (possible range = 0 to 10). Individual item ratings ranged from 0.32 ($SD = 0.53$) to 1.96 ($SD = 0.20$) and all but one item ranged from 0-2 (possible range = 0 to 2).

Table 12.   HCR-20 Inter-rater Reliability (N = 11)

Scale	ICC$_1$ One-way Random	P-Value	ICC$_1$ Mixed Absolute	P-Value
Total Score	0.80	0.00	0.80	0.00
History Total	0.68	0.01	0.68	0.01
Clinical Total	0.31	0.15	0.31	0.16
Risk Total	0.89	0.00	0.89	0.00
Risk SPJ	0.42	0.08	0.49	0.01
Items				
1. Previous Violence	0.68	0.01	0.68	0.01
2. Young Age At First Violent Incident	0.86	0.00	0.86	0.00
3. Relationship Instability	0.10	0.37	0.17	0.27
4. Employment Problems	0.41	0.08	0.39	0.12
5. Substance Use Problems	-0.05	0.56	-0.11	0.62
6. Major Mental Illness	0 Variance	n/a	0 Variance	n/a
7. Psychopathy	0.81	0.00	0.80	0.00
8. Early Maladjustment	0.78	0.00	0.78	0.00
9. Personality Disorder	0.75	0.00	0.75	0.00
10. Prior Supervision Failure	0.67	0.01	0.66	0.01
11. Lack Of Insight	0.43	0.07	0.41	0.11
12. Negative Attitudes	0.38	0.10	0.41	0.07
13. Active Symptoms Of Major Mental Illness	0.41	0.08	0.41	0.09
14. Impulsivity	0.33	0.14	0.33	0.15
15. Unresponsive To Treatment	0.87	0.00	0.87	0.00
16. Plans Lack Feasibility	0.77	0.00	0.77	0.00
17. Exposure To Destabilizers	0.86	0.00	0.86	0.00
18. Lack Of Personal Support	0.76	0.00	0.77	0.00
19. Noncompliance With Remediation Attempts	0.92	0.00	0.92	0.00
20. Stress	0.33	0.14	0.36	0.10

Table 13.   HCR-20 Descriptive Statistics

Scale	Mean	Std. Deviation	Range
Total Score	23.64	5.59	9 - 35
History Total	11.76	3.89	2 - 19
Clinical Total	6.25	1.94	0 - 10
Risk Total	5.61	1.83	2 - 10
Items			
1. Previous Violence	1.34	0.79	0 - 2
2. Young Age At First Violent Incident	0.89	0.73	0 - 2
3. Relationship Instability	1.66	0.59	0 - 2
4. Employment Problems	1.62	0.57	0 - 2
5. Substance Use Problems	1.13	0.89	0 - 2
6. Major Mental Illness	1.96	0.20	1 - 2
7. Psychopathy	0.32	0.53	0 - 2
8. Early Maladjustment	1.00	0.86	0 - 2
9. Personality Disorder	0.60	0.74	0 - 2
10. Prior Supervision Failure	1.35	0.71	0 - 2
11. Lack Of Insight	1.61	0.57	0 - 2
12. Negative Attitudes	0.55	0.62	0 - 2
13. Active Symptoms Of Major Mental Illness	1.74	0.52	0 - 2
14. Impulsivity	1.21	0.77	0 - 2
15. Unresponsive To Treatment	1.13	0.70	0 - 2
16. Plans Lack Feasibility	0.98	0.71	0 - 2
17. Exposure To Destabilizers	0.98	0.66	0 - 2
18. Lack Of Personal Support	1.20	0.79	0 - 2
19. Noncompliance With Remediation Attempts	1.11	0.69	0 - 2
20. Stress	1.35	0.59	0 - 2

3.3.4. Correlations between Risk Measures

Table 14 shows a Pearson *r* correlation matrix of all the risk measures and the PCL-SV. The SAPROF total score demonstrated a strong negative correlation with the total score on the HCR-20 ($r = -.41$, $p \leq 0.001$), the START Vulnerability Scale ($r = -.36$, $p \leq 0.001$), and the PCL-SV ($r = -.31$, $p \leq 0.01$). Conversely, the SAPROF total score did not significantly correlate with the START Strength Scale ($r = .14$, $p = ns$). The correlation between the total scores on the HCR-20 was positive with the START Vulnerability Scale ($r = .50$, $p \leq 0.001$), the PCL-SV total score ($r = .66$, $p \leq 0.001$), and negative with START Strength Scale ($r = -.26$, $p \leq 0.01$).

Table 14.   Risk Measure Correlations

	PCL	HCR-20	SAPROF	Strength scale	Vulnerabilities scale
PCL	___				
HCR-20	0.66***	___			
SAPROF	-0.31**	-0.41***	___		
Strength Scale	-0.24*	-0.26**	0.14	___	
Vulnerabilities Scale	0.37***	.50***	-0.36***	-0.43***	___

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). † $p \leq 0.1$ level (2-tailed)

These results provide support for this hypothesis, in that we found generally good psychometric properties for all of the risk measures, with the exception of the Inter-rater reliability results for the START.

3.4. Hypothesis Two: Protective Factors Will Evidence Predictive Validity Of Future Violence Comparable With Risk Factors

3.4.1.   Short-Term Assessment of Risk and Treatability

START Strength Scale Total Scores. Table 15 shows the ROC analysis for START Strength total scores for both follow-up time frames. At follow-up one START Strength total scores significantly predicted violence (AUC = 0.63, $p \leq 0.05$), any physical aggression towards others (AUC = 0.65, $p \leq 0.01$), the most serious incident

reported (AUC = 0.66, $p \leq 0.01$), and the most serious violent incident (AUC = 0.66, $p \leq$ 0.01). START Strength total scores also showed a trend towards significant prediction of verbal aggression (AUC = 0.61, $p \leq 0.10$), serious physical aggression against others (AUC = 0.62, $p \leq 0.10$), and serious verbal aggression (AUC = 0.62, $p \leq 0.10$).

Table 15.   Predictive Validity (AUC) of START Strength Scale

Outcome	6 months[a]	12 months[b]
Violence	0.63[*]	0.60[◊]
Physical Aggression	0.65[**]	0.60[†]
Verbal Aggression	0.61[†]	0.64[*]
Sexual Aggression	0.60	0.55
Serious physical aggression	0.62[†]	0.64[*]
Serious verbal aggression	0.62[†]	0.56
Serious sexual aggression	0.61	0.51
Most Serious Incident Reported[c]	0.66[**]	0.62[*]
Most Serious Violent Only	0.66[**]	0.64[*]
Most Serious Sexual Only	0.57	0.59

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] n = 102. [b] n = 100. [c] Including Physical and Sexual aggression

At follow-up two, START Strength total scores significantly predicted verbal aggression (AUC = 0.64, $p \leq 0.05$), serious physical aggression towards others (AUC = 0.64, $p \leq 0.05$), the most serious incident reported (AUC = 0.62, $p \leq 0.05$), and the most serious violent incident (AUC = 0.64, $p \leq 0.05$). START Strength total scores also showed a trend towards significant prediction of violence (AUC = 0.60, $p \leq 0.10$), and physical aggression against others (AUC = 0.60, $p \leq 0.10$).

START Vulnerability Scale Total Scores. Table 16 shows the ROC analysis for START Vulnerability Scale total scores for both follow-up time frames. At follow-up one, START Vulnerability total scores significantly predicted serious verbal aggression (AUC = 0.64, $p \leq 0.05$).

At follow-up two, START Vulnerability total scores significantly predicted most serious sexual incident reported (AUC = 0.69, $p \leq 0.05$), and serious verbal aggression

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(AUC = 0.62, $p \leq 0.05$). START Vulnerability Scale total scores also showed a trend towards significant prediction of any verbal aggression (AUC = 0.61, $p \leq 0.10$).

Table 16.   Predictive Validity (AUC) of START Vulnerability Scale

Outcome	6 months[a]	12 months[b]
Violence	0.54	0.54
Physical Aggression	0.50	0.52
Verbal Aggression	0.59	0.61 [†]
Sexual Aggression	0.60	0.59
Serious physical aggression	0.51	0.54
Serious verbal aggression	0.64[*]	0.62[*]
Serious sexual aggression	0.53	0.48
Most Serious Incident Reported[c]	0.55	0.56
Most Serious Violent Only	0.52	0.54
Most Serious Sexual Only	0.61	0.69[*]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

3.4.2.   The Structured Assessment of Protective Factors for Violence Risk

SAPROF Total Score. Table 17 shows the ROC analysis for SAPROF total scores for both follow-up time frames. At follow-up one, SAPROF total scores significantly predicted most serious sexual incident (AUC = 0.70, $p \leq 0.05$). SAPROF total scores also showed a trend towards significant prediction of serious verbal aggression (AUC = 0.62, $p \leq 0.10$), and serious sexual aggression against others (AUC = 0.68, $p \leq 0.10$).

At follow-up two SAPROF total scores significantly predicted verbal aggression (AUC = 0.63, $p \leq 0.05$), serious verbal aggression (AUC = 0.67, $p \leq 0.01$), and most serious sexual incident (AUC = 0.71, $p \leq 0.01$). SAPROF total scores also showed a trend towards significantly predicting the most serious incident reported (AUC = 0.60, $p \leq 0.10$).

Table 17.   Predictive Validity (AUC) of SAPROF Total Score

Outcome	6 months[a]	12 months[b]
Violence	0.59	0.59
Physical Aggression	0.52	0.54
Verbal Aggression	0.60	0.63[*]
Sexual Aggression	0.61	0.60
Serious physical aggression	0.50	0.55
Serious verbal aggression	0.62 [†]	0.67[**]
Serious sexual aggression	0.68 [†]	0.58
Most Serious Incident Reported[c]	0.58	0.60 [†]
Most Serious Violent Only	0.52	0.58
Most Serious Sexual Only	0.70[*]	0.71[**]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

SAPROF Protective Judgment. Table 18 shows the ROC analysis for SAPROF Protective Judgment for both follow-up time frames. At follow-up one SAPROF Protective Judgment did not significantly predict any outcomes. SAPROF Protective Judgment showed a trend towards significant prediction of serious sexual aggression (AUC = 0.67, $p \leq 0.10$).

At follow-up two SAPROF Protective Judgment significantly predicted serious verbal aggression (AUC = 0.64, $p \leq 0.05$). SAPROF Protective Judgment showed a trend towards significantly predicting the most serious sexual incident reported (AUC = 0.64, $p \leq 0.10$).

Table 18.   Predictive Validity (AUC) of SAPROF SPJ

Outcome	6 months[a]	12 months[b]
Violence	0.53	0.56
Physical Aggression	0.46	0.51
Verbal Aggression	0.55	0.60
Sexual Aggression	0.55	0.56
Serious physical aggression	0.43	0.49
Serious verbal aggression	0.58	0.64[*]
Serious sexual aggression	0.67 [†]	0.58
Most Serious Incident Reported[c]	0.49	0.59
Most Serious Violent Only	0.44	0.56
Most Serious Sexual Only	0.63	0.64 [†]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

SAPROF Protective Judgment 5-point. Table 19 shows the ROC analysis for SAPROF Protective Judgment 5-point version for both follow-up time frames. At follow-up one SAPROF Protective Judgment 5-point did not significantly predict any outcomes. SAPROF Protective Judgment 5-point did show a trend towards significant prediction of sexual aggression (AUC = 0.56, $p \leq 0.10$), serious verbal aggression (AUC = 0.62, $p \leq 0.10$), and serious sexual aggression (AUC = 0.69, $p \leq 0.10$).

At follow-up two SAPROF Protective Judgment 5-point significantly predicted serious verbal aggression (AUC = 0.64, $p \leq 0.05$). SAPROF Protective Judgment 5-point showed a trend towards significantly predicting any verbal aggression (AUC = 0.63, $p \leq 0.10$), and the most serious sexual incident reported (AUC = 0.64, $p \leq 0.10$).

Table 19.   Predictive Validity (AUC) of SAPROF SPJ 5 point

Outcome	6 months[a]	12 months[b]
Violence	0.56	0.55
Physical Aggression	0.49	0.49
Verbal Aggression	0.60	0.63 [†]
Sexual Aggression	0.56 [†]	0.56
Serious physical aggression	0.49	0.51
Serious verbal aggression	0.62 [†]	0.64[*]
Serious sexual aggression	0.69 [†]	0.57
Most Serious Incident Reported[c]	0.52	0.57
Most Serious Violent Only	0.49	0.54
Most Serious Sexual Only	0.63	0.63 [†]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

3.4.3.   The Historical, Clinical, Risk Management-20 Version 2

HCR-20 Total Score. Table 20 shows the ROC analysis for HCR-20 total scores for both follow-up time frames. At follow-up one HCR-20 total scores did not significantly predict any of the outcome variables. HCR-20 total scores did show a trend towards significant prediction of verbal aggression (AUC = 0.61, $p \leq 0.10$).

Table 20.   Predictive Validity (AUC) of HCR-20 Total

Outcome	6 months[a]	12 months[b]
Violence	0.55	0.60
Physical Aggression	0.51	0.56
Verbal Aggression	0.61 [†]	0.62 [†]
Sexual Aggression	0.57	0.59
Serious physical aggression	0.42	0.52
Serious verbal aggression	0.51	0.61 [†]
Serious sexual aggression	0.48	0.47
Most Serious Incident Reported[c]	0.56	0.58
Most Serious Violent Only	0.55	0.57
Most Serious Sexual Only	0.56	0.63 [†]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

At follow-up two HCR-20 total scores did not significantly predict any of the outcome variables. HCR-20 total scores did show a trend towards significantly predicting verbal aggression (AUC = 0.62, $p \leq 0.10$), serious verbal aggression (AUC = 0.61, $p \leq 0.10$), and the most serious sexual incident reported (AUC = 0.63, $p \leq 0.10$).

HCR-20 Violence Risk Judgement. Table 21 shows the ROC analysis for HCR-20 VRJ for both follow-up time frames. At follow-up one HCR-20 VRJ significantly predicted verbal aggression (AUC = 0.63, $p \leq 0.05$), and most serious violent incident reported (AUC = 0.63, $p \leq 0.05$).

At follow-up two HCR-20 VRJ did not significantly predict any outcomes. HCR-20 VRJ did show a trend towards significantly predicting verbal aggression (AUC = 0.62, $p \leq 0.10$), and the most serious violent incident reported (AUC = 0.60, $p \leq 0.10$).

Table 21.   Predictive Validity (AUC) of HCR-20 SPJ

Outcome	6 months[a]	12 months[b]
Violence	0.58	0.57
Physical Aggression	0.59	0.56
Verbal Aggression	0.63[*]	0.62[†]
Sexual Aggression	0.52	0.56
Serious physical aggression	0.54	0.58
Serious verbal aggression	0.47	0.55
Serious sexual aggression	0.61	0.58
Most Serious Incident Reported[c]	0.58	0.59
Most Serious Violent Only	0.63[*]	0.60[†]
Most Serious Sexual Only	0.45	0.55

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

These results generally provide evidence that supports the second hypothesis, as the strengths/protective factors on the whole were as predictive or even more predictive than the risk/vulnerability factors.

3.5. Hypothesis Three: Protective Factors and Structured Professional Judgments Made Using Both Risks and Protective Factors Will Show Incremental Validity

3.5.1. Short-Term Assessment of Risk and Treatability

START Violence Risk Judgment. Table 22 shows the ROC analysis for START VRJ for both follow-up time frames. As described earlier, the START VRJ is made by the clinician utilizing both the strengths and vulnerability ratings, and thus is similar to the SAPROF integrated VRJ. At follow-up one START VRJ significantly predicted violence (AUC = 0.68, $p \leq 0.01$), any physical aggression towards others (AUC = 0.69, $p \leq 0.01$), verbal aggression (AUC = 0.68, $p \leq 0.01$), sexual aggression (AUC = 0.64, $p \leq 0.01$), serious sexual aggression (AUC = 0.72, $p \leq 0.05$), most serious incident reported (AUC = 0.67, $p \leq 0.01$), and most serious violent incident (AUC = 0.69, $p \leq 0.01$). START VRJ also showed a trend towards significant prediction of serious verbal aggression (AUC = 0.62, $p \leq 0.10$), and serious physical aggression against others (AUC = 0.61, $p \leq 0.10$).

Table 22.   Predictive Validity (AUC) of START Violence Risk Judgment

Outcome	6 months[a]	12 months[b]
Violence	0.68**	0.67**
Physical Aggression	0.69**	0.67**
Verbal Aggression	0.68**	0.63*
Sexual Aggression	0.64*	0.66*
Serious physical aggression	0.61 [†]	0.72***
Serious verbal aggression	0.62 [†]	0.66**
Serious sexual aggression	0.72*	0.71*
Most Serious Incident Reported[c]	0.67**	0.69**
Most Serious Violent Only	0.69**	0.68**
Most Serious Sexual Only	0.54	0.62

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

At follow-up two START VRJ predicted violence (AUC = 0.67, $p \leq 0.01$), any physical aggression towards others (AUC = 0.67, $p \leq 0.01$), verbal aggression (AUC = 0.634, $p \leq 0.05$), sexual aggression (AUC = 0.66, $p \leq 0.05$), serious physical aggression

towards others (AUC = 0.72, $p \leq 0.001$), serious verbal aggression (AUC = 0.66, $p \leq$ 0.01), serious sexual aggression (AUC = 0.71, $p \leq 0.05$), most serious incident reported (AUC = 0.69, $p \leq 0.01$), and most serious violent incident (AUC = 0.68, $p \leq 0.01$).

START Incremental Validity Analysis. In order to test the incremental predictive validity of the START Strength total scores over the START Vulnerability total scores for the outcomes that were significant in the ROC analysis, hierarchical logistic regression analyses were carried out separately for each of the follow-up periods. The START Vulnerability total scores were entered in Step 1 of the analyses and the START Strength total scores were added in Step 2. Gender was added as a covariate in Step 1 in order to control for the influence of differential predictive validity by gender. As can be seen from Table 23 for most of the outcomes the overall model was not significant. Only most serious incident reported at follow-up one and most serious sexual incident reported at follow-up two were significantly predicted by the overall model ($\chi 2$ (3) = 8.54, $p \leq .05$ and $\chi 2$ (3) = 14.79, $p \leq .01$ respectively). The prediction model for the most serious incident reported at follow-up one was improved significantly when the START Strength total scores was added ($\Delta \chi 2$ (1) = 5.35, $p \leq .05$). However, addition of the START Strength total scores did not show significant improvement to the model for most serious sexual incident reported at follow-up two ($\Delta \chi 2$ (1) = 0.00, $p = ns$). Interestingly, though the overall models were not significant, START Strength total scores did significantly improve the prediction models for aggression against others at follow-up one ($\Delta \chi 2$ (1) = 5.56, $p \leq .05$) and most serious violent incident reported at follow-up one ($\Delta \chi 2$ (1) = 4.46, $p \leq .05$).

START VRJ Incremental Validity Analysis. In order to test the incremental predictive validity of the START VRJ over the START Vulnerability and Strength total scores for the outcomes that were significant in the ROC analysis, hierarchical logistic regression analyses were carried out on each of the follow-up times. The START Vulnerability total scores were entered in Step 1 of the analyses, the START Strength total scores were added in Step 2, and the START VRJ was finally added in Step 3. Gender was added as a covariate in Step 1 in order to control for the influence of differential predictive validity by gender. As can be seen from Table 24 all of the overall prediction models for all the follow-up times were significant. Additionally, START VRJ

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significantly improved all but two of the models, although these did approach significance (serious verbal aggression at follow-up one, $\Delta\chi2$ (1) = 3.20, $p \le .10$, and most serious sexual incident reported at follow-up two $\Delta\chi2$ (1) = 3.14, $p \le .10$).

Table 23. **Logistic Regression of START Strength and Vulnerability Total Scores**

Outcome	B	Wald	Exp (B)	Model Fit	Nagelkerke
				6 months	
Violence				χ^2 (3) = 6.83 [†]	0.09
				$\Delta\chi^2$ (1) = 3.08 [†]	
Gender (Step 1)	-0.71 [†]	2.81	0.49		
Vulnerability Scale (Step 1)	0.01	0.10	1.01		
Strength Scale (Step 2)	0.07 [†]	2.96	1.07		
Physical Aggression				χ^2 (3) = 6.13	0.08
				$\Delta\chi^2$ (1) = 5.56[*]	
Gender (Step 1)	-0.14	0.10	0.87		
Vulnerability Scale (Step 1)	-0.01	0.11	0.99		
Strength Scale (Step 2)	0.09[*]	5.10	1.10		
Serious verbal aggression				χ^2 (3) = 7.15 [†]	0.10
				$\Delta\chi^2$ (1) = 0.69	
Gender (Step 1)	-0.49	0.95	0.62		
Vulnerability Scale (Step 1)	0.07 [†]	2.86	1.08		
Strength Scale (Step 2)	0.37	0.67	1.04		
Most Serious Incident Reported[a]				χ^2 (3) = 8.54[*]	0.11
				$\Delta\chi^2$ (1) = 5.35[*]	
Gender (Step 1)	-0.60	1.86	0.55		
Vulnerability Scale (Step 1)	0.01	0.06	1.01		
Strength Scale (Step 2)	0.09[*]	4.94	1.09		
Most Serious Violent Only				χ^2 (3) = 5.68	0.08
				$\Delta\chi^2$ (1) = 4.46[*]	
Gender (Step 1)	0.06	0.02	1.07		
Vulnerability Scale (Step 1)	0.00	0.01	1.00		
Strength Scale (Step 2)	0.09	4.14	1.09		
				12 months	
Verbal Aggression				χ^2 (3) = 6.28 [†]	0.09
				$\Delta\chi^2$ (1) = 1.49	
Gender (Step 1)	0.06	0.02	1.07		

	B	Wald	Exp(B)	Model	R^2
Vulnerability Scale (Step 1)	0.06	2.02	1.06		
Strength Scale (Step 2)	0.05	1.46	1.05		
Serious verbal aggression				$\chi^2 (3) = 7.13$ [†]	0.09
				$\Delta\chi^2 (1) = 0.00$	
Gender (Step 1)	-0.73	2.63	0.48		
Vulnerability Scale (Step 1)	0.07 [†]	3.16	1.07		
Strength Scale (Step 2)	0.00	0.00	1.00		
Serious physical aggression				$\chi^2 (3) = 5.22$	0.07
				$\Delta\chi^2 (1) = 3.68$ [†]	
Gender (Step 1)	-0.07	0.03	0.93		
Vulnerability Scale (Step 1)	0.01	0.04	1.01		
Strength Scale (Step 2)	0.07 [†]	3.49	1.08		
Most Serious Incident Reported[a]				$\chi^2 (3) = 4.62$	0.06
				$\Delta\chi^2 (1) = 1.57$	
Gender (Step 1)	-0.45	1.08	0.64		
Vulnerability Scale (Step 1)	0.03	0.61	1.03		
Strength Scale (Step 2)	0.05	1.54	1.05		
Most Serious Violent Only				$\chi^2 (3) = 4.72$	0.06
				$\Delta\chi^2 (1) = 2.85$ [†]	
Gender (Step 1)	-0.22	0.27	0.80		
Vulnerability Scale (Step 1)	0.02	0.19	1.02		
Strength Scale (Step 2)	0.06	2.74	1.07		
Most Serious Sexual Only				$\chi^2 (3) = 14.79$**	0.09
				$\Delta\chi^2 (1) = 0.03$	
Gender (Step 1)	-1.63	3.90	0.20		
Vulnerability Scale (Step 1)	0.15*	5.44	1.16		
Strength Scale (Step 2)	0.01	0.03	1.01		

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Including Physical and Sexual aggression

Table 24. Logistic Regression of START Strength, Vulnerability and Violence Risk Judgment

Outcome	B	Wald	Exp (B)	Model Fit	Nagelkerke
				6 months	
Violence				$\chi^2(4) = 20.72^{***}$	0.25
				$\Delta\chi^2(1) = 13.89^{***}$	
Gender (Step 1)	-0.61	1.78	0.55		
Vulnerability Scale (Step 1)	0.00	0.01	1.00		
Strength Scale (Step 2)	0.05	1.30	1.05		
VRJ (Step 3)	1.43***	10.40	4.17		
Physical Aggression				$\chi^2(4) = 21.66^{***}$	0.26
				$\Delta\chi^2(1) = 15.53^{***}$	
Gender (Step 1)	0.69	0.02	1.07		
Vulnerability Scale (Step 1)	-0.03	0.48	0.97		
Strength Scale (Step 2)	0.07	2.63	1.07		
VRJ (Step 3)	1.38***	4.63	3.99		
Verbal Aggression				$\chi^2(4) = 19.17^{***}$	0.24
				$\Delta\chi^2(1) = 14.26^{***}$	
Gender (Step 1)	0.47	0.97	1.60		
Vulnerability Scale (Step 1)	0.05	1.57	1.05		
Strength Scale (Step 2)	0.01	0.11	1.01		
VRJ (Step 3)	1.83***	8.60	6.26		
Sexual Aggression				$\chi^2(4) = 11.06^{*}$	0.15
				$\Delta\chi^2(1) = 5.55^{*}$	
Gender (Step 1)	-0.56	1.13	0.57		
Vulnerability Scale (Step 1)	0.04	0.76	1.04		
Strength Scale (Step 2)	0.02	0.15	1.02		
VRJ (Step 3)	0.82*	5.47	2.27		
Serious verbal aggression				$\chi^2(4) = 10.36^{*}$	0.14
				$\Delta\chi^2(1) = 3.20^{\dagger}$	
Gender (Step 1)	-0.39	0.58	0.68		
Vulnerability Scale (Step 1)	0.07	2.43	1.07		
Strength Scale (Step 2)	0.02	0.14	1.02		
VRJ (Step 3)	0.62 †	3.21	1.86		
Serious sexual aggression				$\chi^2(4) = 14.03^{**}$	0.15
				$\Delta\chi^2(1) = 5.33^{*}$	
Gender (Step 1)	0.56	0.25	1.75		
Vulnerability Scale (Step 1)	-0.11	1.11	0.90		

Strength Scale (Step 2)	0.08	0.51	1.08		
VRJ (Step 3)	2.42**	7.84	11.26		
Most Serious Incident Reported[a]				$\chi^2 (4) = 20.98^{***}$ $\Delta\chi^2 (1) = 12.44^{***}$	0.25
Gender (Step 1)	-0.48	1.04	0.62		
Vulnerability Scale (Step 1)	-0.00	0.00	1.00		
Strength Scale (Step 2)	0.07	2.76	1.07		
VRJ (Step 3)	1.25***	10.32	3.49		
Most Serious Violent Incident				$\chi^2 (4) = 19.31^{***}$ $\Delta\chi^2 (1) = 13.63^{***}$	0.24
Gender (Step 1)	0.31	0.40	1.36		
Vulnerability Scale (Step 1)	-0.01	0.07	0.99		
Strength Scale (Step 2)	0.06	1.90	1.06		
VRJ (Step 3)	1.28***	11.72	3.58		

			12 months		
Violence				$\chi^2 (4) = 16.23^{**}$ $\Delta\chi^2 (1) = 11.90^{***}$	0.20
Gender (Step 1)	-0.42	0.82	0.66		
Vulnerability Scale (Step 1)	0.01	0.13	1.01		
Strength Scale (Step 2)	0.03	0.54	1.03		
VRJ (Step 3)	1.53**	7.97	4.61		
Physical Aggression				$\chi^2 (4) = 16.22^{**}$ $\Delta\chi^2 (1) = 13.22^{***}$	0.20
Gender (Step 1)	-0.15	0.11	0.82		
Vulnerability Scale (Step 1)	0.00	0.00	1.00		
Strength Scale (Step 2)	0.03	0.46	1.03		
VRJ (Step 3)	1.37**	9.94	3.94		
Verbal Aggression				$\chi^2 (4) = 14.73^{**}$ $\Delta\chi^2 (1) = 7.44^{**}$	0.21
Gender (Step 1)	0.10	0.03	1.10		
Vulnerability Scale (Step 1)	0.06	1.97	1.07		
Strength Scale (Step 2)	0.05	1.19	1.05		
VRJ (Step 3)	1.59*	4.59	4.92		
Sexual Aggression				$\chi^2 (4) = 12.16^{*}$ $\Delta\chi^2 (1) = 8.88^{**}$	0.16
Gender (Step 1)	-0.40	0.63	0.67		
Vulnerability Scale (Step 1)	0.04	0.79	1.04		
Strength Scale (Step 2)	-0.02	0.23	0.98		

VRJ (Step 3)	1.02**	8.45	2.76		
Serious verbal aggression				$\chi^2(4) = 16.75$** $\Delta\chi^2(1) = 9.62$**	0.21
Gender (Step 1)	-0.60	1.64	0.55		
Vulnerability Scale (Step 1)	0.07 †	2.66	1.07		
Strength Scale (Step 2)	-0.03	0.44	0.97		
VRJ (Step 3)	1.06**	8.62	2.89		
Serious physical aggression				$\chi^2(4) = 26.57$*** $\Delta\chi^2(1) = 21.35$***	0.31
Gender (Step 1)	0.19	0.16	1.21		
Vulnerability Scale (Step 1)	0.00	0.00	1.00		
Strength Scale (Step 2)	0.05	1.37	1.05		
VRJ (Step 3)	1.80***	14.86	6.04		
Serious sexual aggression				$\chi^2(4) = 19.93$*** $\Delta\chi^2(1) = 18.86$***	0.41
Gender (Step 1)	-0.01	0.00	0.99		
Vulnerability Scale (Step 1)	-0.09	1.32	0.91		
Strength Scale (Step 2)	0.00	0.08	1.00		
VRJ (Step 3)	2.36***	12.54	10.59		
Most Serious Incident Reported[a]				$\chi^2(4) = 20.04$*** $\Delta\chi^2(1) = 15.43$***	0.25
Gender (Step 1)	-0.32	0.46	0.73		
Vulnerability Scale (Step 1)	0.02	0.34	1.02		
Strength Scale (Step 2)	0.03	0.49	1.03		
VRJ (Step 3)	1.73**	9.88	5.64		
Most Serious Violent Only				$\chi^2(4) = 19.67$*** $\Delta\chi^2(1) = 14.95$***	0.24
Gender (Step 1)	-0.06	0.02	0.95		
Vulnerability Scale (Step 1)	0.01	0.04	1.01		
Strength Scale (Step 2)	0.05	1.20	1.05		
VRJ (Step 3)	1.54***	10.65	4.64		
Most Serious Sexual Only				$\chi^2(4) = 18.83$*** $\Delta\chi^2(1) = 3.14$ †	0.32
Gender (Step 1)	-2.34*	4.32	0.10		
Vulnerability Scale (Step 1)	0.13*	3.74	1.14		
Strength Scale (Step 2)	-0.02	0.05	0.99		
VRJ (Step 3)	0.79 †	3.13	2.20		

3.5.2. SAPROF and HCR-20

SAPROF Total Score Minus HCR-20 Total Score. Table 25 shows the ROC analysis for HCR-20 – SAPROF total score for both follow-up time frames. At follow-up one HCR-20 – SAPROF total score significantly predicted verbal aggression (AUC = 0.62, $p \leq .05$). No other outcomes had a significant association with the HCR-20 – SAPROF total score, however, findings did show a trend towards significant prediction of sexual aggression (AUC = 0.62, $p \leq 0.10$).

Table 25. Predictive Validity (AUC) of HCR-20 - SAPROF

Outcome	6 months[a]	12 months[b]
Violence	0.58	0.61 †
Physical Aggression	0.53	0.58
Verbal Aggression	0.64*	0.67**
Sexual Aggression	0.62 †	0.63 †
Serious physical aggression	0.46	0.54
Serious verbal aggression	0.58	0.66**
Serious sexual aggression	0.56	0.51
Most Serious Incident Reported[c]	0.58	0.61 †
Most Serious Violent Only	0.55	0.60 †
Most Serious Sexual Only	0.64	0.68*

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). † $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

At follow-up two, HCR-20 – SAPROF total scores significantly predicted any verbal aggression (AUC = 0.67, $p \leq 0.01$), serious verbal aggression (AUC = 0.66, $p \leq 0.01$), and most serious sexual incident reported (AUC = 0.68, $p \leq 0.05$). The HCR-20 – SAPROF total scores also showed a trend towards significantly predicting violence (AUC = 0.61, $p \leq 0.10$), sexual aggression (AUC = 0.63, $p \leq 0.10$), the most serious incident reported (AUC = 0.61, $p \leq 0.10$), and the most serious violent incident reported (AUC = 0.60, $p \leq 0.10$).

SAPROF + HCR Integrated Risk Judgment. Table 26 shows the ROC analysis for the final integrated (i.e. SAPROF + HCR-20) risk judgment for both follow-up time frames. At follow-up one, the SAPROF + HCR integrated risk judgment significantly predicted violence (AUC = 0.62, $p \leq .05$), and verbal aggression (AUC = 0.68, $p \leq .01$).

At follow-up two, the SAPROF + HCR risk judgment significantly predicted verbal aggression (AUC = 0.67, $p \leq 0.05$) and most serious violent incident reported (AUC = 0.61, $p \leq 0.05$). The SAPROF + HCR risk judgment also showed a trend towards significantly predicting any violence (AUC = 0.60, $p \leq 0.10$), serious verbal aggression (AUC = 0.61, $p \leq 0.10$), and the most serious incident reported (AUC = 0.60, $p \leq 0.10$).

Table 26.   Predictive Validity (AUC) of Final Integrated Risk Judgment

Outcome	6 months[a]	12 months[b]
Violence	0.62[*]	0.60[†]
Physical Aggression	0.59	0.57
Verbal Aggression	0.68[**]	0.67[*]
Sexual Aggression	0.57	0.60
Serious physical aggression	0.54	0.58
Serious verbal aggression	0.52	0.61[†]
Serious sexual aggression	0.65	0.61
Most Serious Incident Reported[c]	0.58	0.60[†]
Most Serious Violent Only	0.59	0.61[*]
Most Serious Sexual Only	0.55	0.60

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

SAPROF + HCR Integrated Risk Judgment 5-Point. Table 27 shows the ROC analysis for SAPROF + HCR risk judgment 5-point version for both follow-up time frames. At follow-up one, the SAPROF + HCR risk judgment 5-point version significantly predicted violence (AUC = 0.67, $p \leq 0.01$), any physical aggression towards others (AUC = 0.65, $p \leq 0.01$), verbal aggression (AUC = 0.72, $p \leq 0.001$), most serious incident reported (AUC = 0.66, $p \leq 0.01$), and most serious violent incident (AUC = 0.67, $p \leq 0.01$). SAPROF + HCR risk judgment 5-point also showed a trend towards significant prediction of serious sexual aggression (AUC = 0.68, $p \leq 0.10$).

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At follow-up two, the SAPROF + HCR risk judgment 5-point predicted violence (AUC = 0.66, $p \leq 0.05$), any physical aggression towards others (AUC = 0.63, $p \leq 0.05$), verbal aggression (AUC = 0.69, $p \leq 0.01$), serious physical aggression towards others (AUC = 0.64, $p \leq 0.05$), serious verbal aggression (AUC = 0.67, $p \leq 0.01$), most serious incident reported (AUC = 0.69, $p \leq 0.01$), and most serious violent incident (AUC = 0.68, $p \leq 0.01$). SAPROF + HCR risk judgment 5-point also showed a trend towards significant prediction of any sexual aggression (AUC = 0.62, $p \leq 0.10$), and most serious sexual incident reported (AUC = 0.63, $p \leq 0.10$).

Table 27.   Predictive Validity (AUC) of Final Integrated Risk Judgment 5-point

Outcome	6 months[a]	12 months[b]
Violence	0.67**	0.66*
Physical Aggression	0.65*	0.63*
Verbal Aggression	0.72***	0.69**
Sexual Aggression	0.60	0.62 †
Serious physical aggression	0.59	0.64*
Serious verbal aggression	0.57	0.67**
Serious sexual aggression	0.68 †	0.61
Most Serious Incident Reported[c]	0.66**	0.69**
Most Serious Violent Only	0.67**	0.68**
Most Serious Sexual Only	0.56	0.63 †

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). † $p \leq 0.1$ level (2-tailed). [a] $n = 102$. [b] $n = 100$. [c] Including Physical and Sexual aggression

SAPROF Total Score and HCR-20 Total Score Incremental Validity Analysis. In order to examine the incremental predictive validity of the SAPROF total scores over the HCR-20 total scores for the outcomes that were significant in the ROC analysis, we used hierarchical logistic regression analyses at each of the follow-up times. The HCR-20 total scores were entered in Step 1 of the analyses and the SAPROF total score was added in Step 2. Gender was added as a covariate in Step 1 in order to control for the potential influence of differential predictive validity by gender. As can be seen from Table 28, all but one of the overall models were significant. Specifically, the model for predicting violence at follow-up one was not significant ($\Delta\chi 2$ (1) = 2.73, $p = ns$). Similarly, SAPROF

total scores significantly improved all but three of the models, although one of these did approach significance (verbal aggression at follow-up two, $\Delta\chi2$ (1) = 3.20, $p \le .10$).

Table 28.   Logistic Regression of SAPROF and HCR-20 Total Scores

Outcome	B	Wald	Exp (B)	Model Fit	Nagelkerke
				6 months	
Most Serious Sexual Incident				χ^2 (2) = 2.73 $\Delta\chi^2$ (1) = 2.48	0.06
Gender (Not Included)[a]	-	-	-		
HCR-20 (Step 1)	-0.02	0.06	0.99		
SAPROF (Step 2)	0.14	2.29	1.14		
	12 months				
Verbal Aggression				χ^2 (3) = 11.48** $\Delta\chi^2$ (1) = 3.50 [†]	0.06
Gender (Step 1)	-0.63	1.26	1.87		
HCR-20 (Step 1)	0.10 [†]	3.43	1.10		
SAPROF (Step 2)	0.12 [†]	3.36	1.13		
Serious verbal aggression				χ^2 (3) = 16.98*** $\Delta\chi^2$ (1) = 7.89**	0.22
Gender (Step 1)	-1.11*	4.90	0.33		
HCR-20 (Step 1)	0.04	0.67	1.04		
SAPROF (Step 2)	0.16**	7.15	1.18		
Most Serious Sexual Incident				χ^2 (3) = 14.37** $\Delta\chi^2$ (1) = 6.92	0.25
Gender (Step 1)	-1.88*	4.88	0.15		
HCR-20 (Step 1)	0.02	0.10	1.02		
SAPROF (Step 2)	0.21*	5.94	1.24		

Note. *** $p \le 0.001$ level (2-tailed). ** $p \le 0.01$ level (2-tailed). * $p \le 0.05$ level (2-tailed). [†] $p \le 0.1$ level (2-tailed). [a] Females had no cases of this outcome and therefore logistic regression could not be run

SAPROF Protective Judgment and SAPROF + HCR Integrated Risk Judgment Incremental Validity Analysis. In order to examine the incremental predictive validity of the SAPROF + HCR risk judgment over the SAPROF Protective Judgment for the outcomes that were significant in the ROC analysis, we used hierarchical logistic regression analyses at each of the follow-up times. The SAPROF Protective Judgment was entered in Step 1 of the analyses and the SAPROF + HCR risk judgment was

added in Step 2. Gender was added as a covariate in Step 1 in order to control for the potential influence of differential predictive validity by gender. As can be seen from Table 29 all but two of the overall models were significant. One of these non-significant models did approach significant prediction of the outcome (most serious sexual incident reported at follow-up one, $\Delta\chi2$ (1) = 5.12, $p \leq$ .10). The SAPROF + HCR risk judgment significantly improved three of the models (including non-significant models), and the incremental validity of one model also approached significance (most serious sexual incident reported at follow-up one, $\Delta\chi2$ (1) = 2.72, $p \leq$ .10).

Table 29. **Logistic Regression of SAPROF SPJ and SAPROF + HCR Risk Judgment**

Outcome	B	Wald	Exp (B)	Model Fit	Nagelkerke
				6 months	
Violence				χ^2 (3) = 7.67[*]	0.10
				$\Delta\chi^2$ (1) = 4.91[*]	
Gender (Step 1)	-0.65	2.38	0.52		
SAPROF SPJ (Step 1)	-0.15	0.21	0.86		
SAPROF + HCR (Step 2)	0.72[*]	4.69	2.05		
Verbal Aggression				χ^2 (3) = 10.51[*]	0.14
				$\Delta\chi^2$ (1) = 9.23[**]	
Gender (Step 1)	0.30	0.44	1.35		
SAPROF SPJ (Step 1)	-0.15	0.19	0.86		
SAPROF + HCR (Step 2)	1.09[**]	8.27	2.96		
Most Serious Sexual Incident				χ^2 (3) = 5.12 [†]	0.10
				$\Delta\chi^2$ (1) = 0.00	
Gender (Not Included)[a]	-	-	-		
SAPROF SPJ (Step 1)	1.27 [†]	3.44	3.56		
SAPROF + HCR (Step 2)	0.04	0.01	1.04		
				12 months	
Verbal Aggression				χ^2 (3) = 26.87[***]	0.40
				$\Delta\chi^2$ (1) = 17.45[***]	
Gender (Step 1)	1.07	2.50	2.91		
SAPROF SPJ (Step 1)	0.65	2.21	1.91		
SAPROF + HCR (Step 2)	2.64[***]	10.67	13.96		
Serious verbal aggression				χ^2 (3) = 15.60[***]	0.20
				$\Delta\chi^2$ (1) = 0.67	

Gender (Step 1)	-1.05*	4.68	0.35		
SAPROF SPJ (Step 1)	1.00**	6.21	2.72		
SAPROF + HCR (Step 2)	0.28	0.67	1.32		
Most Serious Violent Incident				$\chi^2 (3) = 3.98$	0.21
				$\Delta\chi^2 (1) = 2.72$ †	
Gender (Step 1)	-0.14	0.12	0.87		
SAPROF SPJ (Step 1)	0.07	0.05	1.07		
SAPROF + HCR (Step 2)	0.54 †	2.65	1.71		
Most Serious Sexual Incident				$\chi^2 (3) = 16.12$***	0.27
				$\Delta\chi^2 (1) = 0.76$	
Gender (Step 1)	-2.56*	5.50	0.08		
SAPROF SPJ (Step 1)	1.21*	4.11	3.35		
SAPROF + HCR (Step 2)	0.40	0.75	1.48		

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). † $p \leq 0.1$ level (2-tailed). [a] Females had no cases of this outcome and therefore logistic regression could not be run

HCR-20 VRJ and SAPROF + HCR Integrated Risk Judgment Incremental Validity Analysis In order to examine the incremental predictive validity of the SAPROF + HCR risk judgment over the HCR-20 VRJ for the outcomes that were significant in the ROC analysis, we used hierarchical logistic regression analyses at each of the follow-up times. The HCR-20 VRJ was entered in Step 1 of the analyses and the SAPROF + HCR risk judgment was added in Step 2. Gender was added as a covariate in Step 1 in order to control for the potential influence of differential predictive validity by gender. As can be seen from Table 30 all but three of the overall models were significant. Of these three non-significant models one approached significant prediction of the outcome (violence at follow-up one, $\Delta\chi2 (1) = 7.44$, $p \leq .10$). The SAPROF + HCR risk judgment significantly improved two of the models (verbal aggression at follow-up one $\Delta\chi2 (1) = 8.57$, $p \leq .01$, and verbal aggression at follow-up two $\Delta\chi2 (1) = 12.45$, $p \leq .001$). Additionally, there was a trend towards the SAPROF + HCR risk judgment significantly improving the prediction model for violence at follow-up one ($\Delta\chi2 (1) = 2.83$, $p \leq .10$). As noted above the model as a whole also only approached significance.

Table 30.   Logistic Regression of HCR-20 SPJ and SAPROF + HCR Risk Judgment

Outcome	B	Wald	Exp (B)	Model Fit	Nagelkerke
				6 months	
Violence				χ^2 (3) = 7.44 [†]	0.10
				$\Delta\chi^2$ (1) = 2.83 [†]	
Gender (Step 1)	-0.63	2.17	0.54		
HCR-20 SPJ (Step 1)	-0.30	0.33	0.74		
SAPROF + HCR (Step 2)	0.91 [†]	2.71	2.48		
Verbal Aggression				χ^2 (3) = 19.90***	0.26
				$\Delta\chi^2$ (1) = 8.57**	
Gender (Step 1)	0.62	1.49	1.87		
HCR-20 SPJ (Step 1)	-0.32	0.31	0.73		
SAPROF + HCR (Step 2)	1.93**	7.72	6.88		
Most Serious Violent Incident				χ^2 (3) = 5.17	0.07
				$\Delta\chi^2$ (1) = 0.15	
Gender (Step 1)	0.15	0.11	1.16		
HCR-20 SPJ (Step 1)	0.82	2.37	2.27		
SAPROF + HCR (Step 2)	-0.21	0.15	0.81		
				12 months	
Verbal Aggression				χ^2 (3) = 23.36***	0.35
				$\Delta\chi^2$ (1) = 12.45***	
Gender (Step 1)	1.08	2.78	2.95		
HCR-20 SPJ (Step 1)	-0.70	1.11	0.50		
SAPROF + HCR (Step 2)	3.08**	9.83	21.83		
Most Serious Violent Incident				χ^2 (3) = 3.79	0.05
				$\Delta\chi^2$ (1) = 0.81	
Gender (Step 1)	-0.11	0.07	0.89		
HCR-20 SPJ (Step 1)	0.09	0.03	1.09		
SAPROF + HCR (Step 2)	0.47	0.80	1.61		

Note. *** $p \le 0.001$ level (2-tailed). ** $p \le 0.01$ level (2-tailed). * $p \le 0.05$ level (2-tailed). [†] $p \le 0.1$ level (2-tailed).

These results generally provide support for the third hypothesis, in that we found incremental validity of protective factors and SPJ Made Using Both Risks and Protective Factors in the prediction of physical, verbal, and sexual aggression.

3.6. Hypothesis Four: There Will Be A Gender Difference In Validity Of Risk Assessment Measures

3.6.1. Gender Differences on Total Scores and Summary Risk Judgments of Measures

Table 31 shows the *t*-test/chi-square findings on all the risk measures with gender as the group variable. No significant differences were found between the males and females on the mean scores of any of the risk measures. Similarly, there were no differences between the two genders on the SPJ ratings for each measure.

Table 31.   Gender differences on Risk Measure Total Scores

Measure	t/χ^2	df	p-value
Vulnerabilities Scale	0.36	100	0.72
Strength Scale	0.73	100	0.47
START SPJ	1.25	2	0.54
HCR-20 Total Score	1.30	98	0.20
HCR-20 VRJ	0.34	2	0.84
SAPROF Total Score	0.65	100	0.52
SAPROF SPJ	1.17	2	0.56
SAPROF SPJ 5-Point	2.65	2	0.62
SAPROF + HCR Risk Judgment	1.27	2	0.53
SAPROF + HCR Risk Judgment 5-Point	2.42	2	0.66

3.6.2. Short-Term Assessment of Risk and Treatability

START Strength Scale total scores. Table 32 shows the ROC analysis for START Strength total scores separated by gender. At follow-up one, START Strength total scores significantly predicted violence (AUC = 0.65, $p \leq 0.05$), any physical aggression towards others (AUC = 0.71, $p \leq 0.01$), most serious incident reported (AUC = 0.73, $p \leq 0.01$), and most serious violent incident (AUC = 0.73, $p \leq 0.01$), but only for the males. START Strength total scores also showed a trend towards significant prediction of verbal aggression (AUC = 0.64, $p \leq 0.10$) with the male participants. For the females, START Strength total scores only significantly predicted serious verbal aggression (AUC = 0.77, $p \leq 0.05$).

At follow-up two START Strength total scores significantly predicted serious verbal aggression (AUC = 0.66, $p \leq 0.05$), and most serious violent incident (AUC = 0.70, $p \leq 0.01$) for the male participants only. START Strength Scale total scores also showed a trend towards significant prediction of physical aggression against others (AUC = 0.63, $p \leq 0.10$) and verbal aggression (AUC = 0.64, $p \leq 0.10$) for the male participants only. For the females, START Strength total scores did not significantly predict any of the outcome variables.

Table 32.   Predictive Validity (AUC) of START Strength Scale Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.65*	0.62	0.62	0.61
Physical Aggression	0.71**	0.57	0.63 †	0.57
Verbal Aggression	0.64 †	0.54	0.64 †	0.65
Sexual Aggression	0.59	0.63	0.57	0.53
Serious physical aggression	0.63	0.60	0.66*	0.62
Serious verbal aggression	0.56	0.77*	0.55	0.61
Serious sexual aggression	0.59	0.65	0.52	0.51
Most Serious Incident[c]	0.73**	0.56	0.68	0.54
Most Serious Violent Only	0.73**	0.56	0.70**	0.56
Most Serious Sexual Only	0.60	n/a	0.62	0.53

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). † $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

START Vulnerability Scale total scores. Table 33 shows the ROC analysis for START Vulnerability Scale total scores separated by gender. At follow-up one START Vulnerability total scores significantly predicted serious verbal aggression (AUC = 0.77, $p \leq 0.05$), but for the female participants only. For the males START strength total scores did not significantly predict any of the outcome variables.

At follow-up two START Vulnerability total scores significantly predicted most serious sexual incident reported (AUC = 0.85, $p \leq 0.05$), and showed a trend towards significant prediction of serious verbal aggression (AUC = 0.68, $p \leq 0.10$), for the female

participants only. For the males START strength total scores did not significantly predict any of the outcome variables.

Table 33.   **Predictive Validity (AUC) of START Vulnerability Scale Separated by Gender**

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.53	0.54	0.53	0.54
Physical Aggression	0.51	0.48	0.54	0.47
Verbal Aggression	0.61	0.58	0.61	0.62
Sexual Aggression	0.59	0.60	0.60	0.52
Serious physical aggression	0.55	0.48	0.56	0.52
Serious verbal aggression	0.57	0.77*	0.57	0.68 [†]
Serious sexual aggression	0.42	0.63	0.42	0.50
Most Serious Incident[c]	0.57	0.49	0.58	0.50
Most Serious Violent Only	0.54	0.49	0.56	0.49
Most Serious Sexual Only	0.59	n/a	0.62	0.85*

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

START Violence Risk Judgment. Table 34 shows the ROC analysis for START VRJ separated for gender. At follow-up one, START VRJ significantly predicted violence (AUC = 0.69, $p \leq 0.01$) for the males, any physical aggression towards others for the males (AUC = 0.69, $p \leq 0.01$) and females (AUC = 0.69, $p \leq 0.05$), verbal aggression (AUC = 0.68, $p \leq 0.01$) for the males, serious sexual aggression (AUC = 0.77, $p \leq 0.05$) for the males, most serious incident reported for both males (AUC = 0.65, $p \leq 0.05$) and females (AUC = 0.71, $p \leq 0.05$), and most serious violent incident for both males (AUC = 0.68, $p \leq 0.05$) and females (AUC = 0.71, $p \leq 0.05$). START VRJ also showed a trend towards significant prediction of violence (AUC = 0.65, $p \leq 0.10$), verbal aggression (AUC = 0.68, $p \leq 0.10$), and any sexual aggression against others (AUC = 0.73, $p \leq 0.10$) for the females.

At follow-up two START VRJ predicted violence (AUC = 0.72, $p \leq 0.05$) for the females, any physical aggression towards others (AUC = 0.70, $p \leq 0.05$) for the females, sexual aggression (AUC = 0.79, $p \leq 0.01$) for the females, serious physical aggression

towards others for males (AUC = 0.71, $p \leq 0.01$) and females (AUC = 0.73, $p \leq 0.01$), serious verbal aggression (AUC = 0.77, $p \leq 0.01$) for females, most serious incident reported (AUC = 0.74, $p \leq 0.01$) for the females, and most serious violent incident (AUC = 0.70, $p \leq 0.05$) for the females. START VRJs also showed a trend towards significant prediction of violence (AUC = 0.63, $p \leq 0.10$), aggression against others (AUC = 0.64, $p \leq 0.10$), and most serious incident reported (AUC = 0.65, $p \leq 0.10$), for the males.

Table 34.   Predictive Validity (AUC) of START VRJ Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.69**	0.65[†]	0.63[†]	0.72*
Physical Aggression	0.69**	0.69*	0.64[†]	0.70*
Verbal Aggression	0.68*	0.68[†]	0.62	0.66
Sexual Aggression	0.58	0.73[†]	0.59	0.79**
Serious physical aggression	0.62	0.60	0.71**	0.73**
Serious verbal aggression	0.58	0.67	0.60	0.77**
Serious sexual aggression	0.77*	0.65	0.71*	0.70
Most Serious Incident[c]	0.65*	0.71*	0.65[†]	0.74**
Most Serious Violent Only	0.68*	0.71*	0.67*	0.70*
Most Serious Sexual Only	0.52	n/a	0.58	0.74

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

3.6.3.   The Structured Assessment of Protective Factors for Violence Risk

SAPROF Total Score. Table 35 shows the ROC analysis for SAPROF total scores separated by gender. At follow-up one SAPROF total scores significantly predicted violence (AUC = 0.67, $p \leq 0.05$), any verbal aggression (AUC = 0.70, $p \leq 0.01$), sexual aggression (AUC = 0.69, $p \leq 0.05$), serious verbal aggression (AUC = 0.67, $p \leq 0.05$), serious sexual aggression (AUC = 0.78, $p \leq 0.05$), most serious incident reported (AUC = 0.76, $p \leq 0.01$), and most serious sexual incident (AUC = 0.74, $p \leq 0.05$), but only for the males. SAPROF total scores total scores did not significantly predict any outcomes for the females.

At follow-up two SAPROF total scores significantly predicted verbal aggression (AUC = 0.71, $p \leq 0.01$), serious verbal aggression (AUC = 0.72, $p \leq 0.01$), most serious violent incident (AUC = 0.67, $p \leq 0.01$), and most serious sexual incident (AUC = 0.72, $p \leq 0.05$), for the male participants only. SAPROF total scores also showed a trend towards significant prediction of violence (AUC = 0.65, $p \leq 0.10$), sexual aggression (AUC = 0.65, $p \leq 0.10$), and most serious violent incident (AUC = 0.64, $p \leq 0.10$), again for the male participants only. For the females, SAPROF total scores did not significantly predict any of the outcome variables.

Table 35.   Predictive Validity (AUC) of SAPROF Total Score Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.67*	0.51	0.65 [†]	0.53
Physical Aggression	0.56	0.46	0.58	0.48
Verbal Aggression	0.70**	0.42	0.71**	0.51
Sexual Aggression	0.69*	0.44	0.65 [†]	0.53
Serious physical aggression	0.57	0.39	0.56	0.50
Serious verbal aggression	0.67*	0.56	0.72**	0.61
Serious sexual aggression	0.78*	0.55	0.55	0.64
Most Serious Incident[c]	0.66*	0.47	0.67*	0.50
Most Serious Violent Only	0.56	0.47	0.64 [†]	0.49
Most Serious Sexual Only	0.74*	n/a	0.72*	0.72

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

SAPROF Protective Judgement. Table 36 shows the ROC analysis for SAPROF Protective Judgment separated by gender. At follow-up one SAPROF Protective Judgment did not significantly predict any outcomes for either gender. SAPROF Protective Judgment showed a trend towards significant prediction of violence (AUC = 0.64, $p \leq 0.10$), verbal aggression (AUC = 0.63, $p \leq 0.10$), serious physical aggression (AUC = 0.64, $p \leq 0.001$), serious sexual aggression (AUC = 0.75, $p \leq 0.10$), and most serious sexual incident reported (AUC = 0.66, $p \leq 0.10$), for the male participants only.

At follow-up two SAPROF Protective Judgment significantly predicted serious verbal aggression (AUC = 0.69, $p \leq 0.01$), and most serious incident reported (AUC = 0.66, $p \leq 0.05$). SAPROF Protective Judgment showed a trend towards significantly predicting any verbal aggression (AUC = 0.64, $p \leq 0.10$), and the most serious sexual incident reported (AUC = 0.64, $p \leq 0.10$) for the male participants only. For the females, the SAPROF Protective Judgment did not significantly predict any of the outcome variables.

Table 36.   Predictive Validity (AUC) of SAPROF SPJ Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.64 [†]	0.38	0.62	0.50
Physical Aggression	0.54	0.35	0.55	0.46
Verbal Aggression	0.63 [†]	0.44	0.64 [†]	0.54
Sexual Aggression	0.60	0.45	0.59	0.54
Serious physical aggression	0.64 [†]	0.48	0.53	0.44
Serious verbal aggression	0.51	0.32	0.69[**]	0.59
Serious sexual aggression	0.75 [†]	0.58	0.55	0.63
Most Serious Incident[c]	0.61	0.32	0.66[*]	0.50
Most Serious Violent Only	0.53	0.32	0.62	0.47
Most Serious Sexual Only	0.66 [†]	n/a	0.65 [†]	0.66

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

SAPROF Protective Judgement 5-Point. Table 37 shows the ROC analysis for SAPROF Protective Judgment 5-point version separated by gender. At follow-up one SAPROF Protective Judgment 5-point significantly predicted violence (AUC = 0.67, $p \leq$ 0.05), any verbal aggression (AUC = 0.69, $p \leq 0.01$), serious verbal aggression (AUC = 0.68, $p \leq 0.05$), and serious sexual aggression (AUC = 0.77, $p \leq 0.05$). SAPROF Protective Judgment showed a trend towards significantly predicting the most serious sexual incident reported (AUC = 0.67, $p \leq 0.10$) for the male participants only. For the females the SAPROF Protective Judgment 5-point did not significantly predict any of the outcome variables.

At follow-up two SAPROF Protective Judgment 5-point significantly predicted any verbal aggression (AUC = 0.71, $p \leq 0.05$), serious verbal aggression (AUC = 0.70, $p \leq 0.01$), and most serious incident reported (AUC = 0.65, $p \leq 0.05$). SAPROF Protective Judgment showed a trend towards significantly predicting violence (AUC = 0.64, $p \leq 0.10$), and the most serious sexual incident reported (AUC = 0.66, $p \leq 0.10$) for the male participants only. For the females, the SAPROF Protective Judgment 5-point did not significantly predict any of the outcome variables.

Table 37.   Predictive Validity (AUC) of SAPROF SPJ 5 point Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.67[*]	0.43	0.64 [†]	0.45
Physical Aggression	0.55	0.41	0.54	0.43
Verbal Aggression	0.69[**]	0.44	0.71[*]	0.50
Sexual Aggression	0.61	0.49	0.59	0.51
Serious physical aggression	0.55	0.42	0.56	0.44
Serious verbal aggression	0.68[*]	0.53	0.70[**]	0.56
Serious sexual aggression	0.77[*]	0.59	0.56	0.59
Most Serious Incident[c]	0.61	0.40	0.65[*]	0.45
Most Serious Violent Only	0.55	0.40	0.62	0.45
Most Serious Sexual Only	0.67 [†]	n/a	0.66 [†]	0.60

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

3.6.4.   The Historical, Clinical, Risk Management-20 Version 2

HCR-20 Total Score. Table 38 shows the ROC analysis for HCR-20 total scores separated by gender. At follow-up one HCR-20 total scores did not significantly predict any of the outcomes for either gender. However, there was a trend towards significant prediction of verbal aggression (AUC = 0.63, $p \leq 0.10$) for the males.

At follow-up two, HCR-20 total scores did not significantly predict any of the outcomes for either gender. However, there was a trend towards significant prediction of

serious verbal aggression (AUC = 0.69, $p \leq 0.10$), and most serious sexual incident reported (AUC = 0.83, $p \leq 0.10$) for the females.

Table 38.   Predictive Validity (AUC) of HCR-20 Total Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.56	0.51	0.59	0.58
Physical Aggression	0.54	0.47	0.58	0.53
Verbal Aggression	0.63[†]	0.60	0.63	0.62
Sexual Aggression	0.60	0.50	0.59	0.57
Serious physical aggression	0.46	0.40	0.53	0.50
Serious verbal aggression	0.44	0.61	0.54	0.69[†]
Serious sexual aggression	0.34	0.64	0.33	0.69
Most Serious Incident[c]	0.59	0.48	0.60	0.54
Most Serious Violent Only	0.59	0.48	0.60	0.52
Most Serious Sexual Only	0.54	n/a	0.57	0.83[†]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

HCR-20 Violence Risk Judgment. Table 39 shows the ROC analyses for HCR-20 SPJ separated by gender. At follow-up one HCR-20 SPJ significantly predicted most serious violent incident reported violence (AUC = 0.68, $p \leq .01$) for the males only. HCR-20 SPJ showed a trend towards significant prediction of verbal aggression (AUC = 0.65, $p \leq 0.10$), only for the males. For the females, the HCR-20 SPJ did not significantly predict any of the outcome variables.

At follow-up two HCR-20 SPJ significantly predicted most serious violent incident reported violence (AUC = 0.66, $p \leq .01$) for the males only. HCR-20 SPJ showed a trend towards significant prediction of verbal aggression (AUC = 0.66, $p \leq 0.10$), again only for the males. For the females, the HCR-20 SPJ did not significantly predict any of the outcome variables.

Table 39.   Predictive Validity (AUC) of HCR-20 SPJ Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.61	0.55	0.61	0.52
Physical Aggression	0.62	0.55	0.61	0.48
Verbal Aggression	0.65 [†]	0.62	0.66 [†]	0.54
Sexual Aggression	0.50	0.57	0.51	0.66
Serious physical aggression	0.59	0.47	0.62	0.52
Serious verbal aggression	0.45	0.51	0.52	0.60
Serious sexual aggression	0.61	0.61	0.53	0.67
Most Serious Incident[c]	0.59	0.55	0.62	0.54
Most Serious Violent Only	0.68[*]	0.55	0.66[*]	0.50
Most Serious Sexual Only	0.45	n/a	0.50	0.78

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

3.6.5.   SAPROF and HCR-20 Gender Differences

SAPROF Total Score Minus HCR-20 Total Score. Table 40 shows the ROC analysis for HCR-20 – SAPROF total score separated by gender. At follow-up one, HCR-20 – SAPROF total scores significantly predicted verbal aggression (AUC = 0.71, *p* ≤ .01), sexual aggression (AUC = 0.69, *p* ≤ .01), and most serious incident reported (AUC = 0.66, *p* ≤ .05), for the males only. HCR-20 – SAPROF total score showed a trend towards significant prediction of violence (AUC = 0.64, *p* ≤ 0.10), and most violence incident reported (AUC = 0.63, *p* ≤ 0.10), again for the males only. For the females, the HCR-20 – SAPROF total score did not significantly predict any of the outcome variables.

At follow-up two, HCR-20 – SAPROF total score significantly predicted verbal aggression (AUC = 0.72, *p* ≤ .01), serious verbal aggression (AUC = 0.66, *p* ≤ .05), most serious incident reported (AUC = 0.66, *p* ≤ .05), and most serious violent incident reported (AUC = 0.66, *p* ≤ .05) for the males only. HCR-20 – SAPROF total score showed a trend towards significant prediction of violence (AUC = 0.64, *p* ≤ 0.10), and sexual aggression (AUC = 0.66, *p* ≤ 0.10) for the males, and serious verbal aggression

(AUC = 0.67, $p \leq$ 0.10), and most serious sexual incident reported (AUC = 0.83, $p \leq$ 0.10) for the females.

Table 40.   Predictive Validity (AUC) of HCR-20 – SAPROF Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.64 [†]	0.48	0.64 [†]	0.56
Physical Aggression	0.58	0.44	0.61	0.51
Verbal Aggression	0.71**	0.52	0.72**	0.60
Sexual Aggression	0.69*	0.49	0.66 [†]	0.58
Serious physical aggression	0.55	0.36	0.58	0.50
Serious verbal aggression	0.56	0.58	0.66*	0.68 [†]
Serious sexual aggression	0.50	0.64	0.38	0.71
Most Serious Incident[c]	0.66*	0.45	0.66*	0.53
Most Serious Violent Only	0.63 [†]	0.45	0.66*	0.51
Most Serious Sexual Only	0.63	n/a	0.64	0.83 [†]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

SAPROF + HCR Integrated Risk Judgement. Table 41 shows the ROC analysis for the SAPROF + HCR risk judgment separated by gender. At follow-up one, SAPROF + HCR risk judgments significantly predicted violence (AUC = 0.69, $p \leq$ .01), verbal aggression (AUC = 0.72, $p \leq$ .01), and most serious violent incident reported (AUC = 0.66, $p \leq$ .05) for the males only. SAPROF + HCR risk judgment showed a trend towards significant prediction of any physical aggression towards others (AUC = 0.64, $p \leq$ 0.10), and most serious incident reported (AUC = 0.63, $p \leq$ 0.10) for the males only. For the females, the SAPROF + HCR risk judgment did not significantly predict any of the outcome variables.

At follow-up two, SAPROF + HCR risk judgments significantly predicted verbal aggression (AUC = 0.74, $p \leq$ 0.01), and most serious violent incident reported (AUC = 0.68, $p \leq$ 0.05). SAPROF + HCR risk judgment showed a trend towards significantly predicting violence (AUC = 0.64, $p \leq$ 0.10), any physical aggression towards others (AUC = 0.63, $p \leq$ 0.10), serious physical aggression (AUC = 0.64, $p \leq$ 0.10), and the

most serious incident reported (AUC = 0.64, $p \leq 0.10$) for the male participants only. For the females, the SAPROF + HCR risk judgment did not significantly predict any of the outcome variables.

Table 41.   Predictive Validity (AUC) of Final Integrated Risk Judgment Separated by Gender

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.69**	0.53	0.64 [†]	0.54
Physical Aggression	0.64 [†]	0.52	0.63 [†]	0.49
Verbal Aggression	0.72**	0.60	0.74**	0.56
Sexual Aggression	0.58	0.55	0.57	0.65
Serious physical aggression	0.61	0.46	0.64 [†]	0.51
Serious verbal aggression	0.51	0.54	0.59	0.65
Serious sexual aggression	0.67	0.63	0.55	0.69
Most Serious Incident[c]	0.63 [†]	0.50	0.64 [†]	0.56
Most Serious Violent Only	0.66*	0.50	0.68*	0.51
Most Serious Sexual Only	0.55	n/a	0.57	0.74

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

SAPROF + HCR Integrated Risk Judgement 5-Point. Table 42 shows the ROC analysis for the SAPROF + HCR risk judgment 5-point separated by gender. At follow-up one SAPROF + HCR risk judgment 5-point significantly predicted violence (AUC = 0.76, $p \leq .001$), any physical aggression against others (AUC = 0.73, $p \leq .01$), verbal aggression (AUC = 0.78, $p \leq .001$), serious physical aggression (AUC = 0.68, $p \leq .05$), most serious incident reported (AUC = 0.73, $p \leq .001$), and most serious violent incident reported (AUC = 0.74, $p \leq .001$) for the males only. The SAPROF + HCR risk judgment 5-point total score showed a trend towards significant prediction of serious sexual aggression (AUC = 0.74, $p \leq 0.10$) for the males only. For the females, the SAPROF + HCR risk judgment 5-point did not significantly predict any of the outcome variables.

At follow-up two SAPROF + HCR risk judgment 5-point significantly predicted violence (AUC = 0.73, $p \leq .01$), any physical aggression against others (AUC = 0.71, $p \leq$

.01), verbal aggression (AUC = 0.76, $p \leq$ .01), serious physical aggression (AUC = 0.73, $p \leq$ .01), serious verbal aggression (AUC = 0.66, $p \leq$ .05), most serious incident reported (AUC = 0.76, $p \leq$ .001), and most serious violent incident reported (AUC = 0.77, $p \leq$ .001) for the males only. SAPROF + HCR risk judgment 5-point total score showed a trend towards significant prediction of serious verbal aggression (AUC = 0.68 $p \leq 0.10$) for the females.

Table 42. **Predictive Validity (AUC) of Final Integrated Risk Judgment 5-point Separated by Gender**

Outcome	6 months[a]		12 months[b]	
	♂	♀	♂	♀
Violence	0.76***	0.54	0.73**	0.57
Physical Aggression	0.73**	0.53	0.73**	0.53
Verbal Aggression	0.78***	0.63	0.76**	0.60
Sexual Aggression	0.63	0.55	0.60	0.65
Serious physical aggression	0.68*	0.47	0.73**	0.52
Serious verbal aggression	0.57	0.58	0.66*	0.68 †
Serious sexual aggression	0.74 †	0.60	0.57	0.67
Most Serious Incident[c]	0.73**	0.55	0.76***	0.59
Most Serious Violent Only	0.76***	0. 55	0.77***	0.55
Most Serious Sexual Only	0.56	n/a	0.60	0.76

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). † $p \leq 0.1$ level (2-tailed). [a] Male $n = 62$, Female $n = 40$. [b] Male $n = 60$, Female $n = 40$. [c] Including Physical and Sexual aggression

Finally, these results provide evidence to support our final hypothesis. Although there were no significant gender differences found on the mean scores or SPJ ratings for any of the measures, we found some interesting differences with predictive validity of all the measures.

Chapter 4.   Discussion

4.1. Summary

4.1.1.   Base Rates of Physical and Sexual Aggression

We found relatively high rates of aggression in this sample of civil psychiatric patients, with roughly half the participants engaging in acts of actual, threatened or attempted harm towards other individuals after six months' follow-up. After one year, this was true for almost two thirds of the sample. However, it should be noted that previous research at this institution found similar rates of aggression (64% for mild assault, 41% for moderate assault, and 26% for violent assault; Ehmann et al., 2001).

We also examined prevalence of sexually aggressive or inappropriate behaviours, and found that a quarter of the patients in this sample engaged in this type of behaviour after a six month follow-up period, and just under a third after a year. Looking at more serious forms of aggression, we found just over a quarter of inpatients engaged in serious violence and under one tenth in serious sexual aggression after six months. This rate increased to almost half of the sample for serious violence and just over one sixth for serious sexual aggression, after a year.

Interestingly, the base rates for physical and verbal aggression did not differ by gender, with similar rates being found for both men and women. These results are also consistent with previous research at RVH that found similar rates of aggression for both men and women, with 43.8% of males and 48.1% of females engaging in physical aggression, and 69.8% of men and 70.8% of women engaging in verbal aggression (Nicholls, Ogloff, & Douglas, 2004). We did find differences with regard to sexual aggression, with the males tending to have higher rates than the females.

4.1.2. Hypothesis One – Measures will show good psychometric properties in this population

We found support for the first hypothesis in that we found generally good psychometric properties for all of the risk measures, with the exception of the inter-rater reliability results for the START SPJ and HCR-20 SPJ. Before the outliers were removed the Inter-rater reliability for the START total scores were moderate, and the VRJ were poor. After the 2 outliers were removed the Inter-rater reliability was good for the total scores but the VRJ remained poor. The SAPROF had excellent Inter-rater reliability for the total scores and the SAPROF + HCR risk judgment, and moderate IRR for the protective judgement. The HCR-20 Inter-rater reliability was also excellent for the total scores, and moderate for the VRJ. Item Inter-rater reliability was variable for all three measures, ranging from poor to excellent. Finally, all three-risk measures were significantly correlated in the expected directions (i.e. negative associations between protective factors and risk factors etc.) indicating convergent and divergent validity for all three measures in this population.

4.1.3. Hypothesis Two: Protective Factors Will Evidence Predictive Validity Of Future Violence Comparable With Risk Factors

The second hypothesis on predictive validly of protective factors was generally supported by our findings. Using Rice and Harris' (2005) standards of effect sizes for AUC, we found that the START strength score showed good predictive validity for physical aggression and for verbal aggression up to a year. Interestingly, despite not being intended to assess for verbal or sexual aggression, per se, the START Vulnerability scale showed good predictive validity for serious verbal aggression for the six-month follow-up time frame and for most serious sexual incident reported up to a year. In contrast, the SAPROF demonstrated good predictive validity for verbal and sexual aggression for both time frames. The SAPROF protective judgement on its own evidenced good predictive validity for verbal and sexual aggression also, for up to a year. However, the 5-point version of the SAPROF protective judgement showed good predictive validity for sexual and verbal aggression for both time frames. In contrast, the HCR-20 total score did not demonstrate good prediction of any of the outcomes at any time frame.

4.1.4. Hypothesis Three: Protective Factors and Structured Professional Judgments Made Using Both Risks and Protective Factors Will Show Incremental Validity

Support was also found for the third hypothesis relating to the incremental validity of protective factors and Structured Professional Judgments Made Using Both Risks and Protective Factors. When strengths and risk factors were combined we found much better results. The START VRJ is made using the information obtained from a consideration of both the strength and vulnerability ratings. The START VRJ had good to excellent predictive validity for all outcomes (verbal, physical and sexual aggression of varying degrees of seriousness) for both time frames with the single exception of male verbal aggression at 12 months. Looking at the HCR-20 minus SAPROF total scores we found that these scores were similar to the SAPROF total scores in that they evidenced good predictive validity for verbal and sexual aggression at both time frames. Similarly, the HCR-20 and SAPROF combined risk judgment also showed good predictive validity for sexual aggression and verbal aggression for both time frames. The predictive validity of the integrated risk judgment improved greatly for the 5-point version, showing good predictive validity for all forms of aggression for both time frames.

With regard to incremental validity, we found that the START strength scores significantly improved many of the predictive models for physical aggression, though not for verbal and sexual aggression. We also found that when the START VRJ was added to the model, there was significant improvement to all the prediction models for all types of aggression. The SAPROF total scores improved most of the prediction models for verbal and sexual aggression. When the integrated risk judgment was added to the model with the SAPROF protective judgments, we again found an improvement to most of the prediction models for all forms of aggression. Similarly, when the integrated risk judgment was added to the model with the HCR-20 VRJ many of the prediction models improved for sexual and verbal aggression.

4.1.5. Hypothesis Four: There Will Be A Gender Difference In Validity Of Risk Assessment Measures

Finally, we found evidence to support our final hypothesis related to gender differences in predictive validity of each risk assessment measure. There were no significant gender differences found on the mean scores or SPJ ratings for any of the measures. When the ROC analysis was repeated separated by gender, we found some interesting results. With the START strength scale there were more significant predictive AUC findings for the male than the female participants, and further after one-year follow-up only verbal aggression showed good predictive validity for the female participants. In contrast, the START vulnerability scale was not predictive for the males for any of the types of aggressions at any follow-up time, but serious verbal aggression and most serious sexual incident was predicted for the females up to a year up. Ultimately, however it is not intended for total scores to be used in decision-making, and the START SPJ demonstrated generally equal and good to excellent predictive validity for males and females, though with slightly better prediction was noted for the males.

The SAPROF total score demonstrated good prediction for the men for verbal, physical and sexual aggression up to a year. For the females, however, the SAPROF total score only predicted one outcome (i.e., sexual aggression) after the one year follow-up period. As with the START, the more clinically relevant question is the extent to which the SAPROF summary risk judgments improve upon chance accuracy. The SAPROF protective judgment rating was similar to the total scores in that it showed good prediction for the males for verbal, physical and sexual aggression up to a year. For the females, however, the SAPROF protective judgment did not predict any forms of aggression at any time frame. The SAPROF protective judgment 5-point version had generally higher AUC findings for the males and the same findings for the females as the regular protective judgment.

Similar results were found for the combined HCR-20-SAPROF scores, which evidenced good prediction for the males for verbal, physical and sexual aggression up to a year. With the females, the HCR-20-SAPROF showed good predictive validity for verbal aggression at the one-year time frame. Interestingly, the HCR-20 total scores did not predict any form of aggression for the males at any time frame. For the females,

HCR-20 total scores showed good prediction of only one outcome (i.e., sexual aggression) at one-year follow-up). The HCR-20 VRJ demonstrated improved predictive validity for the males; with good predictive validity found for verbal and physical aggression at all follow-up periods. The HCR-20 VRJ predictive validity was similar to the HCR-20 total score for the females, with good predictive validity of sexual aggression at one-year follow-up.

The HCR-20-SAPROF integrated final risk judgment evidenced results similar to the HCR-20 and SAPROF findings, with good prediction of verbal and physical aggression at both time frames for the males, and for the females, good prediction of sexual aggression and serious verbal aggression at the one-year time frame. The integrated final risk judgment 5-point version showed improved prediction for the males, with good prediction demonstrated for all forms of aggression at both time frames. The females demonstrated good prediction for sexual aggression and serious verbal aggression at the one-year time frame.

4.2. Conclusions

Generally, we found evidence that supports all of the proposed hypotheses. On the whole, psychometric properties for all the measures included were good, with the exception of the HCR-20 SPJ and START Inter-rater reliability findings. Previous studies have generally reported good to excellent inter-rater reliability (ICC=0.69–0.87, O'Shea et al., 2014), though similar findings were also reported in a previous study using file review with a sample of female forensic patient (ICC= 0.62 - 0.68, Viljoen et al., 2011). Protective factors demonstrated incremental validity over the risk factors alone, which is also in line with previous research on the use of strengths in risk assessments (Desmarais et al., 2012; Lodewijks, 2008; de Vries Robbé & de Vogel, 2010; de Vries Robbé et al., 2011; de Vries Robbé, 2014). Similarly, summary risk judgments showed incremental validity over actuarial assessments, which provides empirical evidence for the intended method of utilization in practice and also is in line with previous research (Douglas et al., 2014; Desmarais et al., 2012).

It should be noted that the HCR-20 predictive validity (AUC from 0.42-0.63 for total, and 0.45-0.65 for SPJ) was generally lower that what has been found in civil psychiatric populations in the past although the range of scores are well within what has been reported for that measure (i.e., AUCs from 0.48-0.97 for HCR-20 total scores, and 0.46-0.96 for SPJs, Douglas et al., 2014). Further, the predictive validity of the SAPROF (AUC from 0.50 – 0.72 for total scores, and 0.43 – 0.67 for SPJ) and the START (AUC from 0.43 – 0.66 for strength total scores, 0.46 – 0.69 for vulnerability total scores and 0.49 – 0.72 for SPJ) were not as strong as has been reported in prior research (SAPROF AUC from 0.71 – 0.85 for total scores, and 0.65 – 0.82 for SPJ, de Vries Robbé, 2014; START AUC from 0.73 – 0.80 for strength total scores, 0.74 – 0.80 for vulnerability total scores and 0.80 – 0.85 for SPJ; Desmarais et al., 2012[3]). It is possible that these findings are due to the unique nature of this persistently mentally ill and long-term institutionalized population, of which almost all were involuntarily committed and had an average hospital stay of five and a half years, with a range of one month to 29 years. Further, it has been suggested that when a tertiary hospital closes, the most high functioning individual are released first, with the most difficult to place and manage patients being transferred last (Peterson et al., 2013). Given that this RVH has been downsizing for decades, this sample represents the most ill of this institution, and is not representative of a typical tertiary hospital (Peterson et al., 2013).

We found interesting gender differences in the predictive validity of all the risk measures included. Generally, the HCR-20 and SAPROF performed better with the males when predicting physical and verbal aggression, and better with the females when predicting sexual aggression. The research on HCR-20's applicability to female population has revealed mixed results with some studies finding comparable predictive validity for both men and women (Coid et al., 2009) and others finding better predictive validity for men than women (de Vogel & de Vries Robbé, 2013). There are a limited number of studies looking at the predictive validity of SAPROF with females. However, past findings have found weaker predictive validity for females than for males (Vries Robbé, 2014). The START generally performed equally well for both genders with a

[3] Note both the SAPROF and START AUCs come from forensic psychiatric samples, not civil psychiatric samples

slightly better predictive validity for the males. There is currently no published research on START predictive validity with female civil psychiatric populations to compare with our findings.

It remains unclear how protective factors are working to aid in the process of desistance for this population, and whether the process differs for various subgroups. For instance, the extent to which one of Fergus and Zimmerman's (2005) three models of resiliency (compensatory, protective, and challenging) best explain desistance, or is whether some other model of resilience is needed to describe desistance remains unknown. For example, is desistance/resilience something that occurs because of a particular event or specific protective factor? Or alternatively, is it more like a slow process by which individuals gradually develop coping mechanisms that help them to refrain from re-offending? For instance, the influence that peers and family have on desistance still needs to be explored.

This study currently stands alone by virtue of the absence of research on SPJ assessments, strength based risk assessments, gender comparisons in risk measures, and integrated risk/protective factor assessments in civil psychiatric samples. Results from this study add to the growing body of literature on protective factors and their added utility to risk assessment measures and ultimately enhanced therapeutic interventions. The use of strength based risk assessments with civil psychiatric populations was generally supported. Our findings suggest a balanced evaluation of clients' protective and risk factors for assessments of violence. In this regard, the SAPROF (in conjunction with HCR-20) and START each provides practitioners with a useful tool to assess patient strengths and vulnerabilities that can help to inform treatment planning and management.

Given the elevated rate of offending (e.g., Douglas et al., 2006; Linhorst, & Scott, 2004; Tengström & Hodgins, 2002) and the marginalized lifestyles (homelessness, victimization, poverty, substance misuse) of many severely mentally ill individuals relative to the general population (e.g., Fazel et al., 2009a; Nicholls et al., 2006; Salkow, & Fichter, 2003), having measures that can accurately assess for these negative outcomes, can be invaluable to clinicians working with this population. Furthermore,

balanced risk assessment measures can help identify gaps in and avenues for fostering success, which can serve to initiate preventative intervention strategies thus reducing re-offending.

4.3. Limitations

Our findings should be considered with several limitations in mind. Firstly, this study was conducted using mixed data collection methods. Specifically, a subsection of the sample's (22.5%) data was collected retrospectively due to those participants having been transferred out of Riverview Hospital before this study was initiated. Another subset of participants were denied assent by their psychiatrist for interview due to the instability of their mental health and therefore the data for these participants was collected using file review of their charts only (54.9%). Further, the SAPROF was only added to the study protocol after baseline data collection was completed and participants had been transferred to community-based care facilities, thus this measure was coded using only file review. Although previous research has found that file review is a viable means of collecting data for the study of risk assessment (see Douglas, Guy, & Weir, 2006; Nicholls et al., 2006), this methodology has some drawbacks. There is often varying degrees of information available in files, this may be particularly true of documented information pertaining to protective factors. Therefore, there may be some information that could be potentially relevant but which is simply not in the files. This limitation is particularly relevant to the coding of the START and SAPROF as strengths/protective factor information is necessary for the coding of these two measures.

Secondly, although best efforts were made to keep raters blind to outcomes of each participant when coding the SAPROF, due to limited resources, availability of RAs, and the nature of the data collection methods of the larger project it was not always possible to ensure that the RA who completed the follow-up data collection was different to the RA coding the SAPROF. In order to examine the possible effect of this limitation a selection of the analyses was repeated with 13 participants removed that were coded by an RA who had completed the outcome data collection prior to coding the SAPROF. The

results of these analyses showed that the results did not differ that much from the main analyses, and in fact some of the AUCs actually improved without these 13 participants.

Third, we obtained moderate Inter-rater reliability for the START strength and vulnerability scales and poor Inter-rater reliability for the START VRJ. Although we achieved good reliability when the two outliers were removed for the total scores on the strength and vulnerability scales, the START VRJ Inter-rater reliability remained poor. The exact reason for the outliers remains unclear, though it was noted that these two cases were coded using file only and were both female participants. It is possible that there was vague or insufficient information in these files resulting in differing scores.

Fourth, we only have two follow-up time periods, of six months in length with a total of 12 months. Multiple time frames, would allow for a more in depth analysis of the trajectories of aggression. Further, the HCR-20 and SAPROF are intended for long-term violence assessment and the START is intended for short-term violence assessment. Thus, if multiple time frames were utilised we could examine if the HCR-20 and SAPROF predictive validity improves and the START predictive validity declines.

Fifth, we only had baseline assessments for each risk measure. Therefore, we were unable to examine changes in scores overtime or the change in specific items, such as the dynamic items. In particular, the START is intended for short-term prediction of negative outcomes, and is made up entirely of dynamic items. The SAPROF and HCR-20 are not entirely made up of dynamic factors, however they both include dynamic items. These analyses would be important for the examination of construct validity of each of the measures in this study.

Finally, we also had a relatively small sample size, but there was very minimal attrition over the two follow-up periods. We had no attrition the first follow-up, with sample size of 102, and minimal attrition by the second follow-up with a sample of 100. Further, we did not have equal sample sized for each gender, we had 40 female participants and 60 male participants. Although these sample sizes are comparable, the gender results might be particularly vulnerable to this limitation because the female sample had 20 less participants than the males. Additionally, logistic regression is particularly vulnerable to sample size issues, especially when there is not an equal

division of cases with regard to the outcome variable of interest, which is the case in our study. Thus, caution is warranted before making strong conclusions based on our results.

4.4. Recommendations for Future Research

The literature on the use of protective factors in the assessment of risk for future violence in civil psychiatric patients is still in the early stages, and as such there is still much to be clarified. In particular, this is the first investigation of the validity and reliability of the SAPROF in a North American sample as well as the first investigation of the SAPROF in a civil psychiatric sample. Future studies still need to be completed examining the utility of the SAPROF within other populations within North America (e.g., forensic psychiatric patients and correctional samples).

More research is also needed to determine whether certain protective factors are more important than others, or whether there is merely an additive effect of having more protective factors than risk factors. Further, identifying additional protective factors that are predictive of success in the community can help to enhance risk assessment tools and make them more effective in clinical practice. Our findings regarding the added utility of the integrated risk judgments over the actuarial assessments also need to be further examined. In particular it will be interesting to see which items are influencing clinical decision making, and also if these differ by gender.

There is also a need for replication studies with, larger sample sizes, and for studies using consistent and varied data collection methods. Specifically, more studies are needed using interview methods, preferably prospectively and in combination with collaborative data from multiple sources. Collateral interviews with friends or family members may be particularly enlightening as this information was particularly sparse in the files.

Research with longer Follow-up periods, multiple time frames, and multiple assessments at each Follow-up are needed in order to explore construct validity of these

risk assessment measures. Additionally, these types of studies could examine the trajectory of violence perpetration as well as the change in dynamic variables.

Lastly, more research that directly compares male and female populations on protective factors will help to clarify the protective factors that are influential in future desistence of perpetration of aggression for vulnerable and at risk populations of women (patients/offenders). This kind of research would be particularly important given the poor predictive validity of future verbal and physical aggression of the SAPROF with the female patients in this sample. It would be imperative to identify if there are any protective factors unique to women or that differ from their male counterparts and that might improve this measure's utility with female patients.

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Appendix A. Selected Repeated Analyses

Table A1.   Predictive Validity (AUC) of SAPROF Total Score without the 13 participants

Outcome	6 months[a]	12 months[b]
Violence	0.59	0.59
Physical Aggression	0.51	0.53
Verbal Aggression	0.56	0.59
Sexual Aggression	0.58	0.58
Serious physical aggression	0.47	0.56
Serious verbal aggression	0. 59	0.67**
Serious sexual aggression	0.69	0.55
Most Serious Incident Reported[c]	0.58	0.60
Most Serious Violent Only	0.52	0.58
Most Serious Sexual Only	0.71 [†]	0.70*

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. $n = 89$. [b]. $n = 87$. [c]. Including Physical and Sexual aggression

Table A2.   Predictive Validity (AUC) of SAPROF SPJ without the 13 participants

Outcome	6 months[a]	12 months[b]
Violence	0.51	0.56
Physical Aggression	0.44	0.50
Verbal Aggression	0.51	0.56
Sexual Aggression	0.52	0.54
Serious physical aggression	0.41	0.49
Serious verbal aggression	0.56	0.64*
Serious sexual aggression	0.67	0.55
Most Serious Incident Reported[c]	0.47	0.59
Most Serious Violence Only	0.43	0.55
Most Serious Sexual Only	0.61	0.62

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. $n = 89$. [b]. $n = 87$. [c]. Including Physical and Sexual aggression

Table A3. **Predictive Validity (AUC) of SAPROF SPJ 5 point without the 13 participants**

Outcome	6 months[a]	12 months[b]
Violence	0.56	0.55
Physical Aggression	0.47	0.48
Verbal Aggression	0.58	0.60
Sexual Aggression	0.53	0.53
Serious physical aggression	0.47	0.51
Serious verbal aggression	0.62 [†]	0.64[*]
Serious sexual aggression	0.67	0.52
Most Serious Incident Reported[c]	0.51	0.57
Most Serious Violence Only	0.48	0.54
Most Serious Sexual Only	0.59	0.60

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. $n = 89$. [b]. $n = 87$. [c]. Including Physical and Sexual aggression

Table A4. **Predictive Validity (AUC) of HCR-20 - SAPROF without the 13 participants**

Outcome	6 months[a]	12 months[b]
Violence	0.58	0.63[*]
Physical Aggression	0.53	0.59
Verbal Aggression	0.62 [†]	0.65[*]
Sexual Aggression	0.64[*]	0.65[*]
Serious physical aggression	0.46	0.56
Serious verbal aggression	0.56	0.67[**]
Serious sexual aggression	0.65	0.53
Most Serious Incident Reported[c]	0.58	0.63[*]
Most Serious Violence Only	0.53	0.63[*]
Most Serious Sexual Only	0.72[*]	0.73[**]

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. $n = 89$. [b]. $n = 87$. [c]. Including Physical and Sexual aggression

Table A5. **Predictive Validity (AUC) of Final Integrated Risk Judgment without the 13 participants**

Outcome	6 months[a]	12 months[b]
Violence	0.63*	0.63*
Physical Aggression	0.59	0.60[†]
Verbal Aggression	0.68**	0.66*
Sexual Aggression	0.57	0.60
Serious physical aggression	0.56	0.59
Serious verbal aggression	0.52	0.61[†]
Serious sexual aggression	0.68	0.61
Most Serious Incident Reported[c]	0.58	0.63*
Most Serious Violence Only	0.58	0.64*
Most Serious Sexual Only	0.54	0.61

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. $n = 89$. [b]. $n = 87$. [c]. Including Physical and Sexual aggression

Table A6. **Predictive Validity (AUC) of Final Integrated Risk Judgment 5-point without the 13 participants**

Outcome	6 months[a]	12 months[b]
Violence	0.66**	0.66**
Physical Aggression	0.63*	0.63*
Verbal Aggression	0.71***	0.68**
Sexual Aggression	0.59	0.61[†]
Serious physical aggression	0.60	0.63*
Serious verbal aggression	0.55	0.66**
Serious sexual aggression	0.69	0.59
Most Serious Incident Reported[c]	0.64*	0.70**
Most Serious Violence Only	0.65*	0.69**
Most Serious Sexual Only	0.52	0.63

Note. *** $p \leq 0.001$ level (2-tailed). ** $p \leq 0.01$ level (2-tailed). * $p \leq 0.05$ level (2-tailed). [†] $p \leq 0.1$ level (2-tailed). [a]. $n = 89$. [b]. $n = 87$. [c]. Including Physical and Sexual aggression

Appendix B.   Demographic Coding Form

Baseline Demographics and Risk Package (Interview)

FORM 1: DEMOGRAPHICS & PSYCHOSOCIAL PROFILE Instructions: Complete from file only		
1. Gender	☐ 1. Male ☐ 2. Female	
2. Age	_____ ☐ 99. Unknown	
3. Ethnicity:	☐ 1. Caucasian ☐ 2. First Nations ☐ 3. Asian ☐ 4. East Indian	☐ 5. Black ☐ 6. Hispanic ☐ 97. Other _____ ☐ 99. Unknown
4. Current marital status:	☐ 1. Single ☐ 2. Common law ☐ 3. Married ☐ 4. Separated	☐ 5. Divorced ☐ 6. Widowed ☐ 97. Other _____ ☐ 99. Unknown
5. Ever been married?	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
6. Education:	☐ 1. No schooling ☐ 2. 8th grade or less ☐ 3. 9th – 11th grades ☐ 4. High school (graduation or GED) ☐ 5. Technical or trade certificate	☐ 6. Some college/university ☐ 7. Diploma / Bachelor degree ☐ 8. Masters or PhD degree ☐ 97. Other _____ ☐ 99. Unknown
7. Children:	Number: _____ ☐ 0. None ☐ 99. Unknown	
8. Place of birth:	☐ 1. Canada ☐ 2. United States ☐ 3. South Asia ☐ 4. Asia Pacific ☐ 5. Middle-East	☐ 6. Europe ☐ 7. Latin America ☐ 97. Other _____ ☐ 99. Unknown
9. First Language:	☐ 1. English ☐ 2. French ☐ 3. Cantonese / Mandarin ☐ 4. Hindi ☐ 5. Spanish ☐ 6. Portuguese	☐ 7. Russian ☐ 8. Japanese ☐ 9. German ☐ 97. Other _____ ☐ 99. Unknown
10. Evidence of ESL	☐ 1. Yes ☐ 2. No	☐ 98. N/A ☐ 99. Unknown
11. **Citizenship:**	☐ 1. Canadian Citizen ☐ 2. Landed Immigrant ☐ 3. Refugee	☐ 97. Other _____ ☐ 99. Unknown
STATUS IN THE COMMUNITY - PRIOR TO INDEX HOSPITALIZATION		
12. Patient hospitalized since childhood /adolescence	☐ 0. No ☐ 1. Yes *If yes, skip to index hospitalization section*	

13. Did patient have a monthly income?	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	
14. If yes, income amount (per month):	☐ 1. Under $500 ☐ 2. $500- $999 ☐ 3. $1000-$1499 ☐ 4. $1500-$1999	☐ 5. $2000-$2499 ☐ 6. Over $2500 ☐ 98. N/A ☐ 99. Unknown
15. If yes, sources of income: *Check all that apply*	☐ 1. Welfare ☐ 2. Employment ☐ 3. Family Support ☐ 4. Employment Insurance ☐ 5. Pension (CPP, OAP, Disability/handicap, company)	☐ 6. Savings/Inheritance ☐ 7. WCB Benefits ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
16. Employed:	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	
17. If employed, Status:	☐ 1. Employed Full-time ☐ 2. Employed Part-time ☐ 3. Seasonal ☐ 4. Self-employed	☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
18. If employed, Occupation:	Code occupation from Occupation Classification System list _____ ☐ 98. N/A ☐ 99. Unknown	
19. If unemployed, Status: *check all that apply*	☐ 1. Welfare recipient ☐ 2. Disability pension recipient ☐ 3. Homemaker ☐ 4. Student ☐ 5. Retired ☐ 6. Hospitalized ☐ 7. Incarcerated	☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
20. Type of Residence:	☐ 1. At home (private house or apartment) ☐ 2. Inpatient of a psychiatric hospital or facility ☐ 3. Nursing or rest home ☐ 4. Supervised living arrangement ☐ 5. Residential treatment facility ☐ 6. Cooperative apartment ☐ 7. Boarding or rooming house / hotel ☐ 8. Homeless shelter ☐ 9. Homeless (on the street) ☐ 10. Jail or prison	☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
21. Living with:	☐ 1. Alone ☐ 2. Cohabitating w/partner/Common Law ☐ 3. Spouse ☐ 4. Parents ☐ 5. Friends ☐ 6. Relatives	☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
22. How long had they lived at this address?	Code # of months: _____	☐ 98. N/A ☐ 99. Unknown
INDEX HOSPITALIZATION (see Minimum Data Set for Mental Health (MDS-MS – CIHI govt. of On)		

23. Index admission date:	_____/_____/_____ ☐ 99. Unknown dd mm yy	
24. Referring institution:	_____ ☐ 98. N/A ☐ 99. Unknown City/province: _____	
25. Legal Status at Admission:	☐ 1. Voluntary ☐ 2. Involuntary ☐ 97. Other _____ ☐ 99. Unknown	
26. Current Legal Status	☐ 1. Voluntary ☐ 2. Involuntary ☐ 97. Other _____ ☐ 99. Unknown	
27. Reason(s) for index hospitalization (general): *Check all that apply*	☐ 1. Threat or danger to self ☐ 2. Threat or danger to others ☐ 3. Inability to care for self due to mental illness ☐ 4. Specific psychiatric symptoms (e.g., depressed, hallucinations, med side effects)	☐ 5. Problem with addiction/dependency ☐ 6. Aggressive / violent ☐ 7. Difficult to treat/medication not working ☐ 97. Other _____ ☐ 99. Unknown
28. Reason(s) for index hospitalization (specific): *Choose 4* *most prominent reasons* *Macarthur research protocol (see p. 5 of 64)*	☐ 1. Depression/Depressive symptoms ☐ 2. Suicide threat / Suicide ideation ☐ 3. Suicide attempt/ Self-harm ☐ 4. Mania symptoms ☐ 5. Increased anxiety ☐ 6. Paranoid symptoms ☐ 7. Delusions ☐ 8. Hallucinations ☐ 9. Bizarre behaviour ☐ 10. Increase in symptoms / decompensation ☐ 11. Unable to care for self ☐ 12. Medication, non-compliance ☐ 13. Medication change, adjustment, evaluation ☐ 14. Substance abuse / intoxication ☐ 15. Personal problem with work, family etc	☐ 16. Evaluation ☐ 17. Court order ☐ 18. Other non-violent / Non-aggressive behaviour ☐ 19. Aggression against property ☐ 20. Argument / Threat ☐ 21. Homicidal threat / Ideation ☐ 22. Object thrown ☐ 23. Push, grab ☐ 24. Slapping ☐ 25. Kicking, biting, choking ☐ 26. Hitting with fist / object ☐ 27. Sexually assaulting someone ☐ 28. Threatening with a lethal weapon ☐ 29. Using a gun or knife ☐ 30. Other violent/ aggressive behaviour ☐ 30a. Specify other violence / aggressive _____ ☐ 99. Unknown
29. Length of index hospitalization:	☐ 1. ≤ 1 week ☐ 2. One week to six months ☐ 3. Six months to one year ☐ 4. One- to two-years ☐ 5. >2 years	☐ 6. > 5 years ☐ 7. > 10 years ☐ 97. Other _____ ☐ 99. Unknown
30. Placed in seclusion within the past 6 months:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
31. If yes, number of seclusions:	Exact number (if known)_____	☐ 91. at least 1 ☐ 98. N/A ☐ 92. at least 2 ☐ 99. Unknown ☐ 93. >3

32. If yes, total minutes in seclusion:	_____ mins	☐ 98. N/A ☐ 99. Unknown
33. Number of days on leave:	_____	☐ 99. Unknown
34. Highest privilege level attained during the past 6 months:	☐ 1. Level 1 _____ ☐ 2. Level 2 _____ ☐ 3. Level 3 _____	☐ 4. Level 4 _____ ☐ 5. Level 5 _____ ☐ 99. Unknown _____ (explain)
35. Time since prior hospitalization (i.e. time in community prior to index hospitalization)	☐ 1. ≤ 1 week ☐ 2. One week to six months ☐ 3. Six months to one year ☐ 4. One- to two-years ☐ 5. >2 years	☐ 6. > 5 years ☐ 7. > 10 years ☐ 8. No prior hospitalization ☐ 99. Unknown

36. Previous mental hospitalizations

At RVH Hospital   ☐ 0. No   ☐ 1. Yes   ☐ 99. Unknown
At FPH Hospital   ☐ 0. No   ☐ 1. Yes   ☐ 99. Unknown
Other Hospital   ☐ 0. No   ☐ 1. Yes   ☐ 99. Unknown

_____ (name of other hospital 1) _____
(city/province/state)

_____ (name of other hospital 2) _____
(city/province/state)

_____ (name of other hospital 3) _____
(city/province/state)

37. DSM-IV Diagnoses

a) Admission Diagnoses

(Code admission diagnoses from admission card/psychiatrists' notes)

DIAGNOSTIC INFORMATION		
	DSM Code	Diagnosis
Admission Diagnoses		
1st Axis I		
2nd Axis I		
3rd Axis I		
1st Axis II		
2nd Axis II		
3rd Axis II		
1st Axis III		
2nd Axis III		
3rd Axis III		

Current Diagnoses	DSM Code	Diagnosis
1st Axis I		
2nd Axis I		
3rd Axis I		
1st Axis II		
2nd Axis II		
3rd Axis II		
1st Axis III		
2nd Axis III		
3rd Axis III		

b) Current Diagnoses (label appears to left of table)

38. Code the <u>most recent</u> GAF score from file over the past 6 months	Score: _____ Date of score: _____/_____/_____ □ 99. Not available in file **dd mm yy**
39. Current Medication(s) *check all that apply*	□ 1. Typical (1st generation) antipsychotics (e.g., Haloperidol, Thorazine) □ 2. Atypical (2nd generation) antipsychotics (e.g., Clozapine, Olanzapine, Risperidone) □ 3. Antidepressants □ 4. Mood stabilizers □ 5. Benzodiazepines □ 97. Other _____ □ 98. N/A □ 99. unknown
40a. Moved wards at RVH in last 6 months:	□ 0. No □ 1. Yes (If Yes, was it within the past month? □ 0. No □ 1. Yes) □ 99. Unknown
40b. Transfer Date	_____/_____/_____ □ Unknown dd mm yy
MENTAL HEALTH HISTORY	
41. Age of onset of mental illness:	a. _____yrs b. year _____ □ 98. N/A □ 99. Unknown
42. Age at first hospitalization:	a. _____yrs b. year _____ □ 98. N/A □ 99. Unknown
43. Age of first mental health contact:	a. Outpatient contact: _____ yrs □ 98. N/A □ 99. Unknown b. Inpatient contact: _____ yrs □ 98. N/A □ 99. Unknown
44. Reasons for first contact: *Check all that apply*	□1. Suicide □2. Violence □3. Self-neglect □4. Deterioration/mental state □5. Self-harm □ 6. Other _____ □ 98. N/A □ 99. Unknown

45. First Diagnosis	a.	☐ 0. No
		☐ 1. Yes
		☐ 2. Unknown
		
		(if 1 or 2 check all that apply →)
			c.-v.	☐ Schizophrenia Spectrum Disorder
				  ☐ Schizophrenia
				  ☐ Schizoaffective disorder
				  ☐ Delusional disorder
				  ☐ Psychosis NOS
				☐ Substance Induced Psychosis
				☐ Bipolar Disorder
				☐ Major Depressive Episode/Disorder
				☐ Neurotic Disorders
				  ☐ Anxiety Disorder
				  ☐ Adjustment Disorder
				  ☐ Post-Traumatic Stress Disorder
				  ☐ Obsessive-Compulsive Disorder
				  ☐ Somatization Disorder
				☐ Borderline Intelligence
				☐ Mental retardation (e.g., intellectually disabled, cognitively impaired)
				☐ Substance Use Disorder
				☐ Mental Disorder due to medical condition
				☐ Cognitive Impairment
				☐ Other (Specify)
				_____
				☐ 99. Unknown

	b.	☐ Definite/Confirmed ☐ Provisional		
46. First PD Diagnosis	a. **b.**	☐ 0. No ☐ 1. Trait/Indication of a Personality Disorder ☐ 2. Disorder ☐ 3. Unknown/Diagnosis deferred ☐ Definite/Confirmed ☐ Provisional	**c.-n.**	☐ Paranoid ☐ Schizoid ☐ Schizotypal ☐ Antisocial ☐ Borderline ☐ Histrionic ☐ Narcissistic ☐ Avoidant ☐ Dependent ☐ Obsessive-Compulsive ☐ Not Otherwise Specified (NOS) ☐ Other (Specify) _____ ☐ 99. Unknown
47. Type of previous psychiatric treatment (*Check all that apply*):		☐ 1. Medication ☐ 2. Psychoeducational ☐ 3. ECT		☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
48. Previously hospitalized in psychiatric hospital:		☐ 0. No ☐ 1. Yes ☐ 99. Unknown		
49. Number of prior psychiatric		☐ 1. at least 1		☐ 98. N/A

hospitalizations:	☐ 2. at least 2 ☐ 3. >3	☐ 99. Unknown
50. Ever hospitalized involuntarily:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
51. If previously received medication, specify type(s): (*Check all that apply*):	☐ 1. Typical (1st generation) antipsychotics (e.g., Haloperidol, Thorazine) ☐ 2. Atypical (2nd generation) antipsychotics (e.g., Clozapine, Olanzapine, Risperidone) ☐ 3. Antidepressants ☐ 4. Mood stabilizers ☐ 5. Benzodiazepines	☐ 97. Other ☐ 98. N/A ☐ 99. unknown
52. Lifetime history of self- harm (behaviours involving intentional injuring of own body without apparent suicide intent): * *Do not include (para) suicidal behaviours/ attempts*	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
53. Lifetime history of suicidal ideations:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
54. Lifetime history of suicidal behaviour:	☐ 0. None ☐ 1. Verbal Threat ☐ 2. Parasuicidal ☐ 3. Attempt ☐ 99. Unknown	
55. Ever on suicide watch/identified as suicide risk?	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
56. Number of prior suicide attempts:	☐ 1. at least 1 attempt ☐ 2. at least 2 attempts ☐ 3. >3 attempts	☐ 98. N/A ☐ 99. Unknown
SUBSTANCE ABUSE HISTORY		
57. Substance abuse history	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
58. Age at first substance use	a. Alcohol use _____ yrs ☐ 98. N/A ☐ 99. Unknown b. Drug use _____ yrs ☐ 98. N/A ☐ 99. Unknown c. Other (e.g., glue/prescription) _____ yrs ☐ 98. N/A ☐ 99. Unknown	
59. Length of time with substance use problem (regardless of remission periods)	1. _____ months or _____ years ☐ 98. N/A ☐ 99. Unknown	
60. Substance abuse 1- drug of choice	☐ 1. Alcohol ☐ 2. Cannabis ☐ 3. Cocaine ☐ 4. Opioids ☐ 5. Amphetamines	☐ 6. Hallucinogens ☐ 7. Sedatives/Hypnotics ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
61. Substance abuse 2 – *check all that apply*	☐ 1. Alcohol ☐ 2. Cannabis ☐ 3. Cocaine ☐ 4. Opioids	☐ 5. Amphetamines ☐ 6. Hallucinogens ☐ 7. Sedatives/Hypnotics ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown

62. Ever received formal substance abuse treatment	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	
62a. IF YES, specify type of treatment – *check all that apply*	☐ 1. AA/NA ☐ 2. Detox ☐ 3. Recovery house ☐ 4. Treatment centre	☐ 5. Native healing ☐ 6. Correctional ☐ 7. Community counselling ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown

MEDICAL HISTORY	

63. History of chronic or acute medical conditions	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
64. Communicable Disease:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
65. If yes to communicable disease, what type? *check all that apply*	☐ 1. HIV/AIDS ☐ 2. Hep A ☐ 3. Hep B ☐ 4. Hep C ☐ 5. TB ☐ 6. STD	☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
66. History of head injuries?	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	

FAMILY HISTORY (MacArthur)	

67. Lived with biological mother until 15	☐ 0. No (b. separated by death: Y / N) ☐ 1. Yes ☐ 99. Unknown	
67a. [If no] Record age of separation	Exact age _____ (yrs) ☐ 98. N/A ☐ 99. Unknown	
68. Lived with biological father until 15	☐ 0. No (b. separated by death: Y / N) ☐ 1. Yes ☐ 99. Unknown	
68a. [If no] Record age of separation	Exact age _____ (yrs) ☐ 98. N/A ☐ 99. Unknown	
69. Who raised participant?	☐ 1. Parents ☐ 2. Foster parents ☐ 3. Adoptive parents ☐ 4. Grandparents	☐ 5. Other family ☐ 6. Friends/Acquaintances ☐ 97. Other _____ ☐ 99. Unknown
70. Gender of primary surrogate caregiver? (if applicable)	☐ 1. Male ☐ 2. Female ☐ 98. N/A ☐ 99. Unknown	
71. Evidence of sexual abuse during childhood in file? Use file only.	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
72. Evidence of physical abuse during childhood in file? Use file only.	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
73. Evidence of neglect during childhood in file? Use file only.	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	
74. Start age of abuse/neglect. Use file only.	1. _____ ☐ 98. N/A ☐ 99. Unknown	

75. Length of abuse/neglect. Use file only.	1. _____ ☐ 98. N/A ☐ 99. Unknown			
76. Perpetrator's relationship to participant *Check all that apply*	☐ 1. Father ☐ 2. Mother ☐ 3. Step-father (include mother's partner) ☐ 4. Step-mother (include father's partner) ☐ 5. Foster-father ☐ 6. Foster-mother ☐ 7. Uncle ☐ 8. Aunt		☐ 9. Grandfather ☐10. Grandmother ☐ 11. Cousin ☐ 12. Stranger ☐ 13. Brother/sister ☐. 97 Other _____ ☐ 98. N/A. ☐ 99. Unknown	

BIOLOGICAL PARENT INFORMATION		**Mother**		**Father**
Major Mental Illness	**77.**	☐ 0.No ☐ 1.Yes ☐ 99.Unknown	**83.**	☐ 0.No ☐1.Yes ☐ 99.Unknown
If yes, most serious type of Diagnosis	**78.**	☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder ☐ 5. Personality disorder ☐ 6. Psychosis (delusional) ☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown	**84.**	☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder ☐ 5. Personality disorder ☐ 6. Psychosis (delusional) ☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
Criminal Charges/ Convictions (Macarthur page 32)	**79.**	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	**85.**	☐ 0. No ☐ 1.Yes ☐ 99. Unknown
Substance Abuse	**80.a**	Alcohol abuse: ☐ 0. No ☐ 1. Yes ☐ 99. Unknown	**86.a**	Alcohol abuse: ☐ 0. No ☐ 1. Yes ☐ 99. Unknown
	80.b	Drug abuse: ☐ 0. No ☐ 1. Yes ☐ 99. Unknown	**86.b**	Drug abuse: ☐ 0. No ☐ 1. Yes ☐ 99. Unknown
Spousal Abuse (Violence toward other partner)	**81.**	☐ 0. No ☐ 1. Yes ☐ 99. Unknown	**87.**	☐ 0. No ☐ 1. Yes ☐ 99. Unknown
Major Medical Illness	**82.**	☐ 0. No ☐ 1.Yes ☐ 99. Unknown	**88.**	☐ 0. No ☐ 1. Yes ☐ 99. Unknown

Primary Surrogate Caregiver Information		**Female**		**Male**
Major Mental Illness	**89.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	**95.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown
If yes, most serious type of Diagnosis	**90.**	☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder	**96.**	☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder

		☐ 5. Personality disorder ☐ 6. Psychosis (delusional) ☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown		☐ 5. Personality disorder ☐ 6. Psychosis (delusional) ☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
Criminal Charges/ Convictions (e.g. property crimes) MacArthur page 32)	**91.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	**97.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown
Substance Abuse	**92.a**	Alcohol abuse: ☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	**98.a**	Alcohol abuse: ☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown
	92.b	Drug abuse: ☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	**98.b**	Drug abuse: ☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown
Spousal Abuse (Violence toward other)	**93.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	**99.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown
Major Medical Illness	**94.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown	**100.**	☐ 0. No ☐ 1. Yes ☐ 98. N/A ☐ 99. Unknown

Siblings and extended family mental health history				
101. Number of siblings:		_____ ☐ 0. None		☐ 99. Unknown
102. Brother(s) or sister(s) with mental health problems?		☐ 0. No ☐ 1.Yes ☐ 98. N/A ☐ 99. Unknown		
103. Sibling 1: **If yes, primary Diagnosis**		☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder ☐ 5. Personality disorder/traits ☐ 6. Psychosis (delusional)		☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
104. Sibling 2: **If yes, primary Diagnosis**		☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder ☐ 5. Personality disorder/traits ☐ 6. Psychosis (delusional)		☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
105. Sibling 3: **If yes, primary Diagnosis**		☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder ☐ 5. Personality disorder/traits ☐ 6. Psychosis (delusional)		☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A ☐ 99. Unknown
106. Sibling 4: **If yes, primary Diagnosis**		☐ 1. Schizophrenia ☐ 2. Depression ☐ 3. Bipolar disorder ☐ 4. Substance abuse disorder ☐ 5. Personality disorder/traits		☐ 7. Mental disorder due to general medical condition ☐ 97. Other _____ ☐ 98. N/A

	☐ 6. Psychosis (delusional) ☐ 99. Unknown
107. Extended family diagnosed with mental disorder?	☐ 0. No ☐ 1.Yes ☐ 99. Unknown

ADULT CRIMINAL ACTIVITY (from form 6 of tracking study)

108. Charged as an Adult:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown
109. Number of Charges:	☐ 1. at least 1 ☐ 2. at least 2 ☐ 3. >3 ☐ 98. N/A ☐ 99. Unknown
110. Number of Violent charges:	☐ 1. at least 1 ☐ 2. at least 2 ☐ 3. >3 ☐ 98. N/A ☐ 99. Unknown
List 4 most serious charges and code type from UCR files (using 4 digit code):	111. (write out charges or note N/A): _____ _____ _____ 112._____ ☐ 98. N/A ☐ 99. Unknown 113._____ ☐ 98. N/A ☐ 99. Unknown 114.._____ ☐ 98. N/A ☐ 99. Unknown 115._____ ☐ 98. N/A ☐ 99. Unknown
116. Convicted as an Adult:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown
117. Age at first conviction:	1. _____ yrs ☐ 98. N/A ☐ 99. Unknown
118. Number of convictions:	☐ 1. at least 1 ☐ 2. at least 2 ☐ 3. >3 ☐ 98. N/A ☐ 99. Unknown
119. Violent conviction(s) as an Adult:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown

120. Number of violent convictions:	☐ 1. at least 1 ☐ 2. at least 2 ☐ 3. >3	☐ 98. N/A ☐ 99. Unknown

121. Most serious conviction: (UCR files)	4 digit code from Uniform Crime Reporting (UCR) ☐ 98. N/A ☐ 99. Unknown _____
122. Incarcerated as an Adult:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown
123. Number of incarcerations:	☐ 1. at least 1 ☐ 2. at least 2 ☐ 3. >3 ☐ 98. N/A ☐ 99. Unknown
124. Previously found NCRMD:	☐ 0. No ☐ 1. Yes ☐ 99. Unknown
125. Previously found Unfit to Stand Trial	☐ 0. No ☐ 1. Yes ☐ 99. Unknown

Appendix C.   START Interview

* Code for last 6 months

A. START Items

1. SOCIAL SKILLS

1. How are you doing [*on this ward, in this hospital, in this half-way house, etc.*]?
    _____
    _____
    _____

2. What kinds of activities are you involved with day-to-day?
    _____
    _____
    _____

3. Do you usually prefer to be around other people or do you prefer to be by yourself (e.g. are you a loner, or sociable, and outgoing)? Has this been the case over the past six months? (*also relevant to relationships*)
    _____
    _____
    _____

4. How do you think other people [staff, other patients, or your family] would describe you (e.g., polite/impolite; friendly/shy)? (*also relevant to relationships*). *Coding should also reflect the individual's behaviour in the interview.*
    _____
    _____

    _____Would you say that you have made active attempts to get along with others during the past six months? (*also relevant to relationships*)
                            Y / N / RF / DK
    - *Clarify*: How have things been since the client entered the current environment? How have they been the past six months?
    - *Coding should also reflect the individual's behaviour in the interview.*
    _____
    _____
    _____

    INTERVIEWER: If historical information needed to determine whether *social skills* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., *what kinds of activities are you usually involved in; have you ever…*)
    _____
    _____
    _____

2. RELATIONSHIPS

5. Are there people here that you get along with well (patients, staff)?   Y / N / RF / DK

- People that you would consider friends?   Y / N / RF / DK
- Why are they your friends? (*also relevant to social support*)

_____
_____
_____

6.   How have you been getting along with your family in the last six months or so? What is it that you value about your family?

_____
_____
_____

7.   Is it important for you to have relationships with others?   Y / N / RF / DK
Why?

_____
_____
_____

8.   In the last six months, have other people:
Hurt you physically?   Y / N / RF / DK
Hurt you emotionally?   Y / N / RF / DK
Manipulated you (e.g., taken advantage of you)?   Y / N / RF / DK

(If yes to any of above) What happened? What types of people are difficult for you to be around? (*also relevant to Victimization*)

_____
_____
_____

9.   What about you? In the last six months have you:
Hurt anyone physically?   Y / N / RF / DK
Hurt anyone emotionally?   Y / N / RF / DK
Manipulated anyone (e.g., taken advantage of someone)?   Y / N / RF / DK
(If yes to any of above) What happened? Who/What types of people do you do this to you? Why? (*also relevant to insight, external triggers, conduct, attitudes*)

_____
_____
_____

10.   Do you feel valued/appreciated by your friends, family, partner?   Y / N / RF / DK
11.   Do you feel that others take advantage of you?   Y / N / RF / DK
(If yes) Could you tell me about any instances of these that happened within the past six months or so? (*also relevant to attitudes; external triggers*)

_____
_____
_____

12.   Do you believe your treatment team has your best interests in mind? Are there staff here that you feel you could go to if you had a problem or needed help? (*also relevant to social support, attitudes*)
Y / N / RF / DK

_____
_____
_____

13. Has there been a care provider or mental health professional with whom you felt you had a good relationship within the past six months?

     Y / N / RF / DK

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *relationships* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., *Has it always been this way? Does this happen in other relationship? Have you ever…*)

_____
_____
_____

3. OCCUPATIONAL

14. Have you been involved with any institutional/hospital programs related to educational upgrading and/or learning job skills during the past six months? (*also relevant to treatability*)   Y / N / RF / DK
(If yes)   What do you like/dislike about being involved in these programs?   Y / N / RF / DK

    Do you find it difficult (e.g., need a lot of help to get your work assignments done)?   Y / N / RF / DK

How do you think program staff would describe your performance in [*insert program name*]? Do you attend regularly, show up on time, and participate appropriately, for instance?

_____
_____
_____

15. *If the individual has not participated in educational/vocational programs:* Do you think you need educational upgrading or job skills training?
    Y / N / RF / DK
(If yes) Have you looked into what programs are available and what preparation you would need to do for them within the past six months? (*also relevant to treatability and plans*)
    Y / N / RF / DK

_____
_____
_____

16. Is having a job/going to school important to you?   Y / N / RF / DK

17. Is there any job that you would like to do?   Y / N / RF / DK
(If yes) Have you looked into what skills or training you would need to do this [within the past six months]? (*also relevant to plans*)
    Y / N / RF / DK

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *occupational* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

4. RECREATIONAL
18. What sorts of things do you like to do to relax or have fun?

_____
_____
_____

19. What have you been doing during your free time over the past six months?

_____
_____
_____

20. Have you been involved in any ward-based recreational activities within the past six months? (*also relevant to treatability*)
     Y / N / RF / DK
     (If yes) Do you enjoy being involved in these activities?   Y / N / RF / DK

21. Have you been getting exercise over the past six months? (*also relevant to self-care*)   Y / N / RF / DK

22. Do you have any interests or hobbies?   Y / N / RF / DK
     (If yes) Have you been participating in these things over the past six months?   Y / N / RF / DK

INTERVIEWER: If historical information needed to determine whether *recreational* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., *How active are you generally/in the community?*)

_____
_____
_____

5. SELF-CARE [also use for coding Risk Estimate - SELF-NEGLECT]
23. How have you been sleeping in the last six months? [more/less than usual; too little? too much?]

     _____
          Do you sleep through most nights?   Y / N / RF / DK
          Do you require any medications to help you sleep?   Y / N / RF / DK
24. Have you been eating healthy meals for the most part within the past six months?   Y / N / RF / DK
     Can you give me an example of what you eat on a typical day?

_____
_____

25. Have you been able to keep yourself clean (i.e., taking showers, changing clothes regularly) within the past six months?
     Y / N / RF / DK
     How about your personal living space, do you keep tidy and clean?   Y / N / RF / DK

Do you need assistance with these tasks, reminders or help?   Y / N / RF / DK
26. Has anyone complained to you about your hygiene within the past six months?   Y / N / RF / DK
27. Do you care about your appearance and/or the appearance of your living space   Y / N / RF / DK
28. Do you feel good when you look good? When your room is tidy and clean?   Y / N / RF / DK

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *self-care* is a "key" or "critical" item (or whether there is a historical basis for the *self-neglect* risk estimate) is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

6. MENTAL STATE and 17. INSIGHT
- *Code based on behaviour in the interview as well as file information and self-report*

29. Do you know if the doctors or nurses here think you have a mental illness?   Y / N / RF / DK
30. Do you think you have a mental illness?   Y / N / RF / DK

31. What mental illness do they say you have? _____ _____   RF/ DK
32. Do you agree with their diagnosis?   Y / N / RF / DK

Why/why not? What does your diagnosis or mental illness mean to you?

_____
_____
_____

33. Does your mental illness have any impact on your relationships?   Y / N / RF / DK

(If yes) How so? (*also relevant to social skills, relationships, social support*)

_____
_____
_____

34. What kinds of symptoms do you generally experience? Within the past six months have you had these experiences?:

Have you heard voices or sounds when other people are not in the room?   Y / N / RF / DK

(If yes) What sorts of things? What do they say/sound like? (hallucinations)

_____

What about seeing things that others do not see or smelling things that others do not smell?   Y / N / RF / DK

_____
_____
_____

35. When was the last time you had symptoms? (Best estimate): _____ _____   RF / DK

115

36. Is there anyone who is out to get you or plotting to harm you in some way?   Y / N / RF
      / DK

_____
_____
_____

37.   Do you feel like your condition is under control?   Y / N / RF
      / DK

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *mental state* and/or *insight* is a "key" or "critical"
item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

7. EMOTIONAL STATE [also use to code risk estimates SELF-HARM and SUICIDE]

38. How would you generally describe your mood
      lately?_____

39. Have you felt sad, blue, or depressed in the last 6 months?   Y / N / RF
      / DK
      Have you been feeling irritable? Or angry?   Y / N / RF
/ DK
      Unusually happy?   Y / N / RF
      / DK
      Other _____   Do you usually feel this way?   Y / N / RF / DK

40. Have you felt like life wasn't worth living, that things are hopeless over the past six months?   Y / N / RF
      / DK
41. Have you ever felt so down in the past six months that you:
         1) hurt yourself (without intending to kill yourself)?   Y / N / RF
/ DK
         2) tried to kill yourself?   Y / N / RF
/ DK
      # of times _____
      Can you tell me briefly what you did?

_____
_____
_____
      What was the outcome of the incident (e.g., were you taken to hospital, if an inpatient, were you put on special
      observation or in the side room to keep you safe?)

_____
_____
_____

42. Would you say that you usually expect things to turn out well or do you often expect the worst? Are you
      pessimistic or are you hopeful/optimistic?

_____
_____
_____

43. Do you think you have a good sense of humour? Do other people ever tell you that you are funny?

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *emotional state* is a "key" or "critical" item (or whether there is a historical basis for the *self-harm* and *suicide* risk estimates) is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

8. SUBSTANCE USE [also use to code risk estimate SUBSTANCE ABUSE]

44. In the past 6 months, have you:
     Had any alcohol to drink?   Y / N / RF / DK
      (If yes)   # of times _____   RF / DK
               Did use ever result in impairment?   Y / N / RF / DK

    Used any drugs?   Y / N / RF / DK
      (If yes)   Type(s) _____   RF / DK
               # of times _____   RF / DK
               Did use ever result in impairment?   Y / N / RF / DK

    Misused prescription medications?   Y / N / RF / DK
      (If yes)   # of times _____   RF / DK
               Did use ever result in impairment?   Y / N / RF / DK

45. Have drugs and alcohol been problematic for you?   Y / N / RF / DK
     Have others told you that drugs or alcohol are a problem for you?   Y / N / RF / DK
     Does it interfere with your medications?   Y / N / RF / DK

46. Has your substance use lead to you doing anything you later regretted? (*also relevant to insight*)   Y / N / RF / DK

_____
_____
_____

47. Are you more likely to behave aggressively or violently when you are using substances or immediately after? Y / N / RF / DK

48. Alternatively, are you at risk to hurt yourself?   Y / N / RF / DK
     If appropriate: Did substance abuse play a role in your index offence (or why you were brought to the hospital)?

_____
_____
_____

49. Have you participated in any treatment over the last 6 months for your drug or alcohol use (*also relevant to treatability*)?

☐ None ☐ Drug treatment ☐ Alcohol treatment

(If yes) How is treatment going? _____

(If no) Do you want to be in treatment? Y / N / RF / DK

_____

_____

_____

INTERVIEWER: If historical information needed to determine whether *substance use* is a "key" or "critical" item (or whether there is a historical basis for the *substance abuse* risk estimate) is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____

_____

_____

9. IMPULSE CONTROL

50. Would you say that you usually think things through before acting or do you often act without considering the possible consequences? How about in the last six months?

_____

_____

_____

51. Do you like to do things that are exciting or even a little bit dangerous? Y / N / RF / DK

_____

_____

_____

52. Do people describe you as a risk taker? Y / N / RF / DK

As impulsive? Y / N / RF / DK

53. Do you do things on the spur of the moment? Y / N / RF / DK

(If yes) How often? _____

54. Do you sometimes wish you hadn't acted rashly or wonder why you did something (e.g., spend more money than you intended to? take off on a day leave and not come back?)

Y / N / RF / DK

55. Do you tend to get upset when things don't go your way? Y / N / RF / DK

(If yes) Has this happened in the last 6 months? How did you react?

_____

_____

_____

56. Has your impulsive behaviour gotten you into trouble (e.g., contact with the police?; loss of privileges on the ward; relationship problems) in the last six months?

Y / N / RF / DK

_____

_____

_____

INTERVIEWER: If historical information needed to determine whether *impulse control* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

10. EXTERNAL TRIGGERS

57. Would you say that you are easily influenced by other people?   Y / N / RF / DK

What about to do inappropriate or illegal things?   Y / N / RF / DK

(If yes) Has this happened in the last 6 months?   Y / N / RF / DK

_____
_____
_____

58. Would you say that you are more likely to get into trouble if you are around certain people, or under the influence of drugs/alcohol? Has this been a problem recently?

_____
_____
_____

59. Do you try to avoid [_____] (substances, victims, unhealthy environments)?   Y / N / RF / DK

If you are unable to avoid [_____], how do you deal with these things? (*also relevant to coping, insight*)

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *external triggers* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

19. COPING

60. This type of setting can sometimes be stressful for people how have you been finding it here?

_____
_____
_____

61. What types of situations do you find stressful? (*also relevant to external triggers*) Are there any specific contexts that are problematic for you (**Interviewer**: If appropriate query regarding access to substances, specific victim groups)?

_____
_____
_____

62. In general, how well do you believe that you handle stressful situations?

_____
_____
_____

63. Would you say that you are a good problem solver?   Y / N / RF / DK

What would your family or treatment team say about your problem solving skills?

_____
_____
_____
64. Are there any techniques or methods you use to help you cope with difficult situations?   Y / N / RF
    / DK
    (If yes) What do you find helpful; what are these?

_____
_____
_____
65. Have you experienced any stressful events/periods during the past six months?   Y / N / RF
    / DK
    (If yes) What happened? How did you deal with this?

_____
_____
_____
66. When you experience a stressful or difficult situation, is there anyone you go to for assistance/guidance? (*also
    relevant to social support*)
        Y / N / RF / DK
    (If yes) Have you done this within the past six months?

_____
_____
_____
INTERVIEWER: If historical information needed to determine whether *coping* is a "key" or "critical" item is unavailable
in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

11. SOCIAL SUPPORT

67. Do you have friends or family that you can rely on [*here or in the community*]?   Y / N / RF
    / DK
    (If yes):
    Have [_____] provided you with support over the last 6 months?   Y / N / RF
    / DK
    (If yes) What kind of support (i.e., emotional, financial, etc.) _____
        Does [_____] have any problems with the law/substances?   Y / N / RF
/ DK
        Do you feel close to [_____]?   Y / N / RF
/ DK
        Do you trust them?   Y / N / RF
/ DK

_____
_____
_____
68. Are there professionals on whom you feel that you can rely? (*also relevant to therapeutic alliance)*   Y / N / RF
    / DK
69. Do you feel like you need the support of friends/family? Do you benefit from their assistance?   Y / N / RF
    / DK
70. Do you feel like you need the support of professionals? Do you benefit from their assistance?   Y / N / RF
    / DK

INTERVIEWER: If historical information needed to determine whether *social support* is a "key" or "critical" item is
unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

12. MATERIAL RESOURCES

71. Do you have enough money to support yourself and cover your basic needs (food, shelter, clothing)?   Y / N / RF / DK

Do you have some money left over to enjoy some recreational activities?   Y / N / RF / DK

72. Where do you get money from [e.g., job, government support, family, etc.]?
_____
_____
_____

73. Do you have any debts, or owe anyone money?   Y / N / RF / DK

74. Are you able to manage your money, or do you tend to spend it as soon as you get it?
_____
_____
_____

75. Have you spent more money than you could afford over the last 6 months?   ]Y / N / RF / DK
_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *material resources* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)
_____
_____
_____

13. ATTITUDES

76. Are you satisfied with your life so far?   Y / N / RF / DK
    Why/why not?
_____
_____
_____

77. On a scale from 1-10, how would you rate yourself?
_____

78. Looking back, is there anything you would change or do differently?   Y / N / RF / DK
_____
_____
_____

79. Have you done anything that you are particularly proud of or that other people recognize as an accomplishment?
Y / N / RF / DK
_____
_____
_____

80. (If applicable) how do you feel about your past crimes/violence?

_____
_____
_____

81.   (If applicable) What effect do you think your crimes/violence have had on the victims?

_____
_____
_____

82.   How do you feel about the staff here? Co-patients? (*also relevant to relationships*)

_____
_____
_____

83.   Do you feel that coming to RVH [*being in this facility*] was the right decision?   Y / N / RF
      / DK
      Why/why not?

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *attitudes* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

14. MEDICATION ADHERENCE

84.   Do you take any medications for your mental health problems?   Y / N / RF
      / DK
      (If yes) Why do you take this medication? How does it help you? (*also relevant to insight and treatability*)

_____
_____
_____

      How do you feel? Are there any negative side effects to the medications?

_____
_____
_____

      Do you take your medication orally? on a regular basis/as prescribed? (*also relevant to insight and treatability*)

_____
_____
_____

85.   Has there been a time over the past six months where you have stopped taking, or forgotten to take, your
      medications?
           Y / N / RF / DK
86.   Are there any medications that your treatment team have recommended you take over the past six months, that
      you have chosen not to take?
           Y / N / RF / DK
      What was the reason for your decision?

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *medication adherence* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

15. RULE ADHERENCE

87. What do you think about the rules here [*the ward, hospital, half-way house etc.*]?

_____
_____
_____

88. Why do you think these rules are in place? Is it good to have rules? (*also relevant to attitudes*)

_____
_____
_____

89. Do you generally follow the rules? Have you followed them in the last six months? (*also relevant to attitudes and conduct*)

<div align="right">Y / N / RF</div>
<div align="right">/ DK</div>

(If no) What rules did you not follow? Why did you not follow them?

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *rule adherence* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

16. CONDUCT

90. Have you had any problems with other people (e.g., co-patients, staff, family) in the past six months? Y / N / RF / DK
    (If yes) What happened? What was the outcome?

_____
_____
_____

91. Over the past six months, have you spent any time in the side room, and/or lost or gained any privileges as a result of your behaviour? (*also relevant to rule adherence*)   Y / N / RF / DK

92. Has anyone commented positively or negatively on your behaviour/conduct in the past six months?   Y / N / RF / DK
    (If yes) What for?

_____
_____
_____

93. (If appropriate) In the past six months, have you had any contact with police? New charges? Institutional infractions?
        Y / N / RF / DK
94. How do you contribute to making this a pleasant place to be?

_____
_____
_____

95. Have you harmed yourself or others in the past six months?   Y / N / RF / DK

INTERVIEWER: If historical information needed to determine whether *conduct* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

18. PLANS

96. What are your goals for the future?

_____
_____
_____

97. Do you have any short-term plans?   Y / N / RF
    / DK
    (If yes) What are they?

_____
_____
_____

98. What about any plans over the longer-term?   Y / N / RF
    / DK
    (If yes) What are they?

_____
_____
_____

99. [For any short- or long-term plans identified] What things do you need to do to make this happen? Have you done any of those things? How long will it take? How likely is it that this will work out/happen? (relationships, occupational, recreational, material resources)

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *plans* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

20. TREATABILITY

100. (As appropriate) Other than the medications and programs for school or job training we talked about earlier, have you been involved in any other treatment programs within the past six months?   Y / N / RF / DK
    (If yes) What do you like/dislike about these programs?

_____
_____
_____

    How do you think staff would describe your performance in these programs?

_____
_____
_____

101. Are there any other treatment programs that you haven't been involved with over the past six months, that you would like to do?
    Y / N / RF / DK
    (If yes) What? Why have you not been able to become involved in this yet?

_____
_____
_____

102. Do you think treatment can help you, or is it something that you just have to get through? (*also relevant to insight and attitudes*)

_____
_____
_____

103. Has treatment helped you with your mental health condition?   Y / N / RF
    / DK
    (If yes) How so?

_____
_____
_____

INTERVIEWER: If historical information needed to determine whether *Treatability* is a "key" or "critical" item is unavailable in files, query the above questions in regard to lifetime history (i.e., have you ever…)

_____
_____
_____

21-22. CASE SPECIFIC ITEMS

104. Do you have any other concerns? Specifically, is there anything that we haven't discussed that you feel is important to your well-being and/or your treatment?

_____
_____
_____

105. In addition to the things that we've talked about already, do you have any other strengths or talents (e.g., artistic talent) that might be relevant to your mental health status and treatment?

_____
_____
_____

106. Similarly, are you facing any weaknesses, obstacles or vulnerabilities that we haven't discussed?

_____
_____
_____

B. Signature Risk Signs

107. A small number of people report behaviours that are <u>unique</u> to them before they become ill or offend. For instance, someone might put on a particular item of clothing when their symptoms are getting worse. Do you know of any signs that you demonstrate when your condition might be getting worse? (*also relevant to insight*)

_____
_____
_____

C. Specific Risk Estimates (Not addressed previously)

<u>VIOLENCE (adapt/omit questioning as appropriate based on information already obtained in the interview)</u>

<u>General:</u>

108. Do you have any history of committing physical aggression or violence against others?   Y / N /
    RF / DK

_____
_____
_____

109. Do you have any history of committing physical aggression against property (e.g., throwing objects; kicking/punching objects)?

Y / N / RF / DK

_____
_____
_____

110. Do you have any history of committing verbally aggressive behaviour against staff, co-patients or members of the public?

Y / N / RF / DK

_____
_____
_____

Sexual aggression:

111. Have you ever made any sexually inappropriate comments or statements to others? Y / N / RF / DK

    (If yes)   How many times? _____
                   To whom did you say those things?

_____
_____
_____

112. Have you ever threatened to sexually harm anyone? Y / N / RF / DK

    (If yes)   How many times? _____
                   Who did you threaten?

_____
_____
_____

113. Have you ever nonconsensually touched or harmed anyone sexually (without their permission)? Y / N / RF / DK

    (If yes)   How many times? _____
                   Who did you do this to?

_____
_____
_____

BEING VICTIMIZED (adapt/omit questioning as appropriate based on information already obtained in the interview)

114. Has anyone ever physically harmed you (or attempted to physically harm you)? Y / N / RF / DK

- As an adult (≥18 years) Y / N / RF / DK
- As a child (˛18 years) Y / N / RF / DK

    (If yes)   How many times _____
                   Was there a specific situation that caused someone to harm you? What was this?

_____
_____
_____

115. Was there substance abuse involved when you were victimized? Y / N / RF / DK

_____

_____

UNAUTHORIZED LEAVE

116. Have you ever left a facility (e.g., hospital) without the approval of your treatment team?   Y / N / RF
    / DK
    (If yes)   How many times? _____
                   For what reasons (e.g., to see family, substance use desire)?

_____
_____

_____

D. CURRENT MANAGEMENT MEASURES

117. Do you know your current privilege level?   Y / N / RF / DK
       Level _____
118. Do you feel this level is appropriate for your needs right now?   Y / N / RF / DK
    (If no) what do you feel your privilege level should be? _____
119. Do you foresee this level changing in the next 6 months?   Y / N / RF / DK

E. HEALTH CONCERNS/MEDICAL TESTS

120. Do you have any serious medical/health problems?   Y / N / RF / DK
    (If yes)   What are they?

_____
_____

_____

121. (If appropriate)   Are you on medication for the/these problem(s)?   Y / N / RF
    / DK

                  (If yes) Do you take them as prescribed?   Y / N / RF
         / DK

                  What about other treatment(s)?   Y / N / RF
                  / DK
                  (If yes) Are you following it as recommended?   Y / N / RF
         / DK

122. Have you had any recent medical tests or do you require any tests?   Y / N / RF
    / DK
123. Do you generally see a doctor or specialist as required?   Y / N / RF
    / DK
124. Have you ever left a medical condition unattended or not followed the recommended treatment?   Y / N / RF
    / DK

_____
_____

_____

F. RISK FORMULATION

125. How would you describe the circumstances that contributed to _____ [*your index offence/admission
    here/recent problems*]?

_____
_____

_____

126. More generally, I am interested in your thoughts about the factors which, recently or in the past, may have had a role in you engaging in behaviour that places your well-being or the well-being of others around you at risk. To clarify, what leads to you _____ [*being victimized, engaging in substance abuse, aggression to yourself or others*]?

_____

_____

_____

Appendix D.   HCR-20 & PCL:SV Interview

H8: Early Maladjustment

SAY: I'd like to ask you some questions about when you were young.

Did you like school when you were a child?   Y / N / DK / RF   [What did you like/dislike about it?]
_____
_____
_____

Did you find school boring?   Y / N / DK / RF
Did you have trouble paying attention?   Y / N / DK / RF
How would your teachers have described you?
_____
_____
_____

What kinds of grades did you get? ☐ Mostly As, Bs, and Cs   ☐ Mostly Ds, Es, and Fs   ☐ Mix of category 1 and 2
[Could you have done much better if you had tried harder?]
_____
_____
_____

Did you ever fail a grade? Y / N / DK / RF   **IF YES**: What grade(s)? _____   DK / RF
Why?
_____
_____
_____

How did you get along with other kids at school?
_____
_____
_____

Did you have any close friends (or were you a loner?)   Y / N / DK / RF

What was your attendance like at school?
_____
_____

How often did you skip out?   ☐ Never or infrequently   ☐ Sometimes; on occasion
          ☐ Often or frequently
Specify age/grade range: _____

What is the highest grade you completed? _____ **IF PARTICIPANT DID NOT GRADUATE**: Why did you not graduate? Have you obtained or have plans to complete your GED?
_____
_____

When you think back to that time before you were 12 years old, did you get into trouble at school for:

Cheating	Y / N / DK / RF	Fighting	Y / N / DK / RF
Disturbing the class	Y / N / DK / RF	Vandalism	Y / N / DK / RF
Being drunk/stoned at school	Y / N / DK / RF	Setting fires	Y / N / DK / RF
Stealing	Y / N / DK / RF	Plagiarism	Y / N / DK / RF

Were you ever suspended from school? Y / N / DK / RF
If YES:
What was the earliest age you were suspended? _____   DK / RF
How many times were you suspended (best estimate)?_____   DK / RF

Were you ever expelled from school? Y / N / DK / RF
If YES:
What was the earliest age you were expelled? _____   DK / RF
How many times were you expelled (best estimate)?_____   DK / RF
SAY: Now I'd like to ask you some questions about growing up, and your family.

Where did you grow up? _____

Were you raised by your natural parents?   Y / N / DK / RF   Until the age of 16?   Y / N / DK / RF

IF NO, ask if this was due to: Death of parent(s)   Y / N / DK / RF
                                        Abuse   Y / N / DK / RF   (specify

type(s)_____)

                                        Neglect   Y / N / DK / RF

_____
_____
_____

Did you ever live with anyone else (step/adoptive family, group home, etc.)?]   Y / N / DK / RF

Ask the next 5 questions about the primary parental home:

What was your home life like?
_____
_____
_____

How often did you break the rules at home (lie, run away, steal, etc.)? How were you punished?
_____
_____
_____

Do you have any brothers and sisters? [How did you get along with them?]
_____
_____
_____

How old were you when you left home (best estimate)? _____   DK / RF
Why did you leave? What did you do after leaving?
_____
_____
_____

Were you ever physically abused by anyone [else]?   Y / N / DK / RF
Were you ever sexually abused by anyone [else]?   Y / N / DK / RF
Have you ever been abused emotionally by anyone [else]?   Y / N / DK / RF

IF PARTICIPANT ANSWERS YES, FOR EACH APPLICABLE TYPE OF ABUSE, ASK:

If Physical Abuse:

By whom? _____
        DK / RF
Starting at what age (best estimate)? _____   DK / RF
For how long (number of years; best estimate): _____   DK / RF

If Sexual Abuse:

By whom? _____
        DK / RF
Starting at what age (best estimate)? _____   DK / RF
For how long (number of years; best estimate): _____   DK / RF

If Emotional Abuse:
By whom? _____
        DK / RF
Starting at what age? _____   DK / RF
For how long (number of years; best estimate): _____   DK / RF

H3. Relationship Instability

What is your relationship with your family like now? (**Read response options to participant**)

1 = Very Poor
2 = Quite Poor; Sometimes "OK"
3 = Moderately good; Usually "OK"
4 = Good
5 = Excellent

How often do you have contact with them? (**Read response options to participants**)

1 = Never
2 = Rarely; on occasion
3 = Sometimes
4 = Often
5 = Frequently

When was the last time you had contact with your family?   _____

How many close friends do you have? (Best estimate): _____   DK / RF
[How long have you known them? Do you keep in touch with them? What makes someone a "close friend"?]

_____
_____
_____

SAY: I'd like to switch topics now and ask you about your intimate relationships (meaning boyfriends/girlfriends; husbands/wives)

Have you ever had a long-term romantic relationship (6+ months)?   Y / N / DK / RF
Are you currently in a long-term romantic relationship?   Y / N / DK / RF

IF YES: How long have you been in your current relationship? _____   DK / RF

Ask the next questions about the longest or most recent relationship:

How long did the relationship last? [How old were you when it started?]
What was your partner like? [What did you like best about your partner?]

_____
_____
_____

Were you in love with your partner or was it more of a physical relationship?   ("in love:" Y / N / DK / RF)
Was the relationship stable?   Y / N / DK / RF
Did you argue much?   Y / N / DK / RF
Or <u>ever</u> have physical fights?   Y / N / DK / RF
Or separate and get back together?   Y / N / DK / RF
Why did the relationship end?

_____
_____
_____

How long did it take you to get over it? (Best estimate): _____
          DK / RF
Do you still keep in touch with your ex-partner?   Y / N / DK / RF

Have you ever been unfaithful to any of your partners?   Y / N / DK / RF
[How often? With how many different partners? Did your partner ever find out? How did your partner react?]

_____
_____
_____

Do you have any children?   Y / N / DK / RF
What about stepchildren?   Y / N / DK / RF

How is your relationship with your children? (**Read response options to participant**)
1 = Very Poor
2 = Quite Poor; Sometimes "OK"
3 = Moderately good; Usually "OK"
4 = Good
5 = Excellent

How often do you have contact with your children? (**Read response options to participants**)
1 = Never
2 = Rarely; on occasion
3 = Sometimes
4 = Often
5 = Frequently

When was the last time you saw or spoke to one of your children? (Best estimate): _____
          _____   DK / RF

H4: Employment Problems

SAY: A moment ago I was asking about your school history. Tell me about your work history.

What type of work have you done in the past?

_____
_____
_____

How many different jobs have you had (best estimate)? _____ DK / RF
What was your longest job (best estimate)? _____ DK / RF
What was the shortest (best estimate)? _____ DK / RF

IF THE PARTICIPANT HAS BEEN EMPLOYED AT SOME POINT IN THE PAST, ASK:
Are you a reliable employee? How would your bosses describe you? Are you a hard worker?
_____
_____
_____

How did you get along with your bosses?
_____
_____
_____

How did you get along with the other employees?
_____
_____
_____

Did you ever get into trouble at work for things like:
- Being late or absent   Y / N / DK / RF   IF YES: How many times (best estimate)? _____
  DK / RF
- Drinking on the job   Y / N / DK / RF   IF YES: How many times (best estimate)? _____
  DK / RF
- Using drugs on the job Y / N / DK / RF   IF YES: How many times (best estimate)? _____
  DK / RF
- Fighting at work   Y / N / DK / RF   IF YES: How many times (best estimate)? _____
  DK / RF
- Stealing from work or other workers Y / N / DK / RF IF YES: How many times (best estimate)?
  DK / RF

Ask the next 4 questions about his/her longest or most recent job:

- What was your position?
- How long did you work there?
- Did you enjoy that job? [Was it boring? How was the money?]
- Why did you leave that job? [Did you quit, or were you fired? Did you have another job lined up?]
_____
_____
_____

Have you ever been unemployed?   Y / N / DK / RF

How many times have you been unemployed? For how long? Were you looking for work? How seriously?
How did you support yourself?
_____
_____
_____

H6/C1/C2/C3/C5: Major Mental Illness /Lack of Insight/Negative Attitudes/Active Symptoms of Mental Illness/Unresponsive to Treatment

SAY: OK, I've asked you lots of questions about relationships and family. Now I'd like to ask you some questions about your health…

When was the first time you saw a psychiatrist or psychologist for mental health or emotional problems?
(Best <u>age</u> estimate): _____   DK / RF
What kinds of problems were you having?
_____
_____
_____

When did they start? (Best <u>age</u> estimate):_____   DK / RF
Do you know if the psychiatrist or psychologist gave you a diagnosis?   Y / N / DK / RF
If Yes, what? (best recollection):
_____   DK / RF

SAY: Now I'd like to ask you some more questions about how you are doing in here.

Do you know if the doctors or nurses here think you have a mental illness?   Y / N / DK / RF
What mental illness do they say you have? _____   DK / RF

Do you think you have a mental illness?   Y / N / DK / RF
Why/why not? What does your diagnosis or mental illness mean to you?
_____
_____
_____

When was the last time you had symptoms? (Best estimate): _____   DK / RF

Lately, has your condition been better or worse than usual?   Better / Worse / Same / DK / RF

What are the signs that your condition might be getting worse?
_____
_____
_____

Any of these recently?   Y / N / DK / RF
IF YES: Describe _____   DK / RF
          How recently (Best estimate, in days): _____   DK / RF

Are you upset or do you tend to get angry or sensitive about your mental illness?   Y / N / DK / RF
Do you know what medications you are on?   Y / N / DK / RF
Do these medications help you?   Y / N / DK / RF
What kind of risks do you think would occur if you stopped your medications?
_____
_____
_____

What are the signs that your condition might be getting worse?
_____
_____
_____

Do you consider your mental health condition to be a problem in your life, generally?   Y / N / DK / RF
_____
_____
_____

How have your mental health problems affected your life (family, friends, relationships, work, school)?

_____

_____

_____

Do you think that you have control over your mental health condition?   Y / N / DK / RF

What about your behaviour generally?   Y / N / DK / RF

_____

_____

_____

Do you think your mental health problems are part of the reason you have acted aggressively/violently (or other categories) in the past?   Y / N / DK / RF

Ever tried to stop it? _____

When was the last time you were really angry? (Best estimate): _____   DK / RF

Do people tell you that you have a bad temper?   Y / N / DK / RF

[What kinds of things get you really angry? What do you do when you are angry?]

_____

_____

_____

How have your mental health problems affected your life (family, friends, relationships, work, school)?

_____

_____

_____

Do you think the treatment in here has helped you cope with your mental health condition?   Y / N / DK / RF

_____

_____

_____

Do you think that the mental health professionals are really trying to help you?   Y / N / DK / RF

_____

_____

_____

IF THE PARTICIPANT HAS ADMITTED TO VIOLENT BEHAVIOUR, ASK:

Has treatment helped with keeping violent behaviour under control?   Y / N / DK / RF

Why/Why not?

_____

_____

_____

Do you think your mental health problems are part of the reason you have acted violently in the past?   Y / N / DK / RF

Ever tried to stop it?

_____

_____

_____

How do you feel about the time you have spent here, and at RVH?

_____

_____

_____

Have hospital staff been helpful to you, generally?   Y / N / DK / RF

Why/why not?

_____
_____
_____

Do you ever feel like the doctors and mental health staff are jerking you around, pretending to help you when in fact they are disrespecting and abusing you? Y / N / DK / RF
_____
_____
_____

IF APPLICABLE: Do you still get angry when you think about all the abuse you've taken? What do you think about doing when you get that angry?
_____
_____
_____

Do you ever think about hurting or humiliating someone in public, who has hurt or insulted you in the past?
_____
_____
_____

How do you think you come across to others? Are people afraid of you?
_____
_____
_____

What's the thing you most regret having done? Why?
_____
_____
_____

SAY: Now I'm going to ask you questions about certain types of treatment. Just let me know whether you have ever been involved in these sorts of treatment.

Has there ever been a time when you have been involved with/taken (go through checklist)…

(**FOR ANY YES ANSWERS TO TREATMENT INVOLVEMENT, ASK**):
• Were you involved in that treatment within the past month?
• Was there ever a time that you stopped taking your medication/stopped taking the right amount of medication/stopped participating in or going to treatment?
• IF YES, did this happen within the past month?

	EVER	**WITHIN PAST MONTH**
Medication	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Individual Therapy	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Group Therapy	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Alcohol Program	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Drug Program	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Vocational Program	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Educational Program	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)
Other _____	Y / N / DK / RF (non-compliance □)	Y / N / DK / RF (non-compliance □)

H1/H2: Previous Violence/Young Age at First Violent Incident

SAY: OK, let's switch topics now. I'd like to ask you about whether you ever did certain things as a child or teenager.

As a kid/child/adolescent, did you ever do crazy or dangerous things for fun?   Y / N / DK / RF
[What kind of things? At what ages?]

_____
_____
_____

SCID Often bullied, threatened, or intimidated others:
- Before the age of 15, did you bully, threaten, or intimidate other kids?   Y / N / DK / RF
  [Prompt for frequency if unclear from file whether above activities were isolated vs. frequent]

_____
_____
_____

SCID Often initiated physical fights:
- Before the age of 15, did you start fights?   Y / N / DK / RF
  [Prompt for frequency if unclear from file whether above activities were isolated vs. frequent]

_____
_____
_____

SCID Used a weapon that can cause serious physical harm to others:
- Before the age of 15, did you hurt or threaten someone with a weapon, like a bat, brick, broken bottle, knife, or gun?
  Y / N / DK / RF

_____
_____
_____

SCID Was physically cruel to people:
***This refers to torturing or inflicting pain and suffering on others, apart from injuries inflicted during a fight. It also includes situations in which no actual physical pain is inflicted

- Before the age of 15, did you deliberately torture someone or cause someone physical pain and suffering?   Y / N / DK / RF

_____
_____
_____

SCID Was physically cruel to animals:
- Before the age of 15, did you torture or hurt animals on purpose?   Y / N / DK / RF

_____
_____
_____

SCID Stole while confronting a victim (e.g., purse snatching, extortion, armed robbery):
***This item requires face-to-face confrontation, ranging from verbal threats to actual violence

- Before the age of 15, did you rob, mug or forcibly take something from someone by threatening him or her?   Y / N / DK / RF

_____
_____
_____

SCID Forced someone into sexual activity:

- Before the age of 15, did you force someone to have sex with you, to get undressed in front of you, to touch you sexually, or to watch a sexual act?   Y / N / DK / RF

_____
_____
_____

SCID Deliberately engaged in fire setting with the intention of causing serious damage:

***The critical element here is intention, rather than whether the fire actually caused severe damage

- Before the age of 15, did you set fires?   Y / N / DK / RF

_____
_____
_____

SCID Deliberately destroyed others' property (other than by fire setting):

***This item refers to vandalism of property with the intent to destroy, rather than purely as a form of expression (e.g., graffiti would not count, but breaking windows, trashing a house, putting dirt in a gas tank, or slashing tires would).

- Before the age of 15, did you deliberately destroy things that weren't yours?   Y / N / DK / RF

_____
_____
_____

SCID Broke into someone else's house, building, or car:

- Before the age of 15, did you break into houses, other buildings, or cars?   Y / N / DK / RF

_____
_____
_____

SCID Often lied to obtain goods or favours to void obligation (i.e., "cons" others):

***This question refers to manipulative lying, and not to lying for other reasons (e.g., to avoid harsh punishment; get someone else in trouble)
- Before the age of 15, did you lie a lot or "con" other people?   Y / N / DK / RF
  [Prompt for frequency if unclear from file whether above activities were isolated vs. frequent]

_____
_____
_____

SCID Stole items of nontrivial value without confronting a victim (e.g., shoplifting, stealing but without breaking and entering, forgery):

***This item does not address stealing of trivial items or forging a signature for purposes other than theft

- Before the age of 15, did you sometimes steal or shoplift things or forge someone's signature? Y / N / DK / RF

_____
_____
_____

SCID Ran away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period):

- Before the age of 15, did you run away and stay away overnight?   Y / N / DK / RF

_____
_____
_____

SCID Often stayed out at night despite parental prohibitions:

- Before the age of **13**, did you often stay out very late, long after the time you were supposed to be home?
  [Prompt for frequency if unclear from file whether above activities were isolated vs. frequent]

_____
_____
_____

SCID Often truant from school:

- Before the age of **13**, did you often skip school?   Y / N / DK / RF
  [Prompt for frequency if unclear from file whether above activities were isolated vs. frequent]

_____
_____
_____

(IF APPLICABLE): At what age did you first start engaging in criminal activities or violence (whether you were caught or not)? (Best estimate): _____ DK / RF

How old were you when you *first* had contact with the criminal justice system? (Best estimate): _____ DK / RF

Did you ever get into trouble with the police for any of the things we've talked about, when you were a child/adolescent (17 and below)?
Y / N / DK / RF   **IF YES**, specify age(s): _____ DK / RF

Were you ever actually arrested as a juvenile (i.e., age 17 and below)? Y / N / DK / RF
 [What for? Were you ever convicted of these things?]

_____
_____
_____

H1/C4/H10/H9: Previous Violence, Impulsivity, Prior Supervision Failure, Personality Disorder

SAY: OK, now I'd like to ask you some more questions about whether you might have engaged in any crime or violence as an adult (since you were 15).

SCID Failure to conform to social norms with respect to lawful behaviours, as indicated by repeatedly performing acts that are grounds for arrest:

- Since the age of 15, have you ever done things that are against the law – even if you weren't caught – like stealing, using or selling drugs, writing bad checks, or having sex for money? Y / N / DK / RF
- **IF NO**: Have you ever been arrested for anything?

_____
_____
_____

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Have you ever been incarcerated in a jail or prison?   Y / N / DK / RF

_____
_____
_____

Have you ever breached parole or probation, escaped, gone Unlawfully at Large, or had a Failure to Appear at court?

_____
_____
_____

Continue with the following questions if participant admits to any criminal activity of any kind, whether leading to official charges or not:

Why did you start crime?

_____
_____
_____

Are your crimes usually spur-of-the-moment (Y / N / DK / RF), or are they planned (Y / N / DK / RF)?

How do you feel when you are committing a crime (nervous, excited, scared, etc.)?

_____
_____
_____

 SCID Deceitfulness, as indicated by repeated lying, use of aliases or "conning" others for personal profit or pleasure:

- Since the age of 15, do you often find that you have to lie to get what you want? (Have you ever used an alias or pretended that you were someone else?) (Have you often "conned" others to get what you want?)

_____
_____
_____

Do you lie a lot? (Y / N / DK / RF); Are you good at lying? (Y / N / DK / RF)

_____
_____
_____

Do you think that people are easy to "con" or manipulate? (Y / N / DK / RF); Are you good at it? (Y / N / DK / RF)

What kinds of things have you done?

_____
_____
_____

 SCID Impulsivity or failure to plan ahead:

- Since the age of 15, do you often do things on the spur of the moment without thinking about how it will affect you or other people? What kinds of things? Was there ever a time when you had no regular place to live?
- **IF YES**: For how long?

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_____
_____
_____

Did you ever "hit the road" and travel without any real plans? Y / N / DK / RF
IF YES: Where did you go? [For how long? What did you do? Did you tell anyone you were going? Did you keep in touch with family or friends?]
_____
_____
_____

SCID Irritability and aggressiveness, as indicated by repeated physical attacks or assaults:
 ***Aggressive acts required to defend oneself or someone else or that are required as part of your job do not count
- Since the age of 15, have you been in any fights?   Y / N / DK / RF
- **IF YES**: How often?
_____
_____
_____

- Since the age of 15, have you ever hit or thrown things at your spouse or partner?   Y / N / DK / RF
- **IF YES**: How often?
_____
_____
_____

- Since the age of 15, have you ever hit a child – yours or someone else's – so hard that he or she had bruises or had to stay in bed or see a doctor?   Y / N / DK / RF
- **IF YES**: Tell me about that.
_____
_____
_____

- Since the age of 15, have you physically threatened or hurt anyone else?   Y / N / DK / RF
- **IF YES**: Tell me about that. How often?
_____
_____
_____

What was the worst injury you ever caused someone?
_____   DK / RF

SCID Reckless disregard for safety of self or others:
    Since the age of 15,
- Did you ever drive a car when you were drunk or high?   Y / N / DK / RF
- How many speeding tickets have you gotten or car accidents have you been in? _____   DK / RF
- Do you always use protection if you have sex with someone you don't know well?   Y / N / DK / RF
- Has anyone ever said that you allowed a child that you were taking care of to be in a dangerous situation? Y / N / DK / RF
_____
_____
_____

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As an adult, do you ever do crazy or dangerous things for fun?　　Y / N / DK / RF
[**IF YES**: What kind of things? When did you do these things?]
_____
_____
_____

SCID Consistent irresponsibility, as indicated by repeated failure to sustain consistent work behaviour or honour financial obligations:
- How much of the time in the last 5 years were you not working?　　_____　　DK / RF
- **IF FOR A PROLONGED PERIOD**: Why? (Was there work available?)
_____
_____
_____

- When you were working, did you miss a lot of work?　　Y / N / DK / RF
- **IF YES**: Why?
_____
_____
_____

- Did you ever walk off a job without having another one to go to?　　Y / N / DK / RF
- **IF YES**: How many times did this happen? _____　　DK / RF
- Have you ever owed people money and not paid them back?　　Y / N / DK / RF
- **IF YES**: How often? _____　　DK / RF
- What about not paying child support, or not giving money to children or someone who depended on you?　Y / N / DK / RF
_____
_____
_____

Have you ever had any financial problems, like defaulting on loans, or credit problems due to unpaid bills?
　　Y / N / DK / RF
_____
_____
_____

SCID Lacks remorse, as indicated by being indifferent to or rationalizing having hurt, mistreated, or stolen from another:
- **IF THERE IS EVIDENCE OF ANTISOCIAL ACTS AND IT IS UNCLEAR WHETHER THERE IS ANY REMORSE**:
- How do you feel about (LIST ANTISOCIAL ACTS)?
- Do you think what you did is wrong in any way?
_____
_____
_____

Who or what is to blame for your offences (or other antisocial acts)?
_____
_____
_____

Do you regret having committed any of those crimes (or other antisocial acts)?　　Y / N / DK / RF
[Why/why not?]
_____
_____
_____

Did any of your crimes (or other antisocial acts) have victims? What effect did the crimes have on the victims? What could you have done to avoid committing those crimes? Have you ever tried to stop crime?

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_____
_____
_____

Have you ever done anything that made you feel guilty or that you were sorry you had done (other than crime)? Y / N / DK / RF

_____
_____
_____

H5: Substance Use Problems

Do you currently use alcohol?   Y / N / DK / RF
Have you ever used alcohol in the past?   Y / N / DK / RF

IF YES, ASK:
How old were you when you first tried alcohol for real? (Best estimate: _____)   DK / RF

Do you currently use drugs?   Y / N / DK / RF
Have you ever used drugs in the past?   Y / N / DK / RF

IF YES, ASK:
How old were you when you first tried drugs? (Best estimate: _____)   DK / RF
What kinds of drugs have you used? _____   DK / RF

Were you ever addicted? Why do you use drugs (escape, relaxation, stimulation, etc.)?
_____
_____
_____

Did you ever do anything dangerous or get into serious trouble when drunk or stoned (drive while impaired, get into fights, get arrested, etc.)?   Y / N / DK / RF

_____
_____
_____

R1: Plans Lack Feasibility

* **Interviewer**: Depending on the transfer plans in place for the participant, you will need to adapt questioning or omit certain questions to reflect the individual's eventual community situation (e.g., it may not be necessary to ask about community treatment and method of support for those individuals who will be in TRPFs where the level of care/supervision will remain similar to that at RVH)

Do you have any long-term goals?   Y / N / DK / RF
[Where would you like to be in 10 years?]

_____
_____
_____

What about more short-term plans?   Y / N / DK / RF
[What are they?]

_____
_____
_____

Do you see any problems you might have in achieving those goals/plans?   Y / N / DK / RF

Is there any trade or occupation you would like to have? [How long have you wanted to do this? Have you planned or prepared for this trade/occupation? What training would you require?]

_____
_____
_____

Are you worried about the future?   Y / N / DK / RF
[Why/why not?]

_____
_____
_____

Do you have a way to support yourself?   Y / N / DK / RF
What is it?

_____
_____
_____

Do you think you can stay safe?   Y / N / DK / RF

Do you know what you will do if you begin to experience worse symptoms?   Y / N / DK / RF
_____
_____
_____

Do you think you need vocational help?   Y / N / DK / RF
Educational help?   Y / N / DK / RF
[If YES, have you looked into how to obtain this help?]

_____
_____
_____

R2: Exposure to Destabilizers

What sorts of things do you think might lead:
- To you wanting to hurt yourself? _____ DK / RF
- To you being violent? _____ DK / RF
- To you not taking your medication? _____ DK / RF
- To family conflict? _____ _____ DK / RF

Do you think that you'll run into any of these things after you are transferred?   Y / N / DK / RF
IF YES: Do you have a plan for dealing with these things?   Y / N / DK / RF
What is it?

_____
_____
_____

Do you think you can stay away from drugs or alcohol?   Y / N / DK / RF
Why/why not?

_____
_____

Are there any people you will see or spend time with who have trouble with the law?   Y / N / DK / RF

_____
_____
_____

Will there be weapons in the residence where you'll be living?   Y / N / DK / RF
Is there any risk of going homeless?   Y / N / DK / RF
Or losing your social security benefits, if you have any?   Y / N / DK / RF

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R3: Lack of Personal Support

How supportive are your family and friends, in helping you with your treatment and recovery? (LOW / MODERATE / HIGH)

_____
_____
_____

Have any of your family members been difficult to deal with? Have they been critical or don't want to have anything to do with you?
Y / N / DK / RF

_____
_____
_____

How will you fill your spare time? [Will there be big chunks of time when the patient is alone and left to their own devices?]

_____
_____
_____

If you begin to feel alone, overwhelmed, or threatened, do you have someone who will be there for you?
        Y / N / DK / RF

_____
_____
_____

R4: Noncompliance with Remediation Attempts

Looking into the future, does it sometimes feel like it will be too much work to stay with treatment?
        Y / N / DK / RF

IF APPLICABLE, ASK: In the past, you've stopped taking prescribed medicines or having gone to appointments. What will be different this time?

_____
_____
_____

Have you worked out how you will receive treatment once you're in the community?   Y / N / DK / RF
[Are you in agreement with this treatment plan? Why/why not?]

_____
_____
_____

Will you be attending day programming/partial hospitalization/a 12-step program/another social rehabilitation program/clinic groups?
Y / N / DK / RF

_____
_____
_____

Do you think that you'll stick with your medication?   Y / N / DK / RF
How about other treatment?   Y / N / DK / RF
[Why/why not?]

_____
_____
_____
_____

Do you anticipate that participating in treatment will result in having to deal with difficult emotions?
Y / N / DK / RF

_____
_____
_____

R5: Stress

Do you think that you'll feel a lot of stress after you are transferred?   Y / N / DK / RF

What kinds of stress do you expect to experience once you are transferred?

_____
_____
_____

Generally, do you usually handle stress well?	Y / N / DK / RF
How about daily hassles?	Y / N / DK / RF
Family conflict or arguments?	Y / N / DK / RF

Do you think you'll run into any problems that you'll have a hard time coping with?   Y / N / DK / RF
IF YES, what:

_____
_____
_____

IF APPLICABLE: Will being around your family be stressful in any way?   Y / N / DK / RF

_____
_____
_____

How about being around friends and other peers in the community setting?   Y / N / DK / RF

_____
_____
_____

IF APPLICABLE: What stress do expect to experience around getting a job/being unemployed? Are you
going to be able to pay rent?   Y / N / DK / RF

_____
_____
_____

IF APPLICABLE: What is the neighbourhood like that you'll be returning to? [Assess for neighbourhood
violence, gangs, substance abuse, prostitutes]

_____
_____
_____

Are there any loved ones who are very ill or dying?   Y / N / DK / RF

_____
_____
_____

Do you have any medical or pain conditions that will cause you stress?   Y / N / DK / RF

_____
_____

Any unresolved criminal charges?   Y / N / DK / RF   Deportation?   Y / N / DK / RF

_____
_____
_____

Any daily hassles that just really bugged you when you were in the community? Y/N/DK/RF
IF YES, ask: What are these hassles and how will you deal with them?

_____
_____
_____
Is there anything else that we haven't discussed that you feel is important for me to know?
_____
_____
_____

Appendix E.   SOS Incident Report

START OUTCOME SCALE (SOS): INCIDENT REPORT(S)
INSTRUCTIONS: Complete one incident report for <u>up to the 5 most serious incidents</u> (starting with the most recent) of ACTUAL AND/OR ATTEMPTED 1) PHYSICAL AGGRESSION AGAINST OTHERS, 2) SEXUAL AGGRESSION, 3) SELF-HARM, and/or 4) SUICIDE <u>based on file information from the past 6 months</u>. If the incident involved multiple targets/victims, complete a separate form specific to each target.

CHECK BOX IF SECTION NOT APPLICABLE □

Incident # _____	Target_____ of _____. (e.g. 1 of 2)	**Target Characteristics**: □ Male □ Female □ Adult □ Child	**Incident Domain**: □ Sexual aggression □ Self-harm □ Aggression to others □ Suicide **Incident Nature:** □ Actual □ Attempted **Incident Severity Level (circle)**: 1 2 3 4

Relationship		Injury Type (code all)		Injury Severity (Highest)
□ 1. Co-Patient □ 2. Nurse □ 3. Health care worker □ 4. Rehab. Staff □ 5. Psychologist/ psychiatrist □ 6. Social worker □ 7. Other health care staff □ 8. Security staff □ 9. Administration staff □ 10. Research staff □ 11. Other staff	□ 12. Spouse/ common law □ 13. Girlfriend/ boyfriend/lover □ 14. Parental figure □ 15. Child (related) □ 16. Other family □ 17. Friend □ 18. Co-patient □ 19. Acquaintance □ 20. Stranger □ 97. Other _____ □ 98. NA □ 99. Unknown	□ 0.None □ 1.Headache/ pain/soreness/redness □ 2.Swelling/ bruising □ 3.Abrasion/ scratch □ 4.Bite □ 5.Puncture □ 6.Sprain/strain □ 7.Broken/lost teeth □ 8. Cut/laceration	□ 9. Fracture □ 10.Burn □ 11.Contusion □ 12.Suffocation/ Strangulation □ 14.Internal injuries □ 15.Unconscious □ 16.Stab □ 17.Gunshot wound □ 97.Other____ □ 98. NA □99.Unknown	□ 0.None □ 1.Mild (transient non-disabling impairment not requiring meds or tx) □ 2.Moderate (requiring med. attention) □ 3.Serious (fractures, hospitalization) □ 4.Death □ 98. NA □ 99.Unknown

Incident Location		Weapons	Substance Type
□ 1. Inpatient Setting	**□ 2. Outpatient Setting**	□ 0. No weapons □ 1. Gun □ 2. Knife □ 3. Blunt object □ 97. Other ____ □ 98. NA □ 99. Unknown	□ 1. Alcohol □ 2. Marijuana □ 3. Stimulants □ 4. Sedatives □ 5. Cocaine □ 6. Heroin □ 7. Opiates □ 8. PCP □ 9. Psychedelics □ 10. Inhalants □ 97. Other _____ □ 98. NA □ 99. Unknown
□ 1. Outside □ 2. Corridor □ 3. Participant's room □ 4. Other patient's room □ 5. Dining room □ 6. Other common room (i.e., smoking/TV room) □ 7. Programs □ 8. Gym □ 9. Bathroom □ 10. Seclusion □ 11. Healthcare □ 97. Other _____ □ 98. NA □ 99. Unknown	□ 1. Patient's home □ 2. Other residence □ 3. Store/bank □ 4. Restaurant □ 5. Bar/tavern □ 6. Other commercial □ 7. Work □ 8. School □ 9. Outdoors □ 10. Outpatient treatment □ 97. Other _____ □ 98. NA □ 99. Unknown	**Substance Use** □ 0. None □ 1. Within 48 hours □ 2. Within 8 hours □ 3. Within 2 hours □ 4. During □ 97. Other _____ □ 98. NA □ 99. Unknown	

Interventions (code all that apply)		Management (code all that apply)
□ 0. None □ 1. Verbal intervention □ 2. Physical intervention □ 3. Mechanical intervention □ 4. Chemical intervention – oral □ 5. Chemical intervention – injection □ 6. Seclusion	□ 7. Isolation without seclusion–time out □ 8. Alarm sounded □ 9. Extra staff responded □ 10. Code white □ 11. Police response requested (i.e., at the time) □ 97. Other_____ □ 98. NA □ 99. Unknown	□ 0. None □ 1. Change in privileges □ 2. Change in meds □ 3. Change in ward □ 4. Police notified □ 5. Criminal charges □ 97. Other _____ □ 98. NA □ 99. Unknown

CODING NOTES:

_____

_____

_____