

The Factor Structure of Intimate Partner Violence Risk

by

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### **Abstract**

Intimate partner violence (IPV) has elicited a great deal of attention from the research, clinical practice, and policy communities because of its widespread prevalence and harmful impact on the individuals and society. Effective risk assessment can help identify individuals who are in the highest risk category and are thus in most need of management strategies. Therefore, a better understanding of risk factors that underlie IPV risk is necessary to optimize available risk assessment measures and effectively manage risk. The purpose of this dissertation was to explore the factor structure of combined items from the Ontario Domestic Assault Risk Assessment, Spousal Assault Risk Assessment, and Brief Spousal Assault Form for the Evaluation of Risk and examine whether the underlying risk factors predict recidivism outcomes. Data were collected for 300 adult men who were charged or accused of violence against their past or current female intimate partners and whose files were referred for a comprehensive threat assessment between 2010 and 2016. Using exploratory factor analysis, I found that items from these measures assessed six underlying risk factors. Although two factors significantly predicted IPV, any violent (violence against anyone), and general (violent and non-violent) recidivism outcomes, only one factor containing mostly Central Eight risk factors (for general violent and criminal recidivism) independently predicted violent and IPV recidivism over time above and beyond other factors, suggesting that not all risk factors included in these measures are independently predictive of recidivism, particularly IPV recidivism. Additionally, I found that randomized selections of items predicted as well as the original measures, indicating that these risk measures are potentially missing pertinent risk-relevant information. Overall, findings from this dissertation suggest that IPV risk

assessment measures are far from ideal, and researchers have suggested that the development of informative causal theories of IPV recidivism can help motivate risk factors for consideration in risk assessment measures, as current IPV theories fail to produce predictive models. In addition to this, more empirical work is also needed to identify and validate risk factors strongly related to IPV recidivism that can assist in risk assessment and ultimately risk management.

*Keywords:* intimate partner violence, domestic violence, risk assessment, predictive validity, factor analysis

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### **Dedication**

English:

I would like to dedicate this dissertation to my parents, who sacrificed everything to provide me with a better life. Everything I have accomplished and who I have become today is all because of you. This final project is proof that everything you have sacrificed have not been in vain and that you have achieved in raising me to be the successful, hard-working person that you have always wished for. For that, I dedicate this dissertation to you, and I promise to continue to make you proud for as long as I am on this earth. I love you and miss you every day.

Vietnamese:

Tôi muốn dành tặng luận văn này cho cha mẹ tôi, những người đã hy sinh tất cả để cung cấp cho tôi một cuộc sống tốt hơn. Mọi thứ con đã hoàn thành và con đã trở thành ngày hôm nay đều là do cha mẹ. Dự án cuối cùng này là bằng chứng rằng tất cả những gì cha mẹ đã hy sinh không hề vô ích và cha mẹ đã thành quả trong việc nuôi dạy con trở thành người thành công, chăm chỉ mà cha mẹ hằng mong muốn. Vì điều đó, con dành tặng cha mẹ luận văn này, và con hứa sẽ tiếp tục khiến cha mẹ tự hào cho đến chừng nào còn có mặt trên trái đất này. Con yêu cha mẹ và nhớ cha mẹ mỗi ngày.

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## **The Factor Structure of Intimate Partner Violence Risk**

### **Chapter 1: Introduction**

Intimate partner violence (IPV)—generally defined as the actual, attempted, or threatened physical harm of a current or former intimate partner—represents a significant social problem in Canada because of its sheer prevalence and the associated personal, social, and economic costs to the individuals, the family, and society (Nicholls et al., 2013). According to reviews of IPV research, approximately one in four (23.1%) women reported experiencing physical violence in an intimate relationship (Desmarais et al., 2012a) and one in five men (21.6%) in developed nations reported perpetrating physical abuse against an intimate partner from 2002 to 2012 (Desmarais et al., 2012b). In fact, IPV represents the largest single category of calls for service to police in the United States (Klein, 2009) and Canada (Burczycka et al., 2018). Moreover, IPV men can reoffend at a rate of up to 50% (e.g., Campbell, 1986; Dutton & Kropp, 2000; Gondolf, 1997; Quinsey et al., 1998), and their IPV may occur daily, as well as last for decades. Further, the severity and/or frequency of abuse perpetrated by an intimate partner may increase over the duration of an abusive intimate relationship (e.g., Cavanaugh & Gelles, 2005; Sullivan et al., 2012). Additionally, treatment prognosis is generally poor for these men compared to other violent men (Grann & Wedin, 2002). Consequently, policing organizations face a significant challenge in identifying and prioritizing cases in which IPV may escalate or persist over time, causing further harm to victims and placing a tremendous burden on the criminal justice system (Nicholls et al., 2013; Williams, 2012).

Although this phenomenon has been described using various terminology in the literature (e.g., domestic violence, domestic abuse, intra-family violence, wife abuse,

wife assault, spousal abuse, wife battering, courtship violence, violence against women, and intimate partner abuse; Gelles, 1993; Saltzman et al., 1999), *intimate partner violence* is the preferred term, not only because it recognizes the fact that both men and women can be victims of such violence, but also because it is specific to intimate relationships (as opposed to child abuse or elder abuse), yet broad enough to include intimate relationships beyond cohabitation or legal marriages (Nicolaidis & Paranjape, 2009). Still, what exactly entails IPV has been both broad and narrow in the literature. For example, it is generally understood that IPV comprises attempted, threatened, or actual physical—including sexual—violence, but IPV can also include other forms of violence, such as stalking, coercive control (i.e., tactics to intimidate, degrade, isolate, and/or control victims; Stark, 2013), and/or psychological/emotional abuse (Graham et al., 2020; Kebbell, 2019). Indeed, the World Health Organization (2012) recognizes IPV as related to any behaviour between a couple that involves acts of physical and sexual violence, emotional and psychological abuse, and controlling behaviour. However, the data collected for the present dissertation contained limited information on these other forms of IPV; thus, for the purpose of this study, I examined IPV using a narrower definition, where IPV is defined as the actual, attempted, or threatened physical (including sexual, but excluding psychological/emotional abuse) harm of a current or former intimate partner.

Certainly, IPV can be perpetrated by both men and women, regardless of age, marital status, or sexual orientation (Ali et al., 2016; Anderson, 2002; Archer, 2000, 2002; Brown, 2004; Capaldi et al., 2007; Capaldi & Owen, 2001). In fact, in 2018, 36% of Canadian men and 44% of Canadian women reported experiencing some form of IPV

in their lifetime (Cotter, 2021). Nevertheless, official police reports and criminal records indicate that the vast majority of physical IPV are committed by men (e.g., Beattie et al., 2018; Fox & Fridel, 2017; Thornton, 2017), and women are less likely to be identified as perpetrators of IPV (e.g., 22% of cases; Hirschel & Buzawa, 2013). As such, most cases available for the present dissertation were of male-to-female IPV. Further, men are more likely to recidivate than women after an arrest for IPV (e.g., Gerstenberger & Williams, 2013), highlighting the importance of understanding and predicting IPV recidivism among men. Moreover, one of the risk assessment scales used in this study (described later) was developed to assess risk of male-to-female IPV recidivism. For these reasons, I focused on IPV among men towards their female intimate partners in the present dissertation.

In the past several decades, IPV has elicited a great deal of attention from the research, clinical practice, and policy communities. There is no longer any debate about the seriousness of the problem or the devastating and far-reaching nature of its impact. However, gaps in our knowledge remain about how best to intervene in IPV cases that encounter the criminal justice system, particularly given the limited resources available to the systems that must address the problem. When resources are limited, the most dangerous men should receive services first and receive more intensive monitoring. In fact, considerable research demonstrates that the effects of criminal justice and therapeutic interventions are maximized when their intensity is determined by the level of risk (e.g., Bonta & Andrews, 2017); thus, effective risk assessment can help identify persons who are in the highest risk category and represents the first step in offender

management. To that end, determining risk factors most strongly related to, and predictive of, IPV recidivism is needed to optimize measures used to assess risk.

While the literature contains a plethora of theories and empirical studies attempting to explain the onset of IPV via risk factors that are associated with, predictive of, and perhaps cause IPV, theory and research on risk factors predictive of *repeated* IPV (or IPV recidivism) remains scarce. Individual-, interpersonal-, and systemic-level risk factors that explain why people commit IPV in the first place are not necessarily useful for distinguishing who—among men who have come into contact with the criminal justice system for IPV—will recidivate (Hilton, 2021). For example, if all IPV men have either witnessed IPV or experienced childhood physical abuse, then early exposure to violence or IPV cannot be used as a risk factor to distinguish recidivists from nonrecidivists. Furthermore, some variables that bear only a small or moderate correlation with IPV could in turn be a strong predictor of IPV recidivism. For instance, men with psychopathic tendencies could be the most likely men to commit repeated and severe IPV, but psychopathy is uncommon among IPV men, offering the appearance of only a moderate effect of psychopathy on IPV (Harris & Hilton, 2001). Hence, risk factors commonly understood to be related (or unrelated) to the development of IPV should not be assumed to also be related (or unrelated) to IPV recidivism. Though it is important to understand factors that contribute to the development of IPV, it is equally important to understand factors that predict the reoccurrence of IPV because the criminal justice system can only set prevention and management strategies in place for individuals in the system. Therefore, given that risk assessment is the first step in lessening the burden on the criminal justice system to prevent these men from repeat IPV, empirical

research is needed to validate the underlying risk factors contained in commonly used risk assessment measures.

Approaches to risk assessment have traditionally relied on relevant theories, as well as empirical research, to assist in the development and calibration of risk assessment measures. However, there is very little theory in most available work on IPV recidivism, and current IPV theories have been noted for their failure to produce predictive models (Bell & Naugle, 2008). Consequently, some IPV researchers (e.g., Hilton & Radatz, 2018; Radatz & Wright, 2016) have drawn upon an influential and well-supported theoretical framework for assessing and intervening with general criminal reoffending. Andrews and Bonta's Risk-Need-Responsivity (RNR) model of effective correctional intervention (e.g., Andrews & Bonta, 2017; Bonta & Andrews, 2017; Bonta et al., 2014) includes a classification of the Central Eight risk factors for general criminal recidivism that is based on general personality models and cognitive social learning perspectives, as well as empirical research findings (Andrews, 2012). According to the model, the "Big Four" risk factors (i.e., criminal history, procriminal attitudes, procriminal associates, and antisocial personality pattern) are causal risk factors that strongly predict criminal recidivism (Andrews & Bonta, 2017). The "Moderate Four" risk factors (i.e., family/marital problems, school/work problems, substance use, and low levels of leisure/recreation) are conceptualized as having an additional, but weaker, impact on the predictive validity for criminal recidivism (Andrews & Bonta, 2017). These eight risk factors have been included in risk assessment measures, such as the Level of Service Inventory (LSI), designed to predict general criminal recidivism, and have also been demonstrated to predict violent recidivism (e.g., Olver et al., 2014). Originally designed

as a risk/need rating scale to appraise risk for general recidivism, the LSI-Revised (Andrews & Bonta, 1995) has also significantly predicted violent recidivism among IPV men (e.g., Girard & Wormith, 2004; Hanson & Wallace-Capretta, 2004), suggesting that the Central Eight risk factors could also be applied to IPV recidivism.

Risk assessment is considered the cornerstone of offender management in various legal and clinical contexts, and represents a means of informing safety planning, justice interventions, sentencing, supervision strategies, and treatment decision-making. Certainly, critical decisions in criminal justice, mental health, and child protection realms are predicated on appraisals of risk of harm (Nunes et al., 2021). Mental health and justice professionals often have the responsibility of correctly identifying the level of risk posed by perpetrators and determining appropriate management and treatment options. Incorrect risk assessments can have serious consequences for the individuals and society. For example, individuals incorrectly assessed as high-risk for violence may have their civil liberties curtailed in serious ways, including involuntary civil commitment and loss of parental access to children. In contrast, individuals incorrectly assessed as low risk for violence may not receive interventions that might otherwise prevent future violence, thereby placing members of the public at risk for harm. Provided that the goal of violence risk assessment is to correctly identify those who are most (or least) likely to commit another violent offence, risk assessment measures need to contain optimal risk factors that are significantly and strongly predictive of recidivism to ensure that prevention strategies are implemented for the appropriate individuals.

The development of violence risk assessment measures involves selecting and combining unique risk factors or constructs that independently—and together more

strongly and significantly—predict violent recidivism. However, this does not imply that the underlying factors and factor structures are similar across risk assessment measures. The development of violence risk assessment measures often utilize various approaches and techniques, and thus, may contain different risk factors that are comparatively more related or less related to recidivism. To the best of my knowledge, neither the factor structure of commonly used IPV risk assessment measures nor the predictive validity of the underlying risk factors has been extensively studied in relation to IPV recidivism. Therefore, the goal of the present project was to explore the factor structure of commonly used IPV risk assessment measures and examine whether the underlying risk factors that comprise them are strongly related to, and predict, IPV recidivism. Findings from the present dissertation may further contribute to our understanding of risk factors that underlie IPV recidivism, which may ultimately assist with the selection of treatment targets for effective risk management.

## **Chapter 2: Risk Factors Theoretically and Empirically Related to IPV and IPV**

### **Recidivism**

In the last 100 years, many theories have been proposed to explain the cause of IPV, which can be broadly described as ranging from the predisposing, psychological characteristics of individuals to predetermining, aspects of society. However, investigating sociocultural- or system-level risk factors is beyond the scope of this project; therefore, for the purpose of the present project, I will focus on theories and risk factors at the individual and interpersonal level in this chapter.

Risk factors of IPV identified in individual- and interpersonal-level theories, in addition to those identified in empirical research, can be loosely categorized into family and interpersonal (i.e., childhood exposure to IPV, employment problems, relationship problems, sexual jealousy), antisocial patterns (i.e., criminal history, antisocial behaviours/personality patterns, prior violence/aggression, procriminal associates, procriminal attitudes or attitudes supportive of IPV, substance use), and psychopathological (i.e., depression, anxiety, suicide attempts) factors, as well as characteristics (i.e., mental health, substance use, prior victimization, attitudes condoning IPV, social support, isolation). As mentioned above, some predictors of IPV recidivism are similar to those found to be related to the onset of IPV. However, developmental factors theorized to be causally related to the onset of IPV may not necessarily serve to predict the likelihood of a new IPV incident. In this chapter, I provide an overview of risk factors commonly found to be related to IPV recidivism, in addition to those related to the onset of IPV. Note that even though risk factors related to the development of IPV may not be equally related to, or predictive of, IPV recidivism, such factors are still

included in some risk assessment measures designed to assess risk of recidivism.

Therefore, it is also important to reference—and provide empirical findings for—these risk factors.

### **Theoretical Risk Factors of IPV**

Many theories of IPV have proposed a direct link between childhood exposure to IPV and committing IPV in adulthood (e.g., social learning theory, intergenerational transmission hypothesis, intergenerational family violence, background/situational model). For example, based on models initially developed by Bandura (Bandura, 1971, 1973), social learning theory proposes that methods for settling family conflicts are often learned during childhood by observing parental and peer relationships (Mihalic & Elliott, 1997). As a result, children who are exposed to family violence (e.g., either witnessed interparental violence or experience physical abuse themselves) develop a tolerance for, or attitudes accepting of, violence within the family, and in turn, become victims and/or perpetrators of IPV in adulthood (Lewis & Fremouw, 2001). The maintenance of IPV in adulthood is thought to be dependent on whether it has been directly or indirectly reinforced (Mihalic & Elliott, 1997). Expanding on social learning theory, the background/situational model (Riggs & O’Leary, 1989) describes additional variables in the background and situation components that are thought to contribute to the development and maintenance of IPV. The background component refers to historical, societal, and individual characteristics that determine who will become aggressive towards their intimate partner, and includes variables such as a history of witnessing or experiencing abuse, prior use of aggression, aggressive personality characteristics, psychopathology, and attitudes accepting of violence. The situation component consists

of variables that precipitate violence, such as substance use and relationship satisfaction (Riggs & O’Leary, 1989).

Moreover, family systems theory describes IPV as occurring in the context of a multitude of stressors within the relationship (e.g., financial stress) and other aspects of family life, such as parenting (Holt et al., 2008). Specifically, the extreme stress associated with not having a financial stability may be the mechanism underlying the relationship between economic hardship and IPV (McCubbin et al., 1980). As couples experience the restrictive nature of economic hardship (e.g., the inability to pay for immediate, essential costs, as well as save for the future), their stress levels may create a vulnerable relationship context in which IPV is more likely to occur. Thus, this theory suggests that financial stress or employment instability is a risk factor for IPV. Taken together, witnessing IPV or experiencing physical abuse in childhood, prior use of aggression, aggressive personality characteristics, psychopathology, attitudes accepting of violence, and employment problems are hypothesized to contribute to perpetrating IPV. There is some evidence to support these relationships, which I briefly review below.

### **Family and Interpersonal**

Given the prevalence of early childhood exposure to IPV in theoretical accounts, witnessing IPV or experiencing physical abuse in childhood have been frequently studied in the literature, and self-report research with community, treatment, and custodial samples provides consistent support for witnessing IPV or childhood abuse being associated with IPV perpetration (e.g., Chan, 2014; Costa et al., 2015; Cubellis et al., 2018; Godbout et al., 2019; Hanson et al., 1997; Hilton et al., 2019; Milaniak & Widom, 2015; O’Leary et al., 2014; Schumacher et al., 2001), albeit with small effect sizes ( $r =$

.19 and .20 for experiencing and witnessing physical abuse, respectively; Godbout et al., 2019). However, a systematic review of IPV risk factors (Capaldi et al., 2012) found that witnessing IPV in childhood was not a significant predictor of male-to-female IPV after controlling for intergenerational antisocial behaviour (i.e., antisocial behaviour exhibited by the individual, as well as their parent[s]), suggesting that other variables may mediate the relationship between witnessing and/or experiencing family violence and later IPV. Indeed, there is relatively little work on the mechanisms of intergenerational transmission of IPV. Studies have demonstrated that variables such as attachment anxiety (Godbout et al., 2017) and antisocial behaviours (including substance use problems; White & Widom, 2003) mediate the link between childhood exposure and later IPV perpetration in both male and female young adults, suggesting that early childhood exposure to IPV may not be a unique predictor of IPV in adulthood. This has also been suggested for IPV recidivism. For example, Cattaneo and Goodman's (2005) review concluded that most studies found no relationship between witnessing IPV or childhood abuse and IPV recidivism. In a large-scale study of 2,854 men convicted of an IPV offence, family adversity increased the likelihood of future IPV ( $r = .08$ , Henning et al., 2009), but family adversity in this study included childhood abuse, witnessing interparental violence, parental incarceration, and parental substance abuse. These latter two constructs are indicators of parental antisocial behaviours, which tend to be more related to IPV than witnessing IPV or experiencing childhood abuse (e.g., Capaldi et al., 2012). As a result, the direct relationship between IPV recidivism and witnessing IPV and/or physical abuse in childhood may be masked by the relationship with these other, more relevant, constructs. Interestingly, other studies have found that witnessing IPV in childhood (e.g.,

Lila et al., 2019), but not childhood abuse (e.g., Lauch et al., 2017), seems to uniquely predict IPV recidivism, which would suggest that perhaps witnessing IPV and experiencing childhood abuse are two separate and distinct mechanisms by which individuals commit and maintain IPV in adulthood. Regardless, the literature on childhood exposure to IPV and IPV recidivism remains mixed.

Research has demonstrated that factors related to interactions among family members or between the couple are necessary to fully understand IPV. Often, the context in which IPV occurs contains a myriad of stressors within the family (e.g., unemployment, financial stress) and relationship (e.g., relationship discord or dissatisfaction, sexual jealousy) that increases the likelihood of IPV. Research suggests that couples who experience high levels of economic hardship are three times more likely to experience IPV than couples who do not (Benson & Fox, 2004). In a longitudinal study of low-income women, Frias and Angel (2007) found that the absence of financial problems reduced the rates of lifetime IPV, and the presence of financial problems increased the odds that IPV would occur. Unstable employment, specifically for male partners, has been strongly associated with increased risk of IPV (Benson & Fox, 2004). Furthermore, many studies have also shown a link between increased relationship problems (e.g., discord, satisfaction) and physical aggression in intimate relationships (e.g., Godbout et al., 2009; Hanson et al., 1997; Schumacher et al., 2001; Stith et al., 2004; Stith et al., 2008). A systematic review (Schumacher et al., 2001) concluded that relationship discord increased the likelihood of IPV. Similarly, meta-analyses have demonstrated that men who reported more relationship satisfaction were less likely to be violent towards their intimate partners (Stith et al., 2004; Stith et al., 2008). Further,

experiencing relationship problems may be associated with sexual jealousy, particularly among men. Indeed, IPV men were more likely to report concern about other men being interested in their partners (Hanson et al., 1997). In a longitudinal study, Kerr and Capaldi (2011) observed that men's jealousy was associated with more arrests for IPV, more injuries reported among female IPV victims, and was predictive of IPV in models controlling for other variables, such as general aggression and relationship satisfaction, suggesting that sexual jealousy may be an important and unique risk factor for IPV.

With regards to IPV recidivism, however, these relationships appear mixed. Among 320 and 1,421 male perpetrators of IPV in Canada, unstable employment histories and financial problems increased the likelihood of being arrested for any new offence and any violent offence against anyone (Hanson & Wallace-Capretta, 2004), as well as increased the odds of incurring a criminal charge for physical assault against a female intimate partner by 2.63 times (Hilton & Radatz, 2021). This relationship has also been found among a Spanish sample (Relative Risk [RR] = 1.46, 95% CI [1.14, 1.86]; López-Ossorio et al., 2017). However, other studies have not found a relationship between employment problems and IPV recidivism (e.g., Kingsnorth, 2006; Lila et al., 2019). Further, employment problems did not predict IPV recidivism above and beyond other risk factors (Hilton & Radatz, 2021; Kingsnorth, 2006), suggesting that this factor is not a unique predictor of IPV recidivism.

Moreover, there is also limited evidence for the association between relationship problems and IPV recidivism. Some studies have not found any support (e.g., Hanson & Wallace-Capretta, 2004; Hilton & Radatz, 2021); however, though relationship problems were not related to IPV recidivism, this variable uniquely predicted IPV recidivism

(Hilton & Radatz, 2021), suggesting that it may provide additional information to predict IPV recidivism. Additionally, a surprising finding by López-Ossorio et al. (2017) suggested that women who reported the highest levels of relationship satisfaction at intake had male partners who were most likely to recidivate ( $r = .32$  for violence and  $.33$  for any recidivism). This is contrary to findings that women's desire to end the relationship—presumably due to low relationship satisfaction—significantly predicted IPV recidivism (RR = 1.48, 95% CI [1.22, 1.79]). López-Ossorio et al. (2017) also found that exaggerated jealousy or suspecting infidelity of their partner was predictive of IPV recidivism (RR = 1.54, 95% CI [1.28, 1.85]). Overall, these findings generally suggest an inconsistent relationship between interpersonal risk factors and IPV recidivism.

### **Antisocial Patterns**

Antisocial patterns, which includes behaviours indicative of antisociality (e.g., association with procriminal peers, holding procriminal attitudes, aggressive or violent behaviours, substance use) and criminal history, are consistently related to IPV and predictive of IPV recidivism. Overall, reviews have found evidence that involvement with aggressive peers is a relatively robust and strong predictor of involvement in later IPV (Capaldi et al., 2012; Costa et al., 2015). On the other hand, attitudes supportive of IPV, which often encompass traditional sex-role stereotypes, hostility towards women, approval of violence, patriarchal dominance (e.g., Brownridge et al., 2008; Johnson, 2001; Markowitz, 2001), and the relationships with IPV have not been consistently supported. IPV-supportive attitudes appear more common among men who perpetrate IPV than comparison samples, across community and institution-based studies (e.g., Birkley & Eckhardt, 2015; Hanson et al., 1997; Holtzworth-Munroe et al., 1997) and was

the single strongest difference between IPV and non-IPV men (Hanson et al., 1997). In addition, holding attitudes accepting of IPV increases a man's risk for violence towards his intimate partner by 2.17 times (Kantor et al., 1994). However, some studies have not found this association (e.g., Holtzworth-Munroe & Stuart, 1994), presumably because attitudes can often encompass various constructs.

Moreover, measures of antisocial personality patterns, including early aggression, aggressive personality traits, and alcohol use, have been consistently related to the occurrence, frequency, and severity of IPV among men (e.g., Cunha et al., 2021; Fernández-Suárez et al., 2018; Hanson et al., 1997; Schumacher et al., 2001), and prospective studies have also found this link after controlling for other variables, such as demographic variables and depressive symptoms (e.g., Ehrensaft et al., 2006; Kim & Capaldi, 2004; White & Widom, 2003). Furthermore, meta-analyses and systematic reviews have found that overall substance use, alcohol use, and drug use were significantly and positively related to IPV perpetration (Cafferky et al., 2018; Schumacher et al., 2001). In addition, studies examining the relationship between indicators of criminal history, such as violent convictions, assault scores, and IPV have consistently found an association (e.g., Hanson et al., 2007; Hilton et al., 2019). There is a tendency for IPV men to have engaged in significantly more violent conflicts outside the home than non-IPV men, though the severity and frequency with which men reported fights outside the home did not differ significantly between the groups (Hanson et al., 1997).

Indicators of antisocial patterns are also significantly related to IPV recidivism. For example, associating with procriminal peers has been consistently found to

significantly predict IPV recidivism ( $r = .09$ , Henning et al., 2009), as well as violence and any recidivism ( $r = .19$  and  $.22$ , respectively; Hanson & Wallace-Capretta, 2004). Regression analyses have also revealed that a history of serious violent or IPV-related property damage offences predicts IPV recidivism above and beyond other variables (Odds Ratio [OR] = 1.40 and 1.34, respectively; Fitzgerald & Graham, 2016). Likewise, antisocial personality patterns/traits ( $r = .11$ , Henning et al., 2009; OR = 3.34, Hilton & Radatz, 2021) and aggression or violence against strangers or acquaintances ( $r = .12$ , Henning et al., 2009; OR = 1.40, Fitzgerald & Graham, 2016) were also consistently predictive of IPV recidivism. In fact, antisocial personality traits incrementally added to the prediction of IPV recidivism, above and beyond other strong risk factors (OR = 1.80; Hilton & Radatz, 2019). Furthermore, reviews have found that having a criminal history (Cattaneo & Goodman, 2005) and using substances (Cattaneo & Goodman, 2005; Hilton & Harris, 2005) generally predicted IPV recidivism, and there is evidence that these variables are also significantly related to violence and any recidivism (e.g., Hanson & Wallace-Capretta, 2004). Having a criminal history also uniquely predicted IPV recidivism (Fitzgerald & Graham, 2016). The importance of these variables in the prediction of IPV recidivism is also evident among Spanish (López-Ossorio et al., 2017) and Australian (Fitzgerald & Graham, 2016) samples of men who perpetrate IPV.

However, when entered in regression models, substance use and the frequency of drug use were not unique predictors of any, general violence, and IPV recidivism (Hilton & Radatz, 2019; Kingsnorth, 2006; Lila et al., 2019; Miles-McLean et al., 2019). Indeed, Cattaneo and Goodman (2005) noted that alcohol use during the follow-up period, but not alcohol use prior to the index (i.e., most recent) offence, was significantly predictive of

IPV recidivism. Interestingly, Miles-McLean et al. (2019) found that alcohol use (but not drug use) was significantly related to IPV recidivism ( $r = .16$ ), while drug use (but not alcohol use) was significantly related to general violence recidivism ( $r = .14$ ), suggesting that mixed findings could result from treating both alcohol and drug use as the same construct. Notably, researchers have suggested that substance use is related to IPV likely because it co-occurs with other risk factors, such as antisocial behaviours (Cafferky et al., 2018; Capaldi et al., 2012). Still, targeting substance use in treatment programs has been related to a significant reduction in IPV recidivism in longitudinal studies (e.g., O'Farrell et al., 2003; Stuart et al., 2003) and the majority of studies have found a significant relationship between substance use and IPV recidivism (e.g., Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2016; Hanson & Wallace-Capretta, 2004; Henning et al., 2009; Hilton & Harris, 2005; Hilton & Radatz, 2021; López-Ossorio et al., 2017), indicating that substance use (drug and/or alcohol) is an important predictor of IPV recidivism. Consistently, indicators of antisocial patterns have been demonstrated to be significant predictors of IPV recidivism.

Despite this, general procriminal attitudes (i.e., attitudes about the law, identification with procriminal peers, tolerance of law-breaking, etc.) have been found to be related to IPV recidivism (e.g., Henning et al., 2009; Hilton & Radatz, 2021), but this relationship was no longer significant in regression analyses that included other Central Eight risk factors (Hilton & Radatz, 2021), suggesting that procriminal attitudes may not be a unique predictor of IPV recidivism. Studies examining attitudes specifically supportive of IPV (e.g., minimization/denial of IPV history, hostile masculinity, neutralizations) have found a significant positive association between these attitudes and

IPV recidivism (e.g., OR = 1.78 and 3.20, Grann & Wedin, 2002), as well as violence and any recidivism ( $r = .18$  and  $.17$ , respectively; Hanson & Wallace-Capretta, 2004), but this relationship has not been consistent in the literature (e.g., Eckhardt & Crane, 2014; Lila et al., 2019). In fact, even when attitudes were measured implicitly (i.e., response-time task) and explicitly (i.e., self-report scales), men who reoffended did not evaluate violence against women more positively than those who did not reoffend (Eckhardt & Crane, 2014), suggesting that attitudes specifically supportive of IPV may not be a significant predictor of IPV recidivism either. Although treatment interventions for men who have perpetrated IPV have traditionally focused on changing attitudes toward gender roles and power and control in intimate relationships (Cannon et al., 2016), the literature suggests that attitudes supportive of IPV may not be a significant risk factor of IPV recidivism.

### **Psychopathology**

Attempts have been made to identify psychopathology characteristics that may increase a person's susceptibility to perpetrating IPV, with some studies finding empirical support. IPV men generally have more symptoms of depression and anxiety, hysteria, and psychotic thinking (Schumacher et al., 2001). In fact, being diagnosed with anxiety has been associated with increased risk for IPV (Danielson et al., 1998). A history of suicide attempts has also significantly predicted injuring an intimate partner, after controlling for confounding variables (Kerr & Capaldi, 2011). However, other studies have not found a relationship between IPV, depression and/or anxiety, and suicide attempts (Andrews et al., 2000; Hanson et al., 1997; Shorey et al., 2012). Moreover, a longitudinal study (Kim & Capaldi, 2004) found that community men's depressive symptoms were associated

with an increase in physical aggression at Time 3, but not at Time 2. Likewise, all studies included in Cattaneo and Goodman's (2005) review reported mixed results between men's depression and IPV recidivism. More broadly, López-Ossorio et al. (2017) found that the presence of mental/psychiatric disorder did not significantly predict IPV recidivism (RR = 1.27, 95% CI [0.89, 1.80]), suggesting that men's psychopathology may not be important for IPV recidivism. However, the researchers did find that suicidal ideation or attempted suicide was significantly predictive of IPV recidivism (RR = 1.67, 95% CI [1.32, 2.13]). Overall, results from these studies suggest that men's psychopathology may be related to their IPV and repeat IPV, but the evidence is mixed.

### **Victim Characteristics**

In addition to perpetrator characteristics, victim characteristics as they relate to barriers to victim support have also been investigated as risk factors for IPV, including mental health, substance use, victims' use of violence towards an intimate partner, attitudes condoning IPV, social support, and whether the victim is geographically isolated, but with limited findings. For example, there is some evidence to suggest that victims' psychopathology may play a role in IPV. Specifically, past depression (Spitzer et al., 1992), symptoms of psychosis (Danielson et al., 1998), and posttraumatic stress (Cafferky et al., 2018; McKee & Hilton, 2019) have been associated with experiencing IPV. However, in multivariate analyses, depressive symptoms were no longer predictive of IPV (Halpern et al., 2009), presumably due to the complexity of the relationship (e.g., bidirectional). Certainly, men and women who are persistently victimized by their intimate partners are more likely to show higher depressive symptoms (Halpern et al., 2009). Similarly, mild (e.g., common assault) and severe IPV (e.g., assault with a

weapon, sexual assault) were both positively related to victims' attitudes supportive of IPV and substance use (Kanter & Straus, 1989), but not official diagnoses of substance dependence (Danielson et al., 1998). Research also shows that women who engage in violence themselves are more likely to be victims of IPV (e.g., Richards et al., 2017), especially among community-based samples (Johnson et al., 2014). On the other hand, studies have not demonstrated that social support and residential instability/geographical isolation were related to IPV victimization (Aklimunnessa et al., 2007; Antai, 2011; Flake, 2005; Barnett et al., 1996; Beyer et al., 2015; Zlotnick et al., 1998).

With respect to IPV recidivism, many of the same risk factors as above have been found to be predictive. For example, women who were more tolerant of their partners' abusive behaviours (i.e., attitudes condoning IPV) and who also commit violence against their partners were themselves more likely to be repeatedly assaulted (e.g., Cattaneo & Goodman, 2005; Hanson & Wallace-Capretta, 2004; Kuijpers et al., 2012a; Kuijpers et al., 2012b). Importantly, Cattaneo and Goodman's (2005) review found that a history of violence between the couple was more important for the prediction of future assaults against the woman than the severity of the assault at the index incident, suggesting that victim-perpetrated violence is an important risk factor for IPV recidivism. However, other variables, such as health problems (including substance use/dependence), low social support, residential instability (i.e., living in rural versus urban areas), and caring for young children or family members with disabilities, as predictors of IPV recidivism have not had sufficient empirical support (Kuijpers et al., 2011; Kuijpers et al., 2012b; López-Ossorio et al., 2017).

Additionally, victim's fear/concern for her safety and/or the safety of others has also gained significant attention as a risk factor for IPV recidivism over the years. Researchers believe that women know their violent partners best and that this knowledge is useful in assessing risk for repeated violence (De Becker, 1997; Hart, 1994), and empirical research supports this belief. Victims' rated likelihood of partner violence was strongly correlated with violence in subsequent months and years, over and above abuse history and other predictors (Hilton et al., 2004; Weisz et al., 2000). Victims' perceptions of personal safety (but not the safety of others, such as children) and likelihood of repeat IPV by their partners were especially predictive of reassault (López-Ossorio et al., 2017) and multiple reassault (Gondolf, 2002). In fact, victims' assessments of risk at intake significantly predicted IPV recidivism over and above risk factors identified in prior research, and at least as well as two out of three risk assessment measures (Heckert & Gondolf, 2004). Given the consistent findings, Hilton and Harris (2005) listed victims' fear as a key predictor of IPV recidivism in their review. Further, research has validated women's ability to assess their own risk of IPV revictimization (e.g., Cattaneo et al., 2007), and scores on risk assessment measures were associated with women's sense of danger (e.g., Connor-Smith et al., 2011; Messing et al., 2015), demonstrating that victims' fear or concern is likely a significant predictor of IPV recidivism.

#### **Additional Risk Factors for IPV Recidivism**

For IPV recidivism specifically, several additional risk factors have been suggested as important. Risk factors such as the presence of psychological abuse (e.g., threats and intimidation), technical violations (e.g., probation/parole violation), and whether weapons were ever used in the perpetration of IPV have been consistently

demonstrated to uniquely predict IPV recidivism (e.g., Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2016; Henning et al., 2009; Kingsnorth, 2006; López-Ossorio et al., 2017; Richards et al., 2013). Additionally, evidence has consistently demonstrated the significance of a history of physical violence against current or past intimate partners in the prediction of IPV (e.g., Cattaneo & Goodman, 2005; Henning et al., 2009; Richards et al., 2013). Further, although López-Ossorio et al. (2017) did not find that past physical assaults (including severity) against the current intimate partner were significantly related to IPV recidivism, prior IPV against previous intimate partners was still significantly predictive of IPV recidivism. Relatedly, severity of the index offence against the current intimate partner seems to be unrelated to IPV recidivism (Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2016), suggesting that prior IPV may be a more important predictor of repeat IPV. There is also some evidence to suggest that prior sexual violence towards an intimate partner and escalation of violence (López-Ossorio et al., 2017), as well as prior custodial sentences (Fitzgerald & Graham, 2016), predict IPV recidivism, but these findings are limited to only a few studies in the literature.

### **Summary**

Taken together, several risk factors have been hypothesized to contribute to IPV and IPV recidivism. However, empirical support for some variables is mixed in the literature, particularly those with respect to predicting IPV recidivism. For example, employment problems, relationship problems, and substance use and their relationships with IPV recidivism are inconsistent. Instead, these variables appear more related to the onset of IPV, yet they are often included in commonly used measures designed to assess the risk of IPV recidivism. Nevertheless, these commonly used IPV risk assessment

measures have demonstrated good predictive validity, despite their inclusion of risk factors that are seemingly unrelated to IPV recidivism. Perhaps the adequate predictive validity of IPV risk assessment measures reflect the possibility that individual risk factors are assessing similar underlying risk constructs that are more clearly related to IPV recidivism. For example, though risk factors such as employment problems and substance use may not be consistently related to IPV recidivism in the literature, it is possible that these variables, along with other variables, are assessing an individual's capacity to adapt or adjust to the environment, which may more evidently influence IPV recidivism. Therefore, examining the factor structure of available IPV risk assessment measures may reveal that individual risk factors cluster together, suggesting that they are assessing similar underlying constructs that may more clearly relate to IPV recidivism. These latent constructs that underlie IPV risk can then ultimately be used to inform the selection of targets for intervention.

### **Chapter 3: Intimate Partner Violence Risk Assessment Measures and Their Factor Structure**

Risk assessment is a prognostic task (i.e., estimating the likelihood of an offence) rather than a diagnostic task (i.e., determining whether a person is “dangerous” or not; Helmus & Babchishin, 2017). The essential goal of violence risk assessment is to enable the differential handling of cases. For example, detaining accused persons, rather than releasing them with a notice to appear in court is a distinction made partly on the perceived likelihood of violent recidivism. Incarceration and community supervision are two broad restriction tools the criminal justice system has at their disposal to impede violent recidivism, and risk assessment can help identify persons who are in most need of such restrictions. Considerable research demonstrates that the effects of criminal justice and therapeutic interventions are maximized when their intensity is determined by the level of risk (e.g., Bonta & Andrews, 2017). The RNR model is one of the most effective models of perpetrator treatment and has been broadly discussed in the scientific literature for over 20 years (e.g., Andrews et al., 2011; Ward et al., 2012). It comprises an iterative process of assessment and intervention, which identifies not only individual characteristics but also features of service provision that must be addressed for optimal outcomes. Briefly, the risk principle states that the first step is to identify risk of recidivism and to exert risk management efforts in accordance with the level of risk. Seven of the Central Eight factors (all except criminal history; discussed later) are potentially changeable and are referred to as criminogenic treatment needs. The need principle asserts that correctional services should focus on criminogenic needs. The responsivity principle involves ensuring that treatments use the most effective strategies

and are delivered in a manner consistent with individuals' abilities and learning styles. In correctional research, the most effective criminal justice interventions adhere to these three key principles (e.g., Andrews et al., 1990) and the model shows promise for improving the effectiveness of IPV treatment (Travers et al., 2021).

Given that the first step of the RNR model is to determine perpetrators' level of risk for recidivism, the identification and classification of risk factors could be considered the core of the model. Thus, risk assessment—as it is understood as part of the process of identifying and intervening with individuals deemed likely to commit another offence—is a necessary first step in risk management. However, instruments and measures developed and used to assess the risk of violent recidivism, particularly among IPV men, are far from ideal, and it is not yet clear whether commonly used measures contain overlapping or distinct risk constructs, as well as whether they contain the most relevant risk information for the prediction of recidivism. In this chapter, in addition to introducing commonly used violence risk assessment measures developed for the use of distinguishing IPV recidivists from nonrecidivists, I discuss the factor structure of these risk assessment measures, the potential risk factors that comprise them (from Chapter 2), and their similarities to the Central Eight factors from the RNR model.

### **Intimate Partner Violence Risk Assessment Measures**

Risk assessment measures and their procedures can be classified using Hanson and Morton-Bourgon's (2009) proposed method that include five categories, two of which I describe here: actuarial and structured professional judgement (SPJ). The actuarial category describes risk assessment procedures in which items are predetermined and selected because they have been empirically demonstrated to increase risk of

recidivism through follow-up studies and are easily accessible. These measures have explicit rules for scoring individual items, and there is typically some algorithm for obtaining a total score, which is related to numeric risk of recidivism in actuarial tables. The SPJ category describes risk assessment procedures where evaluators are given a structured list of predetermined risk factors that are empirically and/or theoretically related to recidivism. However, the method of combining items into a total score is not specified, and the overall evaluation of risk is typically left to the professional judgment of the evaluator (Boer et al., 1997).

Actuarial measures are typically composed of static, historical factors that are not modifiable by treatment or intervention (Andrews & Bonta, 2010). Although static factors predict recidivism, it is not obvious how evaluators can use static, unchangeable risk factors to inform the selection of treatment targets or to evaluate change. For this reason, some researchers have argued that SPJ tools offer a distinct advantage over actuarial tools because they contain potentially dynamic risk factors that can provide interventions to reduce risk by guiding assessors to consider how such factors might affect risk (Bonta & Andrews, 2007; Guy et al., 2012). However, not only does this argument assume that variables in risk prediction models are different from those in risk management models, it also assumes that static and putatively dynamic risk factors are assessing fundamentally different psychological attributes. For example, substance use exists in both risk prediction and risk management models, as well as their respective tools. Moreover, though the distinction between static and dynamic risk factors has heuristic value, evidence has not demonstrated that these risk factors are fundamentally distinct. In other words, it is not clear that putatively dynamic risk factors are the only

markers of criminogenic needs, as both static and dynamic risk factors predict recidivism because they are behaviour markers of latent enduring risk-relevant propensities (Beech & Ward, 2004; Mann et al., 2010). Instead, it may be more practical to conceptualize all risk items as reflecting latent constructs that may assist with both risk prediction and risk management. Therefore, exploring the underlying factor structure of different risk assessment tools would reveal the latent constructs that may be used to guide the selection of targets for intervention. Rather than focusing on single, putatively dynamic risk items to suggest targets for intervention, perhaps relying on clusters of static/dynamic items that together reflect underlying risk constructs or dimensions could better guide professionals in the field to specific areas that require treatment.

Over the last two decades, several violence risk assessment measures have been developed to assess the risk of repeat IPV. A recent meta-analysis on the predictive validity of risk assessment measures identified 39 different violence risk assessment measures that have been either developed for, or applied to, IPV risk assessment (van der Put et al., 2019). The Ontario Domestic Assault Risk Assessment (ODARA; Hilton et al., 2004) and Spousal Assault Risk Assessment guide (SARA; Kropp & Hart, 2000) are among the most commonly used risk assessment measures for estimating the likelihood of IPV recidivism. The ODARA is an actuarial instrument developed through empirical research and interpreted using statistical data. It was created to fill the gap in the availability of empirically-driven IPV risk assessments in the late 1990s, though theory did influence the choice of potential predictors studied. To create the ODARA, the authors statistically identified the strongest unique predictors of men's repeat violence against their female intimate partners, using information available to law enforcement

officers throughout Ontario, Canada, at the time of a police occurrence report (Hilton et al., 2004). The ODARA was later validated for IPV recidivism on similar samples drawn from police records database in Ontario (AUC = .65-.80, Hilton & Harris, 2009; Hilton et al., 2008; Hilton et al., 2004), elsewhere in Canada (e.g., AUCs = .66-.70, Jung & Buro, 2017), Switzerland (AUC = .63, Gerth et al., 2017), and Australia (AUC = .68, Lauria et al., 2017). ODARA scores also predicted IPV recidivism among men who served custodial sentences in Ontario (AUC = .64, Hilton et al., 2010) and high-risk men referred for threat assessment (AUC = .59, Pham et al., 2021).

The SARA combines information gathered from interviews with both parties involved in the IPV incident, other informants, and police reports and criminal records, including statements by the accused person and alleged victim that the official records may contain (Kropp & Hart, 2000). The SARA uses the SPJ approach (see above) that allows assessors to use their clinical judgement to select some risk factors and to summarize overall risk (Kropp & Hart, 2000). Developers of the SARA drew risk factors from an empirical literature review and considered clinical and other issues in their final selection of 20 items (Kropp et al., 1999; Kropp & Hart, 2000). Research on the SARA shows that the total score predicts IPV recidivism. For example, reviews have reported an average AUC of .63 for the SARA (Helmus & Bourgon, 2011; Messing & Thaller, 2013), and independent studies have found AUCs of .64 among men with a police record for IPV (Hilton et al., 2004) and .59 in cases with relatively in-depth correctional records (Hilton et al., 2008). More recently, the SARA total score has been found to predict IPV convictions (AUC = .74) and charges (AUC = .68) among men with criminal charges for violence or threatened violence against an intimate partner (Jung & Buro, 2017), as well

as IPV recidivism among high-risk men referred for threat assessment (AUC = .57, Pham et al., 2021).

Kropp and Hart (2004) also developed the Brief Spousal Assault Form for the Evaluation of Risk (B-SAFER), which is a briefer version of the SARA, developed as a checklist and structured interview guide for police and other criminal justice professionals during routine investigations. They removed redundant SARA items identified in a factor analysis of 2,796 known or suspected IPV cases. The authors kept items most closely related to the professional judgement of risk in these cases, most of which were also related to IPV recidivism in a subsample of 201 cases (Kropp & Hart, 2004). However, evidence for the B-SAFER's predictive validity is mixed. For example, some studies have found that B-SAFER total scores predicted return to prison (AUC = .76, Loinaz, 2014) and subsequent police contact (AUC = .70, Story et al., 2014), whereas other studies have reported no significant association with any form of recidivism (e.g., Gerbrandij et al., 2018; Svalin et al., 2018). In fact, a Swedish study of 216 assessments conducted by police found an inverse effect for B-SAFER summary risk judgements; that is, men judged to be high-risk were less likely to commit a new offence than men judged to be low risk (Belfrage & Strand, 2012).

Despite advances in IPV risk assessment in recent years, there remains considerable controversy in the literature regarding which risk assessment procedure better predicts IPV recidivism. An early review by Dutton and Kropp (2000) described various measures that had not been validated for predicting IPV, including the Psychopathy Checklist-Revised (PCL-R; Hare, 1991). At the time of the published review, only three IPV-specific measures were available, including the Danger

Assessment (DA; Campbell, 1986), SARA, and the Propensity for Abusiveness Scale (Dutton, 1995). The authors found that only the SARA was able to discriminate between recidivistic and non-recidivistic men who perpetrated IPV using prospective data. An updated meta-analysis by Hanson et al. (2007), which included 18 additional studies available since the 2000 review, revealed that all included measures moderately predicted IPV recidivism, but no one measure significantly outperformed the others. A more recent meta-analysis, however, found that actuarial instruments ( $AUC = .657$ ) outperformed SPJ instruments ( $AUC = .580$ ) in predicting both onset and recurrence of IPV (van der Put et al., 2019). When comparing specific measures, Messing & Thaller (2013) found that the ODARA had the highest predictive validity of all the IPV risk measures examined, with an average weighted AUC of .666 (95% CI [.665, .668],  $k = 5$ ), followed by the SARA ( $AUC = .627$ , 95% CI [.627, .629],  $k = 6$ ). Further, the ODARA was also statistically better at predicting IPV recidivism than the other measures (Messing & Thaller, 2013), suggesting that the ODARA is a superior measure. Notwithstanding, independent studies directly comparing measures within the same samples found no statistical differences for predicting various recidivism outcomes (e.g., Jung & Buro, 2017; Olver & Jung, 2017; Pham et al., 2021). It is important to note that this equivalence in predictive validity does not indicate that these measures are interchangeable or comparable by any means (Hanson et al., 2007). In fact, the ODARA and SARA have both demonstrated unique contributions in the prediction of IPV recidivism (Olver & Jung, 2017), suggesting that they provide different information to predict IPV recidivism. In other words, the differences in their item content, as well as their factor structure, may offer complementary information to understand IPV recidivism and ultimately assist in the

optimization of risk assessment procedures, but more research is needed to explore their factor structure.

### **The Factor Structure of Intimate Partner Violence Risk Measures**

Currently, risk of IPV recidivism is understood as involving multiple, distinct constructs, but the nature of these constructs has yet to be determined. Based on the variables theorized and demonstrated to be most predictive of IPV recidivism reviewed above, developers of the SARA carefully selected 20 items and sorted them into four domains of risk that they believed the items reflected (i.e., *criminal history, psychosocial adjustment, spousal assault history, and index offence*), which suggests a preconceived factor structure for the SARA, consisting of four potential underlying constructs (i.e., multidimensional). However, the only empirical examination of the factor structure of the SARA (i.e., Hilton et al., 2010) did not support these suggested domains, and results demonstrated that items from different domains may be assessing the same underlying construct. Conversely, items within the same domain may be providing different information. Briefly, Hilton et al. (2010) conducted an exploratory factor analysis (EFA) of combined items from the ODARA, DA, SARA, Domestic Violence Screening Instrument (DVSI; Hisashima, 2008), and PCL-R. Results revealed four distinct underlying factors. The first factor contained the SARA items reflecting attitudes towards IPV, plus emotional and interpersonal aspects of psychopathy from the PCL-R. The second factor contained items reflecting antisocial patterns (e.g., general criminality, substance abuse, prior arrests, and correctional sentences)—none of which were SARA items. The third factor consisted of items reflecting technical violations in relation to IPV, which included SARA items. This was also consistent with other research

demonstrating that violating conditions, particularly those meant to prevent further IPV, is related to IPV recidivism (e.g., Henning et al., 2009; López-Ossorio et al., 2017). The fourth factor included threats, use of weapons, and sexual assault items from the SARA, DA, ODARA, and DVSI.

More specific to the SARA, Hilton et al. (2010) found that some SARA items from the *criminal history* domain (e.g., “Past violation of conditional release or community supervision”) loaded with some items from the *spousal assault* (e.g., Past violation of no-contact order”) and *index offence* (e.g., “Index violation of no-contact order”) domains, suggesting that items from different SARA domains may be assessing the same underlying construct. In addition, most of the SARA items (14, 80.0%) did not significantly load onto any of the retained factors, further suggesting that the domains do not accurately reflect what the SARA items are truly assessing. Like the SARA, the B-SAFER items also fall into one of three proposed domains (i.e., *perpetrator’s intimate partner violence*, *perpetrator’s psychosocial adjustment*, and *victim vulnerabilities*), suggesting that the B-SAFER may also consist of three latent underlying constructs (i.e., multidimensional). However, the factor structure of the B-SAFER has yet to be empirically examined.

Unlike the SARA and B-SAFER, ODARA items do not fall into predetermined risk domains, but there have been two studies that have factor analyzed available IPV risk assessment measures, both of which have found that the ODARA is also multidimensional. For example, similar to the results involving the SARA, most of the ODARA items (7, 53.8%) in Hilton et al.’s (2010) study did not significantly load onto any of the retained factors, suggesting that the items are assessing constructs that are

distinct from those retained in the study. Additionally, a more recent study by my colleague and I (i.e., Pham & Jung, 2021) factor analyzed ODARA items using a sample of 234 IPV men who were charged with at least one violent offence against their past or current female intimate partners. Findings suggested that the ODARA consists of three distinct factors that appear to be related to *antisocial patterns*, *victim vulnerabilities*, and *index offence*. For predicting recidivism outcomes, only the antisocial patterns factor showed significant predictive validity and was statistically better than the other two factors at predicting any (i.e., violent and non-violent) and general violent recidivism, but not IPV recidivism. These findings suggest that IPV risk is multidimensional, and some underlying factors may be significantly related to IPV recidivism while some may only provide redundant information, indicating a need for further research to determine the number and nature of risk factors that comprise IPV risk.

The availability of numerous effective risk measures means that professionals must make informed decisions regarding which instrument to use. Indeed, different risk measures assessing the same individuals may yield different outcomes in other areas of risk assessment (e.g., Barbaree et al., 2006b; Jung et al., 2013), which can be explained through recognition of the differences among measures in item content (e.g., Barbaree et al., 2006a). Given the various approaches to developing risk assessment measures discussed above, it is reasonable to expect that different risk assessment measures may contain and assess unique information relevant for IPV recidivism, as demonstrated by the incremental validity of the ODARA and SARA in the prediction of IPV recidivism (e.g., Olver & Jung, 2017). Although some items between the ODARA, SARA, and B-SAFER appear similar (e.g., items regarding criminal history), many items in the

ODARA are not contained in the SARA or B-SAFER and vice versa. For example, some ODARA items are assessing information about the victim (e.g., “Victim has a biological child from a previous partner,” “Any barriers to victim support,” and “Victim concern”), which are not included in the SARA. Conversely, the SARA and B-SAFER contain items that pertain to the perpetrator’s beliefs and attitudes regarding IPV, as well as personality disorders (e.g., “Extreme minimization or denial of spousal assault history,” “Attitudes that support or condone spousal assault,” “Personality disorder with anger, impulsivity, or behavioral instability,” etc.), which are not present in the ODARA. In fact, empirical investigations show that certain ODARA items loaded onto factors that did not contain any SARA items (and vice versa), and these factors were also significantly related to IPV recidivism (e.g., Hilton et al., 2010), suggesting that these measures are assessing different information. Therefore, exploring the factor structure of combined items from available IPV risk measures using EFA, would reveal not only distinct constructs within measures, but also distinct constructs between measures, further informing whether these measures are assessing overlapping constructs. Overall, this suggests that these risk assessment measures contain unique items/information, rendering them non-interchangeable and possibly complementary.

The selection of items that comprise violence risk assessment measures are typically based on theory and literature reviews of risk factors most strongly related to IPV recidivism or statistical analyses of risk factors that uniquely predict IPV recidivism in prospective studies (see above). However, certain risk factors theoretically and empirically linked to IPV are not necessarily predictive of repeat IPV (Hilton, 2021). In order to optimize the predictive validity of risk assessment measures, factors included

need to be uniquely and clearly related to IPV recidivism. The ODARA, SARA, and B-SAFER contain risk factors that have been demonstrated to be predictive of IPV recidivism, but they also contain factors that have had mixed findings in the literature. For example, the *psychosocial adjustment* subscales in both the SARA and B-SAFER contain items similar to family/interpersonal, psychological, and psychopathological risk factors, such as victim of and/or witness to family violence as a child or adolescent, personality disorder, and relationship, employment, substance use, and mental health problems (including psychotic and/or manic symptoms and suicidal or homicidal ideation/intent). Moreover, some B-SAFER items also fall under a *victim vulnerability* subscale, where items pertain to victim characteristics (as above) that may increase risk of revictimization, such as inconsistent attitudes or behaviour (e.g., attitudes condoning IPV and violence against partner), fear of perpetrator, inadequate support or resources, unsafe living situation (e.g., residential instability), and health problems. With the exception of victims' attitudes supportive of IPV, all risk factors contained in the psychosocial adjustment and victim vulnerabilities subscales have not demonstrated a relationship with IPV recidivism (e.g., Cattaneo & Goodman, 2005; Cattaneo et al., 2007; Connor-Smith et al., 2011; Gondolf, 2002; Heckert & Gondolf, 2004; Hilton & Radatz, 2021; Hilton et al., 2004; Kingsnorth, 2006; Kuijpers et al., 2012a; Kuijpers et al., 2012b; Lauch et al., 2017; Lila et al., 2019; López-Ossorio et al., 2017; Messing et al., 2015; Weisz et al., 2000). In fact, some risk factors appear more related to the onset of IPV than IPV recidivism in the literature (e.g., employment problems, relationship problems, substance use, personality traits, etc.; Benson & Fox, 2004; Cafferky et al., 2018; Dutton et al., 1997; Frias & Angel, 2007; Godbout et al., 2009; Hanson et al., 1997; Henning et

al., 2009; Schumacher et al., 2001; Stith et al., 2004; Stith et al., 2008), suggesting that some SARA and B-SAFER items may not be relevant for IPV recidivism specifically.

Nevertheless, the SARA and B-SAFER also contains items and subscales that have been shown to be significantly related to IPV recidivism, such as the SARA's *criminal history* and *spousal assault history*, and the B-SAFER's *intimate partner violence* subscales. The *criminal history* subscale consists of items reflecting a history of violence and aggression both inside and outside the family (excluding violence against intimate partners) and past technical violations, which have been shown to be related to IPV recidivism (e.g., Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2006; Hanson & Wallace-Capretta, 2004; Henning et al., 2009; Hilton & Radatz, 2021; López-Ossorio et al., 2017). In fact, the factor that included the SARA's technical violations item in Hilton et al.'s (2010) study was significantly associated with IPV recidivism ( $r = .11, p < .05$ ). Furthermore, the SARA's *spousal assault history* subscale consists of items reflecting physical and sexual assaults (or sexual jealousy), threats, use of weapons, escalation, attitudes supportive of IPV, and technical violations, all of which (except attitudes supportive of IPV) are significantly predictive of IPV recidivism in the literature (e.g., Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2016; Henning et al., 2009; Kingsnorth, 2006; López-Ossorio et al., 2017; Richards et al., 2013). Notwithstanding, Hilton et al. (2010) found a significant association between the factor that contained attitudes supportive of IPV and IPV recidivism ( $r = .10, p < .05$ ), but findings did not show a relationship between IPV recidivism and the factor that contained use of weapons, threats, and sexual assault ( $r = .07$ ), indicating some inconsistencies. In addition, the SARA's *index offence* subscale contains items reflecting the severity of the index

offence, such as severe and/or sexual assault, use of weapons or credible threats of death, and violation of “no contact” order, all of which also significantly relate to IPV recidivism in the literature (e.g., López-Ossorio et al., 2017). Again, this was not the case in Hilton et al.’s (2010) study ( $r = .07$ ), further suggesting that the SARA and B-SAFER may include unique predictors of IPV recidivism, but also those that are more related to the onset of IPV.

Additionally, the limited studies that have examined the factor structure of the ODARA also indicate underlying risk constructs that are significantly related to IPV recidivism. For example, both Hilton et al. (2010) and Pham and Jung (2021) found underlying constructs that reflect antisocial patterns which were strongly related to, and predictive of, IPV recidivism in their studies, and have been shown to be predictive in prior research (e.g., Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2006; Hanson & Wallace-Capretta, 2004; Henning et al., 2009; Hilton & Radatz, 2021; López-Ossorio et al., 2017). However, they also found other underlying constructs that were unrelated to IPV recidivism, such as those pertaining to the index offence and victim vulnerabilities, which is inconsistent with findings in the literature (e.g., Cattaneo & Goodman, 2005; Connor-Smith et al., 2011; Gondolf, 2002; Heckert & Gondolf, 2004; Hilton et al., 2004; Kuijpers et al., 2012a; Kuijpers et al., 2012b; López-Ossorio et al., 2017; Messing et al., 2015; Weisz et al., 2000). These results further suggest that more research is needed to not only explore the underlying constructs that comprise commonly used risk assessment measures, but also to examine whether these underlying risk constructs are predictive of IPV recidivism. Research suggests that different risk factors are contained and assessed

across various risk assessment measures; thus, factor analyzing combined items from multiple risk assessment measures may reveal distinct factors among them.

In addition to factor analyses, a practical way of investigating the uniqueness of risk assessment measures has been shown in the general and sexual violence literature. For example, Kroner et al. (2005) randomly selected items from well-established risk assessment measures used to assess risk of general violent recidivism. Findings demonstrated that random selections of items predicted recidivism outcomes as well as the original measures, suggesting that the original measures are only assessing criminal risk and no single measure has captured sufficient risk assessment theory to result in better prediction than randomly derived measures assessing criminal risk. In other words, current violence risk assessment measures are not unique enough to demonstrate a significant difference in the prediction of violent recidivism. More recently, Buttars et al. (2015) replicated Kroner et al.'s (2005) findings in the sexual violence literature using sex offender risk assessment measures. Again, they found that randomized selections of items predicted as well as the original measures, which the authors concluded that current measures have an incomplete conceptualization of risk for sexual offender populations. Given these findings from other areas, available IPV risk assessment measures may also only be assessing criminal risk and have not captured sufficient risk assessment theory.

In conclusion, the ODARA, SARA, and B-SAFER incorporated a variety of psychometric and statistical techniques in their development. Regardless of their developmental strategies, these risk assessment measures have consistently demonstrated their abilities to predict IPV recidivism beyond the samples on which they were developed, and when predictive validities are directly compared within samples, minimal

statistical differences are observed. Nonetheless, the equivalence in the average predictive validity of measures does not necessarily imply that these measures are interchangeable (Hanson et al., 2007). Similarities between these risk instruments do exist, but differences in their item content, as well as in their development, suggest that these measures offer different, and possibly complementary, information to understand IPV recidivism. Therefore, the current project aims to explore the factor structure of commonly used IPV risk assessment measures to reveal the quantity and nature of IPV risk constructs that comprise IPV risk, as well as whether these measures contain unique and complementary information to fully understand and predict IPV recidivism.

### **Overview of the Dissertation**

The overall goal of this dissertation was to investigate the factor structure and potential risk factors of commonly used IPV risk assessment measures. To that end, I conducted analyses on the same sample in three studies. In Study 1, I employed an EFA of combined items from the ODARA, SARA, and B-SAFER, which allowed for an examination of the factor structure within measures, as well as an examination of the similarities and differences between measures. In Study 2, I examined whether any of the resulting item clusters or factors significantly predicted recidivism outcomes (i.e., any new violent and non-violent charges or convictions, any new violent charges or convictions against anyone, and any new violent charges or convictions against an intimate partner) and whether any of the factors statistically outperformed the others. Additionally, I examined whether the factors incrementally predicted any violent and IPV recidivism over time. In Study 3, I further examined whether the measures offered enough uniqueness to the prediction of IPV by randomly selecting items from the

ODARA, SARA, and B-SAFER to generate total scores for three randomized risk measures. Predictive validity of the newly generated total scores were then statistically compared to the predictive validity of total scores from the original measures. This allowed for an examination of whether the structure of the original measures offered enough unique information to predict recidivism outcomes significantly better than randomized selections of items.

## **Study 1: Exploring the Factor Structure of Intimate Partner Violence Risk**

### **Assessment Measures**

The purpose of Study 1 was to explore the factor structure of combined items from the ODARA, SARA, and B-SAFER. Given that past research has found at least three factors that comprise the ODARA (Pham & Jung, 2021) and four factors that comprise various IPV risk measures (Hilton et al., 2010), I hypothesized that the EFA in Study 1 would also reveal that IPV risk is multidimensional, containing at least three factors. I also hypothesized that factors would reflect several constructs such as antisocial patterns, features of the index offence, barriers to victim support, IPV-specific features (e.g., history of IPV, threats, etc.), psychosocial adjustments (e.g., family/interpersonal and employment problems), and/or psychopathological characteristics.

### **Method**

#### ***Setting***

All data were gathered and extracted from case files at the Integrated Threat and Risk Assessment Centre (ITRAC) in Edmonton, Alberta, which is a threat assessment service that provides assessment and consultation services to police, child protective services, and other governmental agencies throughout Alberta. ITRAC is one team that comprises Alberta Law Enforcement Response Teams (ALERT), an organization established by the provincial government to focus on preventing organized and serious crime in Alberta. More specifically, ITRAC is a provincial joint forces multidisciplinary unit that assesses threats and develops risk management plans for high-risk domestic violence and stalking cases in the province of Alberta, Canada, and is staffed by sworn and retired members from various police services, a forensic psychologist, a policy

analyst, and a crime analyst (see Ennis et al., 2015). Central to the threat assessment service are certified police threat assessors, all of whom have extensive policing experience, specialized training and education, and have been (or are in the process of being) certified by one of the three certification programs for police threat assessors in Canada (i.e., ITRAC, Ontario Provincial Police, and Royal Canadian Mounted Police).

### *Sample*

Data were originally collected for a larger study, funded by the Social Sciences and Humanities Research Council (SSHRC), to optimize risk assessment for domestic violence. The study was developed under a partnership between investigators from four institutions (i.e., Waypoint Mental Health Care, MacEwan University, Carleton University, and University of Alberta) and was carried out at ITRAC. For the present dissertation, analyses were conducted on variables of interest from the sample collected at ITRAC. The sample consisted of 300 adult men who were charged or accused of violence against their past or current female intimate partners and whose files were referred for a comprehensive threat assessment from 2010 (when ITRAC began using validated IPV risk assessment measures) to 2016 (see Table 1 for sample description). Each assessment was completed by a certified threat assessor. The mean age of the men and their female partners was 35.3 years ( $SD = 9.0$ , range 18 to 65) and 32.9 ( $SD = 9.1$ , range 15 to 61), respectively. Most were identified as Caucasian, White, or European ( $n = 189$ , 63.0%), followed by Native, Aboriginal, or Métis ( $n = 81$ , 27.0%), with the remaining identified as other ethnicities ( $n = 27$ , 9.0%) or missing ( $n = 3$ , 1.0%). On average, the highest grade completed by the men was grade 10.5 ( $SD = 2.2$ ), with only 34.0% ( $n = 102$ ) having completed high school. Almost half the men were unemployed at

the time of their index offence ( $n = 134$ , 44.4%). Approximately half were married or cohabiting with the victim at the time of the index ( $n = 154$ , 51.3%), 27.0% ( $n = 81$ ) were formerly married or cohabiting, 13.0% ( $n = 39$ ) were currently dating, and 7.3% ( $n = 22$ ) were previously dating, with 1.3% ( $n = 4$ ) missing. Most relationships had lasted at least 24 months ( $n = 185$ , 61.7%). Of note, out of the total sample of 300 cases, eight were missing follow-up information and 18 were not released from custody or deceased at the time of follow-up; therefore, only 274 cases were valid for all analyses involving recidivism data.

**Table 1***Description of Sample*

Variables (range)	<i>n</i>	<i>M (SD)</i> or %
Perpetrator age (18.22 – 65.26)	300	35.3 (9.0)
Perpetrator ethnicity	297	
Caucasian/White/European	189	63.0
Native/Aboriginal/Metis	81	27.0
Other	27	9.0
Missing	3	1.0
Highest grade completed (0 – 12)	239	10.5 (2.2)
Completed high school?	235	
Yes	102	34.0
No	133	44.3
Missing	65	21.7
Employed at index?	255	
Yes	121	39.3
No	134	44.4
Missing	45	15.0
Victim age (15.59 – 60.62)	300	32.9 (9.1)
Relationship with index victim	296	
Current marital or cohabiting partner	154	51.3
Former marital or cohabiting partner	81	27.0
Current dating partner	39	13.0
Former dating partner	22	7.3
Missing	4	1.3

Length of relationship	295	
0 – 6 months	28	9.3
7 – 11 months	36	12.0
12 – 23 months	46	15.3
24+ months	185	61.7
Missing	5	1.7
Follow-up time in years (0.94 – 7.86)	293	4.0 (1.5)
Time at risk for intimate partner violence in days		
Overall (3 – 3002)	266	1036.2 (684.1)
Recidivists only (3 – 2296)	99	564.7 (487.3)
Time at risk for any violence in days		
Overall (2 – 3002)	274	883.0 (676.6)
Recidivists only (2 – 2322)	136	504.8 (479.9)

$N = 300$ .

### ***Sources of Information***

Cases were coded using threat assessment files available at ITRAC. Each threat assessment case file included a referral form, threat assessment report, official criminal records, and police occurrence documents describing the violent occurrence(s). The referral form contained information on the index offence, such as demographic information of the perpetrator, victim, and children present, and documented historical occurrences of IPV. The threat assessment report, which was created by the assigned certified threat assessor, outlined the case history of each man, including his childhood history, employment history, substance abuse history, and criminal convictions/sentences, and provided an overview of his intimate relationship history, including any previous intimate partners and violent occurrence(s). The threat assessment report also included a risk assessment report and case management recommendations conducted by the certified threat assessor. Other documents in the case file include official federal (Canadian Police Information Centre [CPIC]) and provincial (Justice Online Information Network [JOIN])

criminal record documents and official police occurrence documents, which comprised investigator notes (both handwritten and typed), documented evidence, and arrest details. Other important documents that were less consistently available included a supplementary ODARA report completed by either a frontline police officer or the intake threat assessor (or case coordinator) at ITRAC, mental health reports from the solicitor general, the perpetrator's and/or victim's Alberta health records, and children's services documents, and the History Evaluation and Assessment Tool (HEAT). The HEAT is a victim interview with information related to the perpetrator's history of domestic and non-domestic violence (both reported and unreported), the relationship between the perpetrator and the victim, the perpetrator's mental health and substance use, and the victim's concern for future violence.

For follow-up data, current CPIC, JOIN, and Offender Movement History Reports from the Justice and Solicitor General were requested and retrieved to identify any violent and nonviolent post-index offences. Any violent charges identified post-index were recorded and the corresponding police occurrence reports containing details of the offence (i.e., persons involved) were retrieved and used to identify the victim.

### *Measures*

Four coding forms and a manual to operationalize offence, perpetrator, and victim characteristics were developed for a larger, SSHRC-funded study mentioned earlier (Appendix A). Items taken from the following measures and guidelines of IPV perpetrator risk were included in these forms and extracted for this study.

**Ontario Domestic Assault Risk Assessment.** The ODARA (Appendix C) is a 13-item, actuarial tool designed to assess the risk of male-to-female IPV recidivism

among men who have been identified as having committed at least one act of IPV (Hilton et al., 2004; Hilton et al., 2010) and was developed in collaboration with the Ontario Provincial Police (Rice et al., 2010). It was intended for use by frontline police officers and other workers on the scene of an IPV call (Rice et al., 2010). Items cover a variety of risk factors including police and criminal record information (e.g., prior domestic violence incident, history of non-domestic incident, prior sentence of 30 days or more, previous breach of any type of conditional release or court orders), index incident factors (e.g., threats to harm/kill, confinement of the partner, victim's concern about future assaults), relationship context (e.g., more than one child altogether, victim has biological children from previous relationships), assault history (e.g., perpetrator is violent outside of the relationship, perpetrator has assaulted victim when she was pregnant), indications of substance abuse problem, and barriers to victim support. Each item is scored dichotomously as *Yes* (i.e., present; score = 1) or *No* (i.e., not present; score = 0) and summed to generate a total risk score, with the option to prorate for up to five items where the information is incomplete or unclear without significantly jeopardizing the risk prediction estimate and invalidating the final risk rating (Hilton, 2021). In the current sample, 49 ODARA scores were prorated because 42 cases were missing one ODARA item and seven cases were missing two ODARA items. The total score can range from 0 to 13, and can be placed into risk categories, or "bins," from 1 (*lowest risk*) to 7 (*highest risk*), with research demonstrating incremental increases in the probability of IPV recidivism with each increase in category (Hilton et al., 2004; Hilton et al., 2010).

Published research has shown that the ODARA predicts IPV recidivism with areas under the receiver operating characteristic curve (or AUC) ranging from .65 to .74

(Hilton & Harris, 2009; Hilton et al., 2008), and an average AUC of .67 to .69 (Messing & Thaller, 2013; van der Put et al., 2019), suggesting good predictive validity. The ODARA total scores have also demonstrated excellent interrater reliability ( $ICC = .84$  to  $.95$ ; Hilton et al., 2010; Hilton et al., 2021) and acceptable internal consistency ( $\alpha = .40$  to  $.65$ ; Hilton et al., 2008; Hilton et al., 2020). In addition, Hilton and colleagues (Hilton et al., 2008; Hilton et al., 2020) found significant positive relationships between the ODARA total score and SARA version 2 ( $r = .60, p < .01$ ) and version 3 ( $r = .48, p < .01$ ), and B-SAFER ( $r = .40, p < .01$ ), DA ( $r = .43, p < .001$ ), DVSI ( $r = .52, p < .001$ ), demonstrating the tool's convergent validity. The ODARA is intended to be scored from police and criminal justice records with or without a victim interview, and studies have shown that the ODARA can be scored reliably from archival data in Canada (e.g., Hilton et al., 2010); therefore, retrospective scoring in IPV cases can be reliable even without a proxy interview.

**Spousal Assault Risk Assessment.** The SARA is a 20-item structured professional judgment guide developed as an inventory of risk factors for IPV cases (Kropp et al., 1994, 1995, 1999, 2008). The items are grouped into four subscales: *criminal history*, *psychosocial adjustment*, *spousal assault history*, *index offence*, and other considerations (Appendix D). Most items are scored using a 3-point nominal scale, where '0' indicates *No or Absent*, '1' indicates *Possibly or Partially Present*, and '2' indicates *Yes or Present*. Based on the scoring of the 20 items, the rater makes a summary risk judgment indicating that the individual is at low-, moderate-, or high-risk for committing future IPV. Although the formal use of the SARA involves an overall judgment of future IPV risk by the clinician that is guided by the presence or absence of

items, most studies have quantified the items and summed them into a total score. Using this latter approach, past studies have consistently shown that the SARA has good predictive validity using file information only (e.g., Belfrage et al., 2012; Hilton et al., 2004; Jung & Buro, 2017; Olver & Jung, 2017) and that the SARA total score can predict future IPV with a weighted average AUC of .63 (Helmus & Bourgon, 2011; Messing & Thaller, 2013). In addition, Kropp and Hart (2000) found that the SARA had excellent interrater reliability of summed scores ( $ICC = .84$ ), good interrater reliability of summary risk ratings ( $ICC = .65$ ), and good internal consistency ( $\alpha = .78$ ).

**Brief Spousal Assault Form for the Evaluation of Risk.** The B-SAFER is 15-item version of the SARA designed for use by police officers (Kropp et al., 2010; Kropp & Hart, 2004). Note that the B-SAFER also includes *past* (i.e., over 4 weeks prior to assessment) and *recent* (i.e., during the 4 weeks prior to assessment) for each item, resulting in a total of 30 items. As with the SARA, assessors score the B-SAFER items, which then inform a summary rating of risk. The B-SAFER was developed with the intention of improving upon the limitations of the SARA. For the purposes of examining factor structures in the present dissertation, however, *recent* items were excluded because most items were coded as '0', given that information during the 4 weeks prior to assessment was often unavailable. In addition, interrater reliability of the B-SAFER recent items was poor ( $ICC = .22$ ) in the present dissertation (also reported in Hilton et al., 2021), suggesting that these items were not reliable, and thus, were excluded from the factor analysis.

Like the SARA, the authors recommend the B-SAFER to be used as a guide, rather than as an actuarial measure, though empirical studies have found some support for

its predictive validity using the summed risk score (e.g., Au et al., 2008; Belfrage & Strand, 2008; Serie et al., 2017). Published literature reports that B-SAFER total scores predicted general recidivism in 40 men imprisoned for a violent or other offence against an intimate partner (AUC = .76; Loinaz, 2014), but did not significantly predict IPV recidivism in 158 men court-ordered to treatment for IPV violence or stalking (AUC = .55; Gerbrandij et al., 2018). Similarly, mixed findings have been reported for the B-SAFER summary risk rating. For example, in one study, both total scores and the summary risk rating predicted IPV recidivism among 249 men with a police record of IPV (AUC = .70 for scores, AUC = .69 for ratings; Storey et al., 2014). However, police officers' summary risk ratings were not significantly related to new assaults against an intimate partner among 216 men (test statistics were not reported; Belfrage & Strand, 2012). Svalin et al. (2018) tested summary risk ratings of likelihood and severity for their association with several outcomes in 301 assessments (including 11 cases of female-perpetrated offences) and reported only one significant effect. To date, there is little published research on the B-SAFER, but the available studies suggest that the measure has reasonable IRR.

### ***Procedure***

As part of the larger study mentioned above, this research was reviewed and approved by the research ethics boards at Waypoint Centre for Mental Health Care, MacEwan University, Carleton University, and University of Alberta, and a formal notice of collaboration was obtained from ITRAC. I identified and selected 300 cases between 2010 and 2016 based on two criteria. First, cases must have had full or provisional threat assessment reports, because the presence of these types of reports indicated that there

were sufficient documents and information available to reliably extract, and accurately code, data. Second, cases must have an identifiable index offence that matched with the ODARA-defined index offence (Hilton et al., 2004):

*“[The] index assault for any assessment should be the most recent incident known to the police in which the man engaged in violence against a female domestic partner. A domestic partner is defined as a woman that the perpetrator is or was married to, is or was in a common-law relationship with, lives or did live with for any length of time, [or is or was in a dating or sexual relationship with]. The index assault requires physical contact with the victim or a credible threat of death with a weapon in hand in her presence... Criminal charges do not have to be laid for a domestic incident to qualify as the index assault.”*

As mentioned above, a coding form and manual to operationalize offence, perpetrator, and victim characteristics was developed for a larger study. For that study, the lead investigators and I met for a multi-day meeting during which variables of interest were operationally defined and tested on six case files. These six cases were coded (and the codes were agreed upon by the lead investigators) on Forms A-C (Appendix A). From this meeting, a total of six coding forms were created for six case files. Two of these cases were used for training purposes; two were used to test RAs prior to allowing them to code independently; and two were used to ensure coding reliability (i.e., cases that were included in each RA's coding list to ensure that RAs were not becoming complacent with their coding). These forms were created for the purpose of ensuring interrater reliability (IRR). In addition, I completed the Foundations of Violence Risk Assessment

and Management online training, which is a 40-hour course that provides professionals with general risk assessment and management principles and focuses on the most common forms of violence, including intimate partner violence and stalking. Prior to coding and extracting data independently, each RA completed a training process that involved two stages. First, RAs received standard training on the risk assessment instruments, including online training for the ODARA at <https://odara.waypointcentre.ca> (described by Hilton & Ham, 2015) and for the structured professional judgment guideline instruments (SARA and B-SAFER) at <https://training.concept.paloaltou.edu/collections>. Second, I extensively trained RAs for five full days. Training during the first three days included reviewing documents, becoming familiar with the types of information provided in each document (e.g., CPIC, JOIN, police reports, etc.) and collaboratively coding the two training cases developed during the initial meeting with the primary investigators. RAs then completed a coding form independently for one test case. Following adequate accuracy on the test (i.e., at least 70% agreement on SPJ items and at least 80% agreement on actuarial items), RAs were given a list of up to 30 cases to code, which also included the two “complacency” test cases mentioned above, to ensure continued adherence to coding instructions and avoid coding drift or complacency.

Note that prior to the start of data extraction, one fully trained RA and I independently coded 32 cases randomly chosen from the full list of 300 selected ITRAC cases to investigate IRR. Any discrepancies were agreed upon, and any confusion or ambiguity in the manual or coding forms were reworded for clarity. Once acceptable IRR was established, the RAs and I began coding Forms A-C for the 300 cases. Fully trained

undergraduate and graduate RAs then reviewed each case file containing threat assessor reports and supporting documentation (see Sources of Information) and quantified the information using coding forms (Appendix A). Coding was completed from 2016 through to 2021. Information on reoffending and other relevant behaviour after the assessment date was unknown to the research assistants who independently coded each file.

Importantly, revisions to the manual and coding forms were an ongoing process; that is, the RAs and I, accompanied by one of the lead investigators, met biweekly from 2016 to 2018 to resolve any issues with the case files or coding. In addition, the lead investigators and I also met monthly to resolve any outstanding issues.

### *Data Analyses*

**Exploratory Factor Analysis.** I explored the factor structure of the ODARA, SARA, and B-SAFER past items using exploratory factor analysis (EFA) in Mplus (Muthen & Muthen, 2015). In EFA, items covary if they belong to the same underlying latent factor; thus, items that significantly load onto the same latent factor are believed to assess the same, or similar, underlying construct. I conducted the EFA in Mplus as opposed to SPSS because Mplus uses polychoric and tetrachoric correlation—rather than Pearson's  $r$  correlation—matrices of the measured items to reveal any underlying processes in the risk measures (Floyd & Widaman, 1995). These correlations are ideal with linearly related, ordinal, and binary variables (Flora & Curran, 2004; Holgado-Tello et al., 2010), whereas Pearson's  $r$  correlations often produce biased estimates when measured items are ordinal in nature, and particularly when data are not normally distributed (Brown, 2006; Holgado-Tello et al., 2010; O'Connor, 2009). After I examined the polychoric correlation matrix for factorability (i.e., many correlations above .30) and

multicollinearity (i.e., correlations above .80), factors were extracted using the weighted least square (WLSMV) estimator method because it is recommended by Muthen and Muthen (2015) and it is generally robust against small sample sizes, any violations of normality, and performs well regardless of ceiling and floor effects in ordinal data (Brown, 2006; Flora & Curran, 2004).

Following the extraction of factors, I determined the number of factors to retain using a combination of various retention methods, such as the scree plot, Kaiser's criterion, parallel analysis, and Velicer's minimum average partial (MAP), as suggested in prior research (Henson & Roberts, 2006). After selecting the number of factors to retain, I generated factor scores to be used in subsequent analyses. Factor scores are composite variables which provide information about an individual's placement or ranking on the factors (DiStefano et al., 2009). Factor score computation methods can be either non-refined or refined. Non-refined methods are simple and cumulative procedures, such as summing items included in the factor. Refined methods, on the other hand, are linear combinations of the observed variables which consider what is shared between the item and the factor (i.e., shared variance) and what is not measured (i.e., the uniqueness or error term variance) (Gorsuch, 1983). Refined methods, therefore, are sophisticated and technical approaches that are more exact. Common refined methods use standardized information to create factor scores, producing standardized scores, where values range from approximately -3.00 to +3.00. In the current study, I generated both refined factor scores with Mplus (from here on referred to as *Factor Scores*) and non-refined factor scores by summing raw scores corresponding to all items included in each factor (from here on referred to as *Factor Totals*) to be used in subsequent analyses.

Where possible, I used Factor Scores in analyses because they are standardized and presumably more accurate measurements of individual placements on the factor.

However, given the limited range (i.e., -3.00 to +3.00), this may limit interpretability of results (e.g., Cox regression), in which case I used Factor Totals instead. Next, I rotated the factors to increase interpretability, which is a technique used to discriminate between factors by computing the degree to which items load onto these factors (Field, 2013; Tabachnick & Fidell, 2012). I used the oblique—as opposed to the orthogonal—rotation (Geomin) method because it allows factors to correlate (Costello & Osborne, 2005; Fabrigar et al., 1999; Russell, 2002).

For factor structure fit, I assessed the three fit indices of the chosen model. First, the root mean square error of approximation (RMSEA) assesses the lack of fit in a factor structure relative to a perfect structure (Tabachnick & Fidell, 2012). Second, the comparative fit index (CFI) assesses the factor structure fit relative to a baseline model in which there are no relationships between items (Brown, 2006). Third, the standardized root mean square residual (SRMR) is the average difference between the original correlations in the input matrix and correlations predicted by the factor structure (Brown, 2006). General rules regarding cutoff values for the RMSEA, CFI, and SRMR are less than .06 (Hu & Bentler, 1999), .95 or greater (Brown, 2006), and less than .08 (Hu & Bentler, 1999; Schmitt, 2011), respectively. However, there is much debate about the validity of these cut-off values (e.g., Schmitt, 2011) and, therefore, they were only used as guidelines, as suggested by Marsh et al. (2004). Finally, items have conventionally been classified into their respective factors using the magnitude of factor loadings. For example, items with factor loadings of greater than .30 are said to meaningfully load onto

a given factor (Cudeck & O'Dell, 1994; Schmitt & Sass, 2011). In addition, standardized factor loadings can be used to assess whether an item significantly loads onto a particular factor (Cudeck & O'Dell, 1994; Schmitt, 2011; Schmitt & Sass, 2011). For example, a significant factor loading is determined by investigating whether the standardized factor loading significantly differs from zero. To determine the significance level and protect against Type 1 error, I used a correction procedure for correlated factors to compute the appropriate  $\alpha$  level used in prior research (e.g., Cudeck & O'Dell, 1994; Schmitt, 2011). Specifically, I used the following formula:  $\alpha^* = \frac{\alpha}{(im - m[m-1])}$ , where  $\alpha$  is the initial significance and  $i$  is the number of items and  $m$  is the number of factors.  $\alpha^*$  was then divided by 2 to determine the significance level for a two-tailed test of significance. The z-score associated with the determined  $\alpha$  level was then used as the critical point for determining significance.

## Results

In Study 1, data were screened for randomness of missing data, outliers (univariate and multivariate), and normality. First, predictor variables with missing data were explored to ensure that data were missing at random (i.e., missing data did not follow a pattern). After comparing cases with and without missing data for each predictor variable using Chi-square analyses, the two groups did not significantly differ on outcome variables; thus, I concluded that the data were missing at random. Second, I examined variables for univariate and multivariate outliers. For each statistical test, univariate outliers were reduced while maintaining rank order, and there were no multivariate outliers in the current study. Third, I checked for any violations in normality

among the variables and transformed those that were not normal using square root, logarithmic, or inverse transformations, in that order. Only one variable used to conduct AUC analyses (discussed in Study 2 results) continued to violate normality even after being transformed. Where possible, the analyses were run with both parametric (e.g., Pearson's  $r$  correlations) and non-parametric (e.g., Spearman's Rho correlations) statistics. Additionally, all analyses were run both with original variables and with outliers removed/transformed variables, and results were compared. Of note, the results did not change with the modified (i.e., outliers removed, transformed, etc.) variables; therefore, I retained all results with original variables to maintain the raw, unaltered data.

As mentioned above, 32 cases were randomly chosen as cases for interrater reliability (IRR) prior to coding and extracting data for the entire sample. IRR was assessed using intraclass correlation coefficients (ICC) mixed model, absolute agreement, in this sub-sample ( $n = 32$ ). The ODARA (ICC = .84,  $p < .001$ ), SARA (ICC = .70,  $p < .001$ ), and B-SAFER (ICC = .70,  $p < .001$ ) total scores all had good IRR. Note that these results were also reported in Hilton et al. (2021).

### ***Factor Structure of Intimate Partner Violence Risk Measures***

Using Mplus version 8.5 (Muthen & Muthen, 2015), I included 48 items from the ODARA, SARA, and B-SAFER past items in the EFA to assess their underlying factor structure. Any missing data in the SPSS version 27 were coded as '9999' prior to importing into Mplus so that they would be recognized as missing in Mplus (i.e., Mplus output shows errors if any cell is left blank). Of the 300 cases, 49 were missing values on at least one item on the ODARA; therefore, the final sample in the EFA was 251. This is because the ODARA has clear instructions stating that if an item is not clearly present or

not present (i.e., the information is ambiguous or unknown), then the item must be coded as missing.

The polychoric correlation matrix produced by Mplus showed many correlations greater than .30, suggesting that the matrix was factorable. Additionally, the correlation matrix showed 14 correlation coefficients that were .80 and higher in value, suggesting multicollinearity (Field, 2013; Tabachnick & Fidell, 2012). Eleven items were subsequently removed to reduce multicollinearity (Table 2); therefore, the final number of items included in the EFA was 37. The decision to remove one item as opposed to another was based on various elements, such as the item significantly loaded onto more than one factor (i.e., cross-loading), produced factor loadings greater than 1.00 (i.e., Heywood cases, where common factors were estimated to account for 100% or more of the variance, leading to improper factor solutions; Heywood, 1931), was highly correlated with other items, had a smaller factor loading, and had less clearly defined coding instructions (Table 2). For example, many ODARA items were retained because the items had clearer coding instructions, suggesting that the item may have been coded more accurately.

**Table 2**

*Multicollinearity in Exploratory Factor Analysis and Reasons for Removing Certain Items*

Highly Correlated items		Correlation	Removed	Reason
ODARA10: Prior violent incident against a non-domestic victim	ODARA2: Prior non-domestic incident	.98	ODARA10	ODARA10 produced factor loadings >1.00.
SARA2: Past assault of strangers or acquaintances	ODARA2: Prior non-domestic incident	.90	SARA2	ODARA2 had clearer coding instructions.
SARA3: Past violation of conditional release or community supervision	ODARA4: Failure on prior conditional release	.996	SARA3	ODARA4 had clearer coding instructions.
SARA2: Past assault of strangers or acquaintances	ODARA10: Prior violent incident against a non-domestic victim	.92	Both	Both items were previously removed.
SARA7: Recent substance abuse/dependence	ODARA11: Two or more indicators of substance abuse	.91	SARA7	ODARA11 had clearer coding instructions.
B-SAFER9: Substance abuse problems	ODARA11: Two or more indicators of substance abuse	.90	B-SAFER9	B-SAFER9 produced factor loadings >1.00.
B-SAFER9: Substance abuse problems	SARA7: Recent substance abuse/dependence	.91	Both	Both items were previously removed.
B-SAFER7: Intimate relationship problems	SARA9: Recent psychotic and/or manic symptoms	.99	B-SAFER7	B-SAFER7 loaded onto more than one factor.
B-SAFER1: Violent acts	SARA4: Recent relationship problems	.99	B-SAFER1	SARA4 item is more unique in content.
SARA11: Past physical assault	ODARA1: Prior domestic incident	.86	SARA11	ODARA1 had clearer coding instructions.

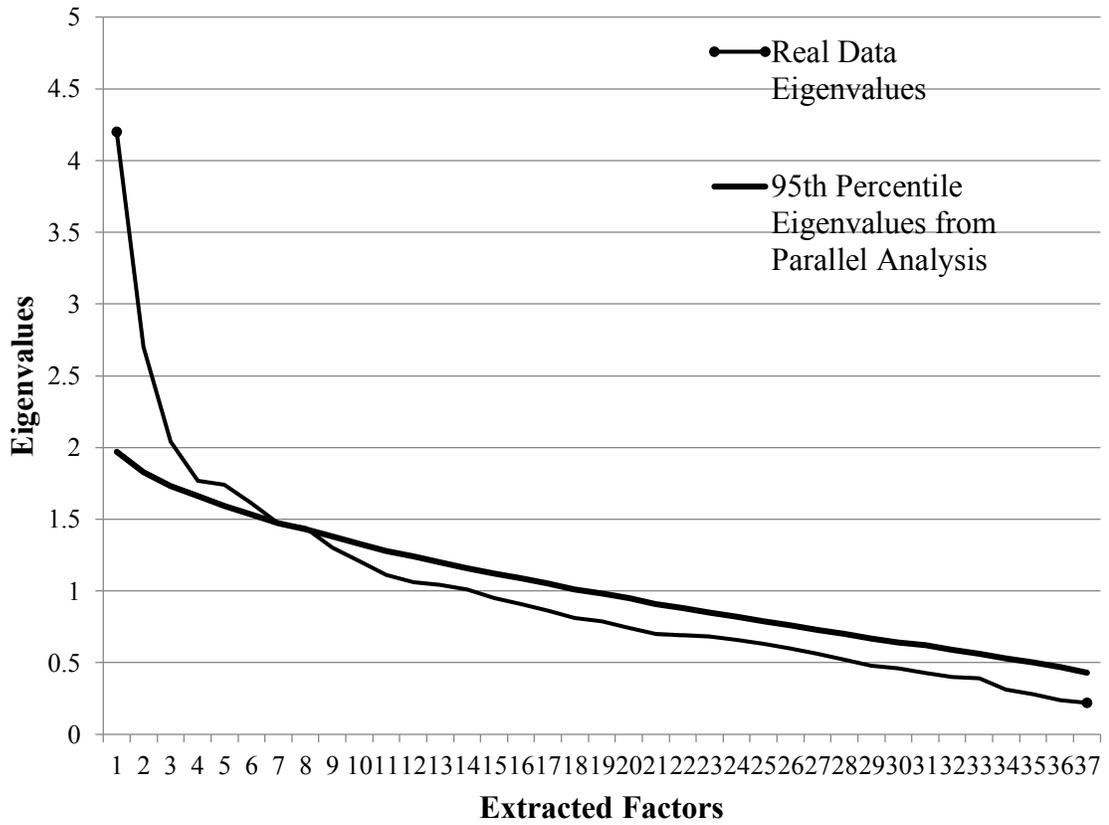
B-SAFER8: Employment problems	SARA5: Recent employment problems	.84	SARA5	SARA5 had lower factor loadings than B-SAFER8.
B-SAFER1: Violent acts	SARA11: Past physical assault	.85	Both	Both items were previously removed.
B-SAFER3: Escalation	SARA14: Recent escalation in frequency or severity of assault	.82	SARA14	SARA14 produced factor loadings >1.00.
BAFER4: Violation of court orders	SARA15: Past violation of “no contact” orders	.85	B-SAFER4	SARA15 had higher interrater reliability.

*Note.* ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

As mentioned above, I used the scree plot, Kaiser's criterion, parallel analysis, and Velicer's minimum average partial (MAP) test to determine the number of factors to retain. First, the scree plot suggested retaining 7 factors (Figure 1). Second, the number of factors corresponding to eigenvalues greater than 1.00 (i.e., Kaiser's criterion) suggested the 13-factor model. Of note, studies have shown that Kaiser's criterion tends to overfactor (O'Connor, 2009; Schmitt, 2011); therefore, this suggestion was given the least weight. Third, I conducted parallel analysis to assist with factor retention, which compares eigenvalues from the original dataset to those obtained from several randomly generated datasets. The purpose is to determine the number of eigenvalues in the original dataset that are greater than the eigenvalues generated by chance alone. Results from the parallel analysis suggested retaining 9 factors (Table 3). Finally, I conducted the MAP test, which based factor retention on the amount of systematic variance compared to unsystematic variance in the correlation matrix, following factor extraction. According to the MAP test, the 6-factor model was suggested (Velicer et al., 2000). Considering all retention methods listed above, the 9-, 7-, and 6-factor models were examined further.

**Figure 1**

*Scree Plot from Parallel Analysis Using the 95% Percentile Eigenvalues*



**Table 3**

*Results of the Parallel Analysis Consisting of Eigenvalues and Proportion of Variance Explained for Factors 1 Through 10*

Factors	Initial Eigenvalue	Proportion of Variance Explained Pre-rotation	95 <sup>th</sup> Percentile Eigenvalues
1	4.20	11.35%	1.97
2	2.70	7.30%	1.83
3	2.04	5.51%	1.73
4	1.77	4.78%	1.66
5	1.74	4.70%	1.59
6	1.61	4.35%	1.53
7	1.47	3.97%	1.47
8	1.44	3.89%	1.43
9	1.30 <sup>a</sup>	3.51%	1.38
10	1.21	3.27%	1.33

*Note.* The proportion of variance explained applies to the unrotated factor structure solution. Only the results for the raw data permutations ( $n = 1,000$  data sets) 95th percentile eigenvalues are presented in the table as the same results were obtained when computer-generated normally distributed data were used ( $n = 5,000$  data sets).

<sup>a</sup> The point at which the parallel analysis 95<sup>th</sup> percentile eigenvalue exceeds the initial eigenvalue.

Table 4 displays the fit indices for 1- to 9-factor models. Model fit statistics for the 9-factor structure indicated good fit, with RMSEA of .014 (90% CI [.000, .027]), CFI of .987, and SRMR of .054. However, when examining factor loadings, nine items loaded onto more than one factor (i.e., cross-loading), suggesting that the factors were not stable. In addition, the estimated residual variances, which are the variances of the observed variables after accounting for all shared variance in the EFA model, contained negative residual variances, indicating that the model is not a good fit. I then examined the 7-

factor model, which had good fit, with RMSEA of .025 (90% CI [.013, .035]), CFI of .949, and SRMR of .068; however, six items loaded onto multiple factors, and the factors were not interpretable, such that the item contents were not similar enough to be labelled in this model. For example, items that significantly loaded onto factor 7 included items pertaining to both the perpetrator's mental health (e.g., mental health problems, recent psychotic and/or manic symptoms) and the victim's barriers to support (e.g., more than one child altogether, victim's biological child from a previous partner, barriers to victim support). Finally, I examined the 6-factor model. The model fit indices for the 6-factor model were as follows: RMSEA of .031 (90% CI [.022, .039]), CFI of .916, and SRMR of .076. Although the CFI did not meet the cutoff value of .95 or greater (Brown, 2006) recall that these cutoff values are only used as guidelines, as there is much debate about their validity (Marsh et al., 2004; Schmitt, 2011). Furthermore, there were only five items that cross-loaded, and the factors appeared to be more interpretable than factors from the 7-factor model; that is, items similar in content clustered together. Therefore, the 6-factor model seemed to fit these data best, and together, the factors accounted for 37.99% of the variance (see Table 3).

**Table 4**

*Model Fit Statistics of Models 1 Through 9 for the Exploratory Factor Analysis*

Model	RMSEA (90% CI)	CFI	SRMR
1-factor	.066 (.061, .071)	.496	.143
2-factor	.055 (.049, .060)	.669	.119
3-factor	.048 (.042, .054)	.764	.105
4-factor	.042 (.036, .049)	.824	.096
5-factor	.036 (.028, .043)	.880	.084
6-factor	.031 (.022, .039)	.916	.076
7-factor	.025 (.013, .035)	.949	.068
8-factor	.018 (.000, .030)	.975	.059

9-factor	.014 (.000, .027)	.987	.054
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*Note.* RMSEA (Root Mean Square Error of Approximation) should be less than .06, CFI (Comparative Fit Index) should be .95 or greater, and SRMR (Standardized Root Mean Square Residual) should be less than .08 to indicate good fit.

To interpret the factor structure of the 6-factor model, I examined the rotated factors for factor loadings greater than .30 (Stevens, 2002). In addition, I used standardized factor loadings to further assess whether an item significantly loaded onto a given factor (Cudeck & O'Dell, 1994; Schmitt & Sass, 2011) (Table 5). Using the formula introduced above (see Data Analysis), I determined that a z-score (i.e., standardized factor loading) of 3.65 or higher was considered significant. Four items did not significantly load onto a factor, namely, ODARA item 6 (*Confinement of the partner at the index assault*), SARA item 8 (*Recent suicidal or homicidal ideation/intent*), SARA item 9 (*Recent psychotic and/or manic symptoms*), and B-SAFER item 3 (*Escalation*). Items that significantly loaded onto more than one factor were then placed in a chosen factor based on the internal consistency of the factor and the content of the item. For Factor 1, the contents of all items that cross-loaded onto this factor did not seem to fit with the rest of the non-cross-loaded items, and the removal of these items did not significantly change the internal consistency of Factor 1; therefore, only items that exclusively loaded onto Factor 1 were retained in Factor 1. Factor 1 had poor internal consistency ( $\alpha = .56$ ) and consisted of six items that concern the victim; thus, I labeled this factor *Barriers to Victim Support*. For Factor 2, three items cross-loaded onto this factor. One item did not seem to fit with the rest of the items in content (i.e., ODARA item 4, *Failure on prior conditional release*) and the removal of this item did not

significantly change the internal consistency of Factor 2, which was acceptable ( $\alpha = .65$ ). Factor 2 consisted of nine items that seemed to reflect the man's antisocial patterns and psychosocial adjustment; therefore, I named this factor *Antisocial Patterns and Psychosocial Adjustment*. For Factor 3, three items cross-loaded onto this factor. One item did not appear to fit with the rest of the items in content (i.e., ODARA 3, *Prior custodial sentence of 30 days or more*) and the removal of this item did not significantly change the internal consistency of Factor 3, which was poor ( $\alpha = .52$ ). Factor 3 consisted of five items specific to IPV and conditional release violations; thus, I named this factor *IPV-Specific and Technical Violations*. The two items that comprised Factor 4 reflected threats (i.e., ODARA item 5, *Threat to harm or kill at the index assault*; and SARA item 19, *Use of weapons and/or credible threats of death [index only]*); thus, I labeled this factor *Threats*, which had good internal consistency ( $\alpha = .70$ ). The seven items that comprised Factor 5 appeared to reflect severe IPV items and denial and negative attitudes regarding IPV; thus, I labeled this factor *Severe IPV and Negative Attitudes*, which had good internal consistency ( $\alpha = .70$ ). Factor 6 consisted of four items that reflect the victim's fear of the perpetrator; thus, I named this factor *Victim Concern*, which had poor internal consistency ( $\alpha = .53$ ).

**Table 5**

*Rotated Factor Loadings and Standardized Rotated Loadings for the 6-Factor Model of All Items Included in the Exploratory Factor Analysis*

Ontario Domestic Assault Risk Assessment	Rotated Factor Loading (Standardized Rotated Factor Loading)					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1. Prior domestic incident	<b>.33</b> (2.67)	.12 (0.54)	<b>.54</b> (3.37)	.15 (0.92)	.27 (1.66)	-.06 (-0.08)
2. Prior non-domestic incident	.01 (0.11)	<b>.61</b> (5.23)	.21 (0.90)	.01 (0.10)	-.16 (-1.47)	-.02 (-0.18)
3. Prior custodial sentence of 30 days or more	.08 (0.93)	<b>.69</b> (4.81)	<b>.47</b> (1.80)	-.07 (-0.93)	-.11 (-1.06)	.01 (0.16)
4. Failure on prior conditional release	-.11 (-0.82)	<b>.53</b> (3.13)	<b>.72</b> (3.44)	.04 (0.62)	.04 (0.62)	-.05 (-0.62)
5. Threat to harm or kill at the index assault	-.08 (-1.14)	.00 (-0.01)	-.02 (-0.34)	<b>.80</b> (9.47)	.13 (0.99)	.07 (0.94)
6. Confinement of the victim at the index assault	-0.27 (-2.65)	.03 (0.34)	.07 (0.67)	.03 (0.31)	.08 (0.83)	.27 (2.70)
7. Victim concern about future assaults	-.038 (-0.71)	-.004 (-0.07)	-.07 (-0.77)	.24 (2.10)	-.15 (-1.15)	<b>.88</b> (9.34)
8. More than one child	<b>.70</b> (8.43)	-.14 (-1.28)	.021 (0.29)	-.01 (-0.18)	.01 (0.09)	-.02 (-0.24)
9. Victim’s biological child from a previous partner	<b>.52</b> (6.24)	-.04 (-0.44)	.17 (1.65)	-.05 (-0.67)	-.15 (-1.37)	.18 (1.78)

11. Two or more indicators of substance abuse	.12 (1.07)	<b>.47</b> <b>(4.08)</b>	.11 (0.52)	-.09 (-0.78)	-.02 (-0.20)	-.12 (-1.03)
12. Assault on the index victim when she was pregnant	<b>.31</b> <b>(3.00)</b>	.07 (0.75)	-.05 (-0.47)	.001 (0.01)	<b>.39</b> <b>(3.83)</b>	-.23 (-1.96)
13. Barriers to victim support	<b>.72</b> <b>(7.32)</b>	-.17 (-1.28)	.03 (0.47)	-.08 (-0.78)	-.09 (-0.77)	-.03 (-0.35)
<hr/>						
Spousal Assault Risk Assessment						
1. Past assault of family members	<b>.33</b> <b>(3.40)</b>	<b>.50</b> <b>(5.63)</b>	-.08 (-0.42)	.14 (1.55)	.02 (0.36)	-.06 (-0.74)
4. Recent relationship problems	.06 (0.55)	-.14 (-1.17)	.06 (0.59)	-.04 (-0.40)	.21 (1.76)	<b>.34</b> <b>(3.14)</b>
6. Victim of and/or witness to family violence as a child or adolescent	.10 (1.11)	<b>.31</b> <b>(3.34)</b>	-.15 (-1.01)	.004 (0.05)	.09 (0.86)	.09 (0.84)
8. Recent suicidal or homicidal ideation/intent	.06 (0.65)	-.04 (-0.43)	.03 (0.32)	.23 (2.75)	-.03 (-0.37)	.21 (2.39)
9. Recent psychotic and/or manic symptoms	-.15 (-1.20)	.03 (0.28)	-.02 (-0.13)	.16 (1.23)	.04 (0.31)	.26 (1.98)
10. Personality disorder with anger, impulsivity, or behavioral instability	-.07 (-0.84)	<b>.40</b> <b>(4.96)</b>	-.05 (-0.37)	-.05 (-0.67)	.13 (1.32)	.29 (3.07)
12. Past sexual assault/sexual jealousy	.09 (1.00)	-.19 (-2.14)	.21 (1.84)	-.13 (-1.41)	<b>.41</b> <b>(3.48)</b>	.12 (1.29)
13. Past use of weapons and/or credible threats of death	.001 (0.01)	.02 (0.22)	.28 (2.53)	.08 (0.81)	<b>.32</b> <b>(2.84)</b>	.15 (1.48)
15. Past violation of “no contact” orders	-.02 (-0.32)	.01 (0.05)	<b>.76</b> <b>(8.32)</b>	-.05 (-0.68)	.22 (1.29)	-.002 (-0.03)

16. Extreme minimization or denial of spousal assault history	.02 (0.34)	-.16 (-2.16)	.001 (0.10)	.002 (0.02)	<b>.62</b> <b>(9.00)</b>	-.02 (-0.24)
17. Attitudes that support or condone spousal assault	.01 (0.20)	-.02 (-0.48)	-.19 (-1.16)	.002 (0.04)	<b>.92</b> <b>(16.46)</b>	-.28 (-2.83)
18. Severe and/or sexual assault	-.09 (-0.94)	.04 (0.39)	<b>.31</b> (3.55)	.07 (0.85)	-.002 (-0.03)	.08 (0.78)
19. Use of weapons and/or credible threats of death	.04 (0.89)	-.04 (-0.72)	.19 (1.59)	<b>.98</b> <b>(13.07)</b>	-.07 (-0.78)	-.04 (-0.90)
20. Violation of “no contact” order	.04 (0.45)	-.04 (-0.38)	<b>.45</b> <b>(4.96)</b>	.04 (0.47)	.03 (0.35)	.28 (2.77)

Brief Spousal Assault Form for the Evaluation of Risk

2. Violent threats or thoughts	-.01 (-0.11)	.05 (0.53)	.12 (0.91)	.23 (2.21)	<b>.50</b> <b>(4.21)</b>	.15 (1.24)
3. Escalation	.12 (1.14)	-.12 (-1.40)	.06 (0.64)	.16 (1.82)	.17 (1.75)	.25 (2.90)
5. Violent attitudes	-.04 (-0.88)	.003 (0.06)	.07 (0.43)	-.06 (-0.93)	<b>.93</b> <b>(18.06)</b>	.03 (0.46)
6. General criminality	-.02 (-0.42)	<b>.70</b> <b>(7.18)</b>	.15 (0.61)	-.17 (-2.26)	-.01 (-0.09)	.07 (0.81)
8. Employment problems	.17 (1.71)	<b>.41</b> <b>(4.59)</b>	.08 (0.51)	.04 (0.47)	.05 (0.55)	.06 (0.61)
10. Mental health problems	-.02 (-0.19)	<b>.34</b> (3.63)	-.23 (-1.74)	.03 (0.44)	.10 (0.78)	.22 (2.02)
11. Inconsistent attitudes or behaviour	<b>.41</b> <b>(4.84)</b>	.09 (0.86)	.16 (1.32)	.01 (0.18)	.10 (0.95)	.14 (1.48)

12. Extreme fear of perpetrator	.19 (1.84)	.00 (0.003)	-.01 (-0.09)	-.06 (-0.83)	.03 (0.50)	<b>.85</b> <b>(13.68)</b>
13. Inadequate support or resources	<b>.46</b> <b>(5.05)</b>	.05 (0.69)	-.25 (-2.09)	.14 (1.41)	.21 (1.67)	.11 (0.95)
14. Unsafe living situation	.25 (2.61)	.06 (0.66)	-.17 (-1.74)	-.05 (-0.69)	.05 (0.49)	<b>.34</b> <b>(3.57)</b>
15. Health problems	<b>.50</b> <b>(6.29)</b>	.01 (0.17)	-.10 (-0.91)	.13 (1.35)	.06 (0.57)	-.04 (-0.48)

*Note.* Unstandardized factor loadings greater than .30 and standardized factor loadings greater than 3.65 (critical z-score),  $\alpha = .00013$  are considered significant. Bolded values indicate significant loading on the factor. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

After determining where to place items, total scores for each factor were then computed to generate six *Factor Totals* to be used in subsequent analyses. In addition, six *Factor Scores* were generated from Mplus (see Data Analysis section for description), where individual item scores were weighted according to the strength of their relationship with each factor. Given that 49 cases were missing scores on ODARA items, Factor Scores were only generated for 251 cases. I screened for whether cases missing Factor Scores were missing at random or whether the missing data was related to other variables in the dataset. After statistically comparing the means of cases with and without missing data on variables of interest (e.g., recidivism outcomes, time-at-risk, etc.), results were not significantly different, indicating that the data were missing completely at random. Therefore, these cases were excluded. No other assumptions (e.g., univariate and multivariate outliers, normality) were violated with respect to the Factor Totals and Factor Scores for the full sample. Table 6 displays Cronbach's  $\alpha$ , means, standard deviations, and range of scores for Factor Totals and Factor Scores. Factor Scores were used to examine the bivariate relationships between factors (Table 7). Interestingly, Severe IPV and Negative Attitudes was positively significantly related to all other factors, with small to large effect sizes ( $r = .13$  to  $.41$ ). In addition, Antisocial Patterns and Psychosocial Adjustment was positively significantly associated with IPV-Specific and Technical Violations ( $r = .24$ ). Victim Concern was also positively significantly associated with Threats, with a small effect size ( $r = .14$ ). All other relationships were non-significant.

**Table 6**

*Cronbach's  $\alpha$ , Means, Standard Deviations, and Minimum and Maximum Values for Factor Sums and Factor Scores*

Factor (number of items)	Factor Sums ( $n = 300$ )			Factor Scores ( $n = 251$ )	
	$\alpha$	$M$ ( $SD$ )	Min. – Max.	$M$ ( $SD$ )	Min. – Max.
Factor 1: Barriers to Victim Support (6)	.56	6.75 (2.70)	0 – 13	-0.02 (0.78)	-1.88 – 2.05
Factor 2: Antisocial Patterns and Psychosocial Adjustment (9)	.65	9.79 (3.47)	1 – 16	-0.04 (0.78)	-2.16 – 1.81
Factor 3: IPV-Specific and Technical Violations (5)	.52	5.22 (2.23)	0 – 9	-0.05 (0.76)	-1.66 – 2.37
Factor 4: Threats (2)	.70	1.59 (1.32)	0 – 3	-0.03 (0.62)	-1.36 – 1.14
Factor 5: Severe IPV and Negative Attitudes (7)	.70	8.64 (2.95)	0 – 13	-0.05 (0.83)	-1.96 – 1.77
Factor 6: Victim Concern (4)	.53	4.19 (1.76)	0 – 7	-0.03 (0.80)	-2.34 – 2.03

*Note.* Sample sizes ( $n$ ) vary because *factor scores* were only generated for cases with complete data (i.e., cases excluded listwise).

Cronbach's  $\alpha$  are based on the consistency between items included in each factor. Factor sums = sum of items included in each factor;

Factor scores = scores for each factor generated from the exploratory factor analysis in Mplus.

**Table 7***Bivariate Correlations Between the Six Factors Retained from the Exploratory Factor Analysis*

Factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1: Barriers to Victim Support	-	.12	.11	.01	<b>.28***</b>	.11
Factor 2: Antisocial Patterns and Psychosocial Adjustment	<b>.13*</b>	-	<b>.24***</b>	.01	<b>.18**</b>	.06
Factor 3: IPV-Specific and Technical Violations	.10	<b>.26***</b>	-	.03	<b>.13*</b>	.06
Factor 4: Threats	.01	.01	.01	-	<b>.16*</b>	<b>.14*</b>
Factor 5: Severe IPV and Negative Attitudes	<b>.29***</b>	<b>.17**</b>	<b>.13*</b>	<b>.16*</b>	-	<b>.41***</b>
Factor 6: Victim Concern	.11	.07	.06	.12	<b>.38***</b>	-

*Note.*  $N = 251$ . Pearson's  $r$  (parametric) correlations above the diagonal and Spearman's rho (non-parametric) correlations below the diagonal and are based on factor scores generated from the exploratory factor analysis in Mplus.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

## Discussion

The aim of Study 1 was to explore the underlying factor structure of combined items from the ODARA, SARA, and B-SAFER. As hypothesized and consistent with past research (i.e., Hilton et al., 2010; Pham & Jung, 2021), results from the EFA revealed that IPV risk is multidimensional. More specifically, items from the ODARA, SARA, and B-SAFER formed six distinct item clusters, suggesting that at least six distinct factors underlie IPV risk. Findings also suggest that, while the risk assessment measures are assessing similar underlying constructs, they are also assessing different constructs. For example, Factors 3 (*IPV-Specific and Technical Violations*) and 4 (*Threats*) did not include any B-SAFER items, indicating that these measures are not interchangeable.

Generally consistent with hypotheses above, these factors reflected several constructs, namely, barriers to victim support, antisocial patterns and psychosocial adjustment, IPV-specific and technical violations, threats, severe IPV and attitudes supportive of IPV, and victim concern. Moreover, index offence items from the three measures did not cluster together as previously found (e.g., Pham & Jung, 2021). Rather, they were distributed across factors in the current study, and one index item (ODARA 6, *Confinement of the partner at the index assault*) did not significantly load onto a factor, suggesting that index offence may not underlie IPV risk. Indeed, characteristics of the index offence as a risk factor for IPV recidivism has been mixed in the literature, and many studies have found that severity of the index offence is not uniquely predictive of IPV recidivism (Cattaneo & Goodman, 2005; Fitzgerald & Graham, 2016). The literature has yet to demonstrate the unique information that characteristics of the index offence

would contribute to the prediction of IPV recidivism that is not already captured by other risk factors. For example, any use of a weapon, which includes past and index use, in the perpetration of IPV has been consistently demonstrated to be predictive of IPV recidivism (Kingsnorth, 2006). Thus, teasing apart index use of a weapon from past use would not likely result in a significant increase in our understanding of IPV risk.

Moreover, features of IPV incidents surely fluctuate from one incident to the next, such that one incident may involve the use of a weapon, while a subsequent incident may not, but only features of the latter incident would be considered towards characteristics of the index offence. Thus, this instability may hinder our ability to reliably measure and study this risk factor. Interestingly, Factor 4 contained only two items that pertained to threats or use of weapons at the index offence (i.e., ODARA item 5, *Threat to harm or kill at the index assault*; SARA item 19, *Use of weapons and/or credible threats of death [index only]*), suggesting that certain features of the index offence may be important for IPV risk. Nonetheless, more research is needed to investigate whether severity or other features of the index offence is a factor that is important for, and underlie, IPV risk.

Furthermore, results demonstrated that some constructs, such as antisocial patterns and psychosocial adjustment, IPV-specific and technical violations, and severe IPV and negative attitudes (all of which are generally believed to be distinct) clustered together. For example, the antisocial patterns construct tends to include behaviours such as substance use, prior violence or aggression, and any criminal history, whereas psychosocial adjustment construct tends to include items that enhance or impede an individual's capacity to adapt to the environment, such as employment problems, a history of childhood abuse or witness to IPV, personality disorders, and mental health

problems. However, in the current study, the EFA seems to suggest that these items are assessing the same underlying construct, even though past research has demonstrated that these two constructs are distinct (e.g., Hilton et al., 2010). Given the number of risk factors found to be related to IPV recidivism discussed above, it is conceivable that IPV risk consists of more than six factors, but perhaps the small sample size in the current study provided insufficient power to separate some constructs. Indeed, three retention methods discussed above (i.e., Scree plot, Kaiser's criterion, parallel analysis) suggested retaining more than six factors. Specifically, the parallel analysis method, which is the least subjective of the retention methods (O'Connor, 2009; Schmitt, 2011), suggested retaining nine factors. Notably, the 9-factor model had good fit according to fit indices (see Table 4), but the model also contained negative residual variances, indicating that the model was not a good fit and the factors were unstable. That said, when examining the factor loadings, though nine items cross-loaded, the factors in the 9-factor model were arguably more interpretable than factors in the 6-factor model (see Appendix F). For example, items included in Factor 2 (*Antisocial Patterns and Psychosocial Adjustment*) in the 6-factor model separated into two clusters in the 9-factor model, suggesting that items in this factor for the 6-factor model are assessing two distinct constructs, as previously found and suggested in the literature (e.g., Hilton et al., 2010; Kropp & Hart, 2000; Kropp et al., 2015). Items from three other factors in the 6-factor model that seem to be assessing distinct constructs (e.g., Factors 1 [*Barriers to Victim Support*], 3 [*IPV-Specific and Technical Violations*] and 5 [*Severe IPV and Negative Attitudes*]) similarly separated into five clusters in the 9-factor model, again suggesting that items in these factors in the 6-factor model are also assessing distinct constructs. Moreover, compared to the 6-factor

model in which four items did not significantly load onto a factor, only one item (SARA item 8, *Recent suicidal or homicidal ideation/intent*) did not significantly load onto a factor in the 9-factor model, further suggesting that the 9-factor model may be a more accurate representation of the number of risk factors that underlie IPV risk.

In addition, in the 6-factor model, the internal consistency of Factors 1 and 3 were poor, and of Factor 2 was only acceptable, further suggesting that items within these factors may be assessing different constructs. Nonetheless, the internal consistency of Factor 6 [*Victim Concern*] was also poor, even though items in this factor also clustered together in the 9-factor model, suggesting that they are assessing the same underlying construct. It is important to note, however, that some items in Factor 6 (e.g., victim concern) were particularly difficult to code in the present dissertation because this information is typically obtained via victim interviews, rather than official files. In fact, the ODARA's *victim concern* item was often coded as 'missing' in the present dissertation and the inter-rater reliability of this item was quite low in this sample (see Hilton et al., 2021), casting doubt on the reliability and validity of this information and, in turn, this factor. Even though Henning et al. (2021) found that victim-reported risk factors obtained via supplemental interviews did not further benefit predictive validity, this factor may have been more reliable with the addition of interview information. Thus, Factor 6's poor internal consistency may reflect the lack of item validity, rather than the inconsistencies in the content of the items. Overall, factors in the 9-factor structure were more consistent with past research and appeared more interpretable than those in the 6-factor structure; however, the small sample size may have reduced the stability of the 9-factor model and its factors. Therefore, future research should utilize a larger sample size

to effectively investigate the factor structure of IPV risk.

Regardless, perhaps these item clusters that would otherwise separate are still similar in some practical way. For example, items that reflect technical violations in Factor 3 (*IPV-Specific and Technical Violations*) are specific to violating conditions intended to prevent future IPV, such as no-contact orders. No-contact orders could be violated in the context of further physical violence towards an intimate partner. This co-occurrence, in turn, illustrates that IPV-specific behaviours that influence the risk of IPV recidivism may be at the root of this factor, suggesting that this factor—though comprising two seemingly distinct constructs—may still be assessing similar information. Moreover, most items from Factor 2 (*Antisocial Patterns and Psychosocial Adjustment*) seem to map onto risk factors from the Central Eight, such as criminal history, procriminal peers/associates, antisocial personality pattern, school/work problems, and substance use. Additionally, the acceptable internal consistency of this factor may reflect the fact that the items are assessing general criminality/antisociality. Given that the Central Eight risk factors have been consistently demonstrated to be predictive of general criminal and violent recidivism (e.g., Andrews & Bonta, 2017; Olver et al., 2014), it is possible that the factor is providing general information to understand the decision to continually engage in criminal activity, including continued violence towards intimate partners, whereas the other factors are more specific to IPV. Although findings in the current study contribute to the understanding that IPV risk is multidimensional, the nature of these factors remains unclear. Future research should investigate the similarities and differences among the previously distinct constructs that clustered together in the current study and how they may similarly be related to IPV recidivism.

### **Study 2: Relationship Between Factors and Recidivism**

The purpose of Study 2 was to examine the extent to which the distinct factors predicted recidivism outcomes, and whether any of the factors were statistically better at predicting recidivism outcomes. Given Pham and Jung's (2021) findings, I hypothesized that antisocial patterns would significantly predict all recidivism outcomes in the current study. In addition, I hypothesized that the antisocial patterns and psychosocial adjustment factor in the current study would also predict recidivism outcomes significantly better than some of the other factors. Furthermore, I investigated the extent to which the distinct factors incrementally predicted any violent and IPV recidivism over time above and beyond other factors. I expected that distinct factors related to antisocial patterns would incrementally predict recidivism outcomes.

#### **Method**

Study 2 setting, sample, and sources of information are the same as those in Study 1.

#### ***Measures***

All measures included in Study 1 (i.e., ODARA, SARA, B-SAFER) were also included in Study 2.

**Recidivism Outcomes.** Criminal record data were available from multiple sources (i.e., locally, provincially, and federally) for 274 cases and were retrieved from 2016 to 2020. Convictions and charges for post-index offences were coded and analyzed to determine if there were (a) any new convictions and/or charges, excluding supervision or technical violations, (b) any new violent convictions and/or charges (e.g., assault, aggravated assault, assault with a weapon, assault causing bodily harm, sexual assault,

wounding, gross indecency, homicide, attempted murder, kidnapping, abduction, forcible confinement, armed robbery, robbery with violence, and threats to cause harm or death with or without a weapon) against anyone (e.g., strangers, acquaintances, intimate partners, family members, etc.), and (c) any new violent convictions and/or charges against a past or current intimate partner. Only incidents following the date of release from custody were examined.

### *Procedure*

In addition to the procedure in Study 1, recidivism data, collected between 2016 and 2020, were requested/retrieved in two steps. First, the CPIC, JOIN, and Offender Movement History Report were retrieved through the operations coordinator at ITRAC, who requested these documents from multiple sources. I used these documents to determine the date of release from custody for the index offence and to record any new (i.e., post-index) violent (including sexual) or non-violent charges and/or convictions. In addition, I also recorded the corresponding police occurrence report number of all new violent charges and/or convictions to request/retrieve the police occurrence report in the second step. The police occurrence report contained details of the offence, including whether the victim was a past or current intimate partner. Hence, this step was used to code for the IPV recidivism outcome (see Measures). Recidivism information (i.e., Form D; Appendix B) was coded by one of the primary investigators, one senior graduate student, and I.

### *Data Analyses*

**Area Under the Receiver Operating Characteristic Curve.** Predictive validities were assessed through the receiver operating characteristic curve (ROC)

analyses in SPSS version 27, which generates an area under the curve (AUC) statistic. AUC is the most used and recommended effect size statistic for evaluating the prediction of recidivism (Helmus & Babchishin, 2017; Rice & Harris, 2005) and is typically preferred to other measures of predictive accuracy that are more affected by the base rate of recidivism (Rice & Harris, 2005). An AUC value whose 95% confidence interval (CI) does not include .50 is considered significantly different from chance prediction. AUC values are generally interpreted as the probability that a randomly selected recidivist will have a higher score on a given risk assessment measure than a randomly selected nonrecidivist. Thus, AUC values over .50 and up to 1.00 indicate prediction exceeding chance, and Rice and Harris (2005) have noted that AUCs of .56 correspond to a small effect, .64 is a medium effect, and over .71 is a large effect. AUCs were conducted for all factors and measures included in this study for all recidivism outcomes.

**Bootstrap Test.** Receiver operating characteristic (ROC) analyses were generated using the pROC statistical package in R (Robin et al., 2011) and all statistical analyses were based on the nonparametric bootstrapping method (Carpenter & Bithell, 2000), with 10000 replications, to test for significant differences in AUCs of two ROC curves. In each replicate, the original measurements were resampled with replacement, where the same number of case and control observations as in the original sample were selected in each bootstrap replicate. Both new ROC curves corresponding to this new sample were built, and the resampled AUCs and their difference ( $D$ ) were computed. Therefore,  $D$  values represent the bootstrap statistics for comparing AUCs. Bonferroni correction was used to account for conducting multiple pairwise comparisons for each recidivism outcome. I used the bootstrap method, as opposed to DeLong's method (DeLong et al.,

1988), because DeLong's method is inappropriate for some nested-model comparisons (Demler et al., 2012), indicating that the bootstrap test is more flexible and can be applied to AUC, pAUC (i.e., partial AUC; examining only a part of the area under the ROC curve), and smoothed ROC curves (i.e., parametric ROC curves). Nevertheless, both tests tend to produce the same, or similar, results (Robin et al., 2011).

In addition, plots of paired ROC curves were generated using the `ggplot2` (Wickham, 2016) package in R to supplement the bootstrap results. A ROC curve is a plot of the "true positive" (i.e., proportion of actual outcome failure) as a function of the false positives rate (i.e., failure indicated but does not occur). If the true positive rate is the same as the false positive rate, then the curve is a diagonal line from the bottom left-hand corner to the top right-hand corner of the graph, indicating that the scale is performing at chance. Increased prediction is shown by the greater proportion of the total area of the graph that lies under the curve. Plots of paired ROC curves were generated for each comparison to visualize the difference in predictive validity between scales.

**Cox Regression.** I conducted Cox regression analyses in SPSS version 27 to test the incremental predictive validity of each EFA factor, as well as each original and randomized measure for the time until the first occurrence of each recidivism outcome. I calculated the length of time until recidivism from the date of release from custody to the first date of post-index arrest or charge for a new IPV offence and any new violent offence for survival analyses. Incremental prediction was not tested for general recidivism because the date of the first general offence was not coded.

## Results

Data screening in Study 1 also applied to data in Study 2. Again, where possible,

the analyses were run with both parametric (e.g., Pearson's  $r$  correlations) and non-parametric (e.g., Spearman's Rho correlations) statistics. Additionally, all analyses were run both with original variables and with outliers removed/transformed variables, and results were compared. Note that results did not change with the modified (i.e., outliers removed, transformed, etc.) variables; therefore, I retained all results with original variables to maintain the raw, unaltered data. Note that Factor Scores for Factor 4 continued to violate normality even after being transformed (discussed below). Finally, multicollinearity and proportionality of hazards assumptions were met for variables in Study 2.

### ***EFA Factors in the Prediction of Recidivism Outcomes***

ROC analyses were generated using SPSS version 27 to examine the predictive validity of the factors for predicting recidivism outcomes. Additionally, I examined whether differences between two ROC curves were statistically significant based on the nonparametric bootstrapping method (Carpenter & Bithell, 2000), with 10000 replications in R, using the pROC package (Robin et al., 2011). Note that Factor Scores generated in Mplus were used to examine the predictive validity of all factors to predict recidivism outcomes. Importantly, assumptions for AUC and bootstrap analyses (i.e., univariate and multivariate outliers, normality, etc.) were met for all Factor Scores for each recidivism outcome, except for Factor Scores of Factor 4 for general recidivism. More specifically, for general recidivism, Factor 4 scores violated assumptions of normality and variable transformations (i.e., square root, log, and inverted) did not fix the violation. Therefore, Factor 4 results for general recidivism should be interpreted with caution.

**Predicting IPV Recidivism.** Of the 251 men with complete scores on the ODARA, SARA, and B-SAFER measures and included in the EFA, 24 men were excluded from analyses on the prediction of recidivism outcomes because eight were missing follow-up data and 16 were not released from custody or deceased at the time of follow-up. Seven men were further excluded because information on whether they violently reoffended against a past or current partner was not available, resulting in a final sample of 220 men included in analyses predicting IPV recidivism. Eighty (36.4%) of these men had a post-index IPV offence. Table 8 displays the AUC values of the six EFA factors for predicting IPV recidivism. Based on confidence intervals of AUC values not including .50, results indicated that only Factors 2 (Antisocial Patterns and Psychosocial Adjustment) and 3 (IPV-Specific and Technical Violations) significantly predicted IPV recidivism, with medium effect sizes ( $AUC = .65$ , 95% CI [.58, .73] and  $.61$ , 95% CI [.53, .68], respectively). The remaining factors did not significantly predict IPV recidivism.

**Table 8**

*Predictive Validities of Six Factors Retained from the Exploratory Factor Analysis for Recidivism Outcomes*

Factor	AUC [95% CI]		
	IPV Recidivism ( <i>n</i> = 220; 80, 140)	Any Violent Recidivism ( <i>n</i> = 227; 112, 115)	General Recidivism ( <i>n</i> = 227; 148, 79)
1. Barriers to Victim Support	.53 [.45, .61]	.53 [.45, .60]	.48 [.40, .56]
2. Antisocial Patterns and Psychosocial Adjustment	<b>.65 [.58, .73]</b>	<b>.69 [.63, .76]</b>	<b>.71 [.64, .78]</b>
3. IPV-Specific and Technical Violations	<b>.61 [.53, .68]</b>	<b>.61 [.54, .69]</b>	<b>.67 [.60, .74]</b>
4. Threats	.51 [.43, .58]	.54 [.47, .62]	.53 [.45, .61]
5. Severe IPV and Negative Attitudes	.54 [.46, .62]	.54 [.46, .61]	.51 [.42, .59]
6. Victim Concern	.50 [.42, .58]	.50 [.42, .57]	.52 [.44, .60]

*Note.* Area under the curve (AUC) values are based on factor scores generated from the exploratory factor analysis in Mplus. Bolded values are statistically significant based on confidence interval not including .50. Sample sizes (*n*) vary because factor scores were only generated for cases with complete data (i.e., cases excluded listwise) and recidivism information was not available for all cases. Number of recidivists and nonrecidivists in parentheses, respectively. IPV = intimate partner violence; CI = confidence interval.

Additionally, I examined whether differences between paired ROC curves among EFA factors were statistically significant using the Bootstrap method in R (Table 9). Given that only Factors 2 and 3 significantly predicted IPV recidivism, I conducted pairwise comparisons only of these two factors with all other factors, as well as with each other, to avoid increasing the risk of type I error unnecessarily when conducting multiple statistical tests. Bonferroni correction was used to account for conducting nine pairwise comparisons, in which a difference in two AUCs (i.e.,  $D$  values) would only be considered as statistically significant if  $p < .006$  ( $.05/9 = .006$ ). Based on this Bonferroni correction, only one significant difference emerged between Factors 2 and 6 ( $D = 2.77$ ,  $p < .006$ ), suggesting that Antisocial Patterns and Psychosocial Adjustment was significantly better at predicting IPV recidivism than Victim Concern. Paired ROC curves are depicted in Figures 2 and 3.

**Table 9**

*Pairwise Comparisons of the Six Factors Retained from the Exploratory Factor Analysis in the Prediction of Recidivism Outcomes*

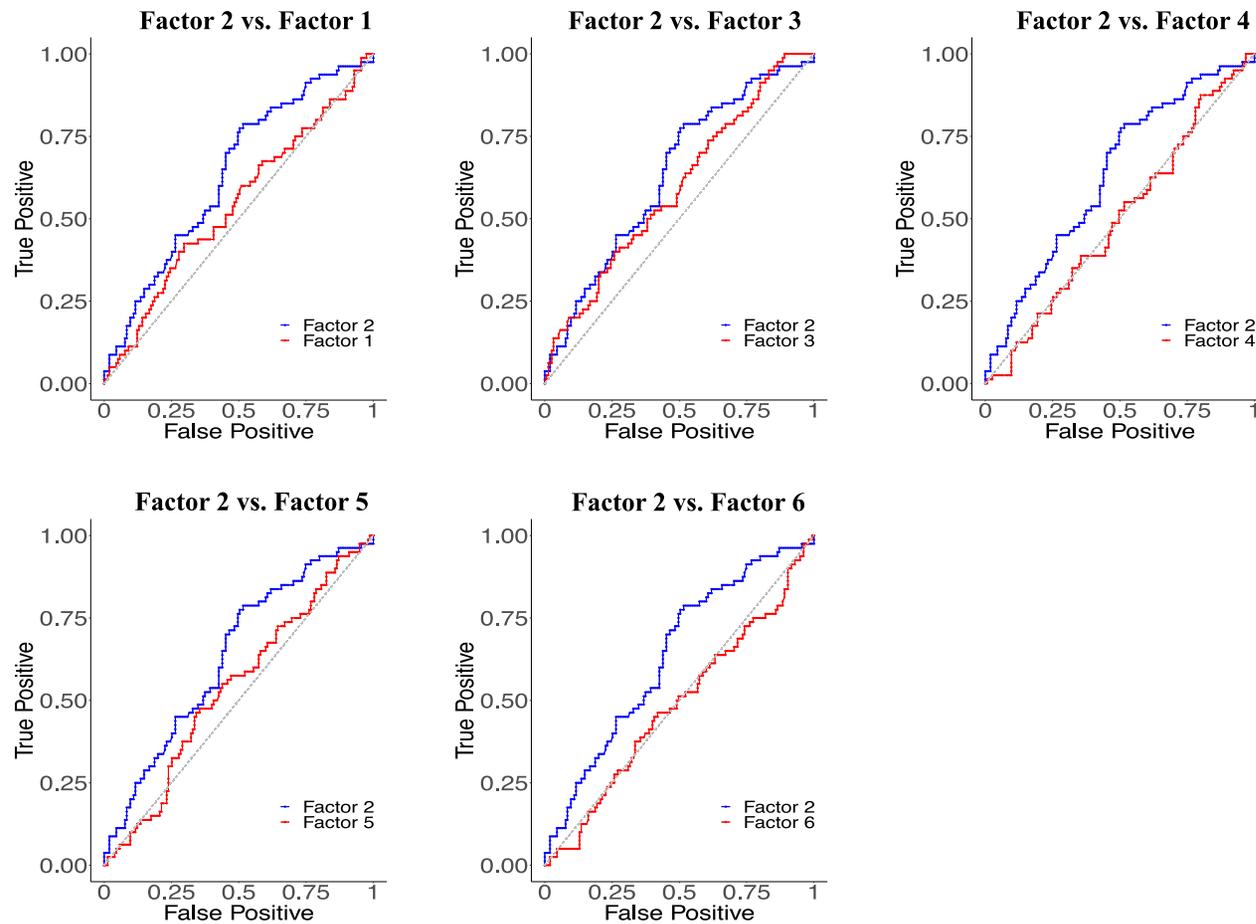
Pairwise Comparison	Recidivism $D$		
	IPV ( $n = 220; 80, 140$ )	Any Violent ( $n = 227; 112, 115$ )	General ( $n = 227; 148, 79$ )
Factor 2 vs. Factor 1	1.78	3.23*	3.09*
Factor 2 vs. Factor 3	0.87	1.67	0.93
Factor 2 vs. Factor 4	2.52 <sup>†</sup>	2.77*	2.86*
Factor 2 vs. Factor 5	1.95	3.00*	3.45*
Factor 2 vs. Factor 6	2.77*	3.90*	3.48*
Factor 3 vs. Factor 1	0.94	1.57	2.31 <sup>†</sup>
Factor 3 vs. Factor 4	1.72	1.28	2.15 <sup>†</sup>
Factor 3 vs. Factor 5	1.02	1.25	2.57 <sup>†</sup>
Factor 3 vs. Factor 6	1.99 <sup>†</sup>	2.27 <sup>†</sup>	2.54 <sup>†</sup>

*Note.* *D* values represent the statistical difference between two ROC curves, using the Bootstrap method in R. Sample sizes (*n*) vary because factor scores were only generated for cases with complete data (i.e., cases excluded listwise) and recidivism information was not available for all cases. Number of recidivists and nonrecidivists in parentheses, respectively. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

\*  $p < .006$ , †  $p < .05$ .

**Figure 2**

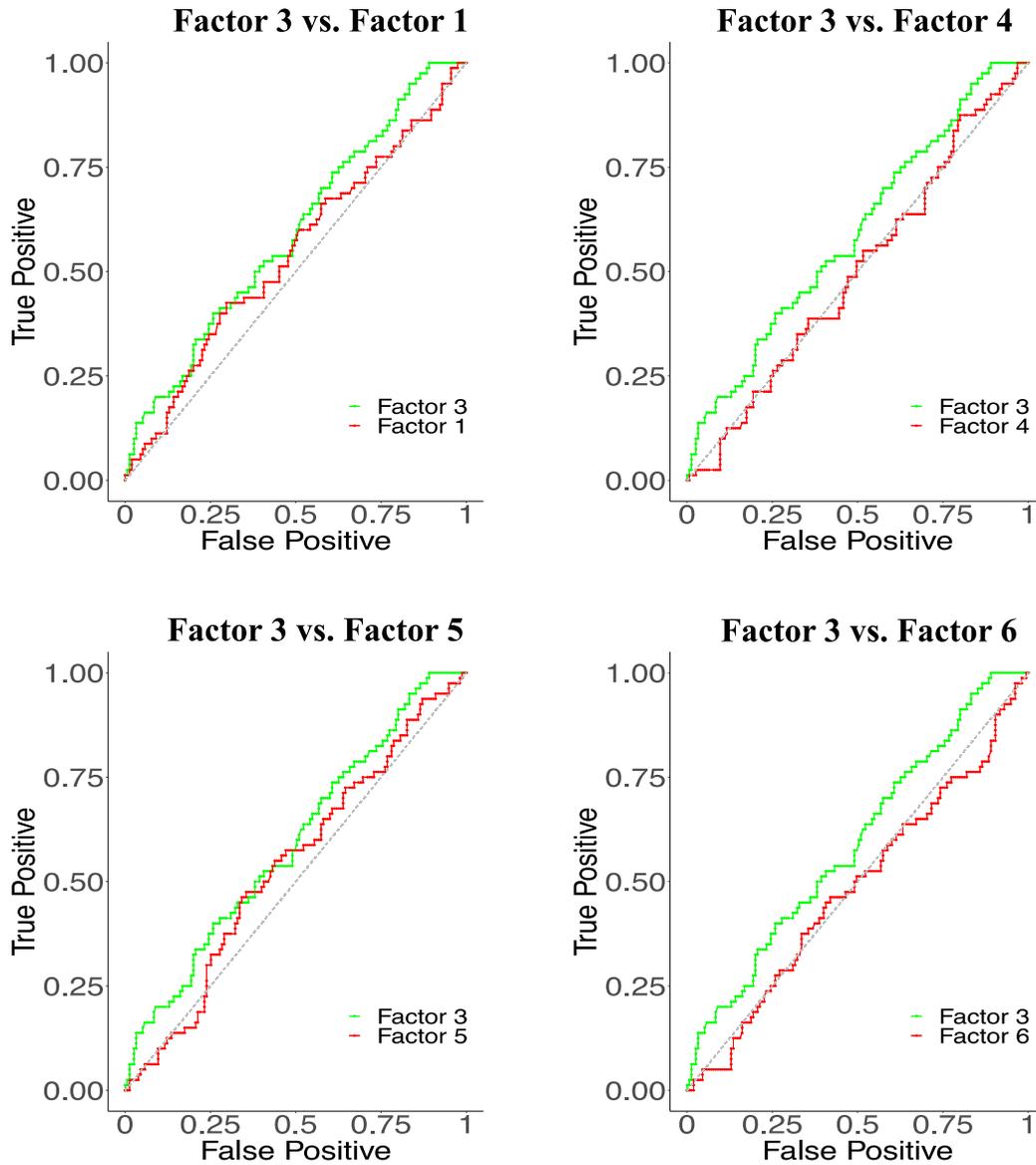
*ROC Plots Comparing Factor 2 to All Other Factors in the Prediction of Intimate Partner Violence Recidivism*



*Notes.* Receiver operating characteristic (ROC) plots are based on factor scores. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

**Figure 3**

*ROC Plots Comparing Factor 3 to All Other Factors in the Prediction of Intimate Partner Violence Recidivism*



**Notes.** Receiver operating characteristic (ROC) plots are based on factor scores. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats;

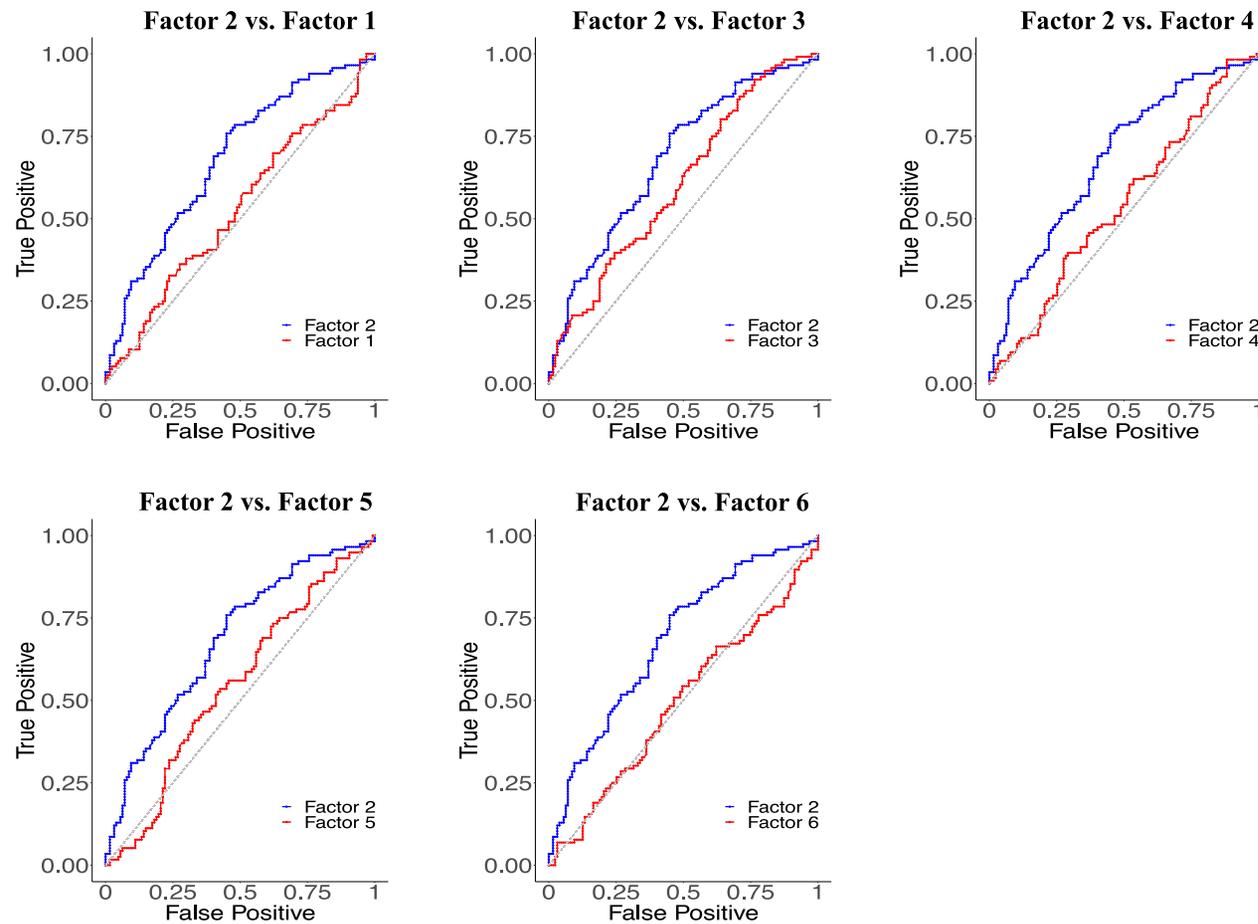
Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

**Predicting Any Violent Recidivism.** As mentioned above, of the 251 men with complete scores on the ODARA, SARA, and B-SAFER measures and included in the EFA, 24 men were excluded from analyses on the prediction of recidivism outcomes because eight were missing follow-up data and 16 were not released from custody or deceased at the time of follow-up, resulting in a final sample of 227 men included in analyses predicting any violent recidivism. One-hundred and twelve (49.3%) of these men had a post-index violent offence. Based on confidence intervals of AUC values not including .50 (see Table 8), results indicated that only Factors 2 (Antisocial Patterns and Psychosocial Adjustment) and 3 (IPV-Specific and Technical Violations) significantly predicted any violent recidivism, with medium effect sizes (AUC = .69, 95% CI [.63, .76] and .61, 95% CI [.54, .69], respectively). The remaining factors did not significantly predict any violent recidivism.

Additionally, I examined whether differences between paired ROC curves were statistically significant (see Table 9). As with IPV recidivism, I conducted pairwise comparisons only of Factors 2 and 3 with all other factors, as well as with each other, to avoid increasing the risk of Type I error unnecessarily when conducting multiple statistical tests. Based on the Bonferroni correction (see above), results showed that Antisocial Patterns and Psychosocial Adjustment was significantly better at predicting any violent recidivism than Barriers to Victim Support ( $D = 3.23, p < .006$ ), Threats ( $D = 2.77, p < .006$ ), and Victim Concern ( $D = 3.90, p < .006$ ). Paired ROC curves are depicted in Figures 4 and 5.

**Figure 4**

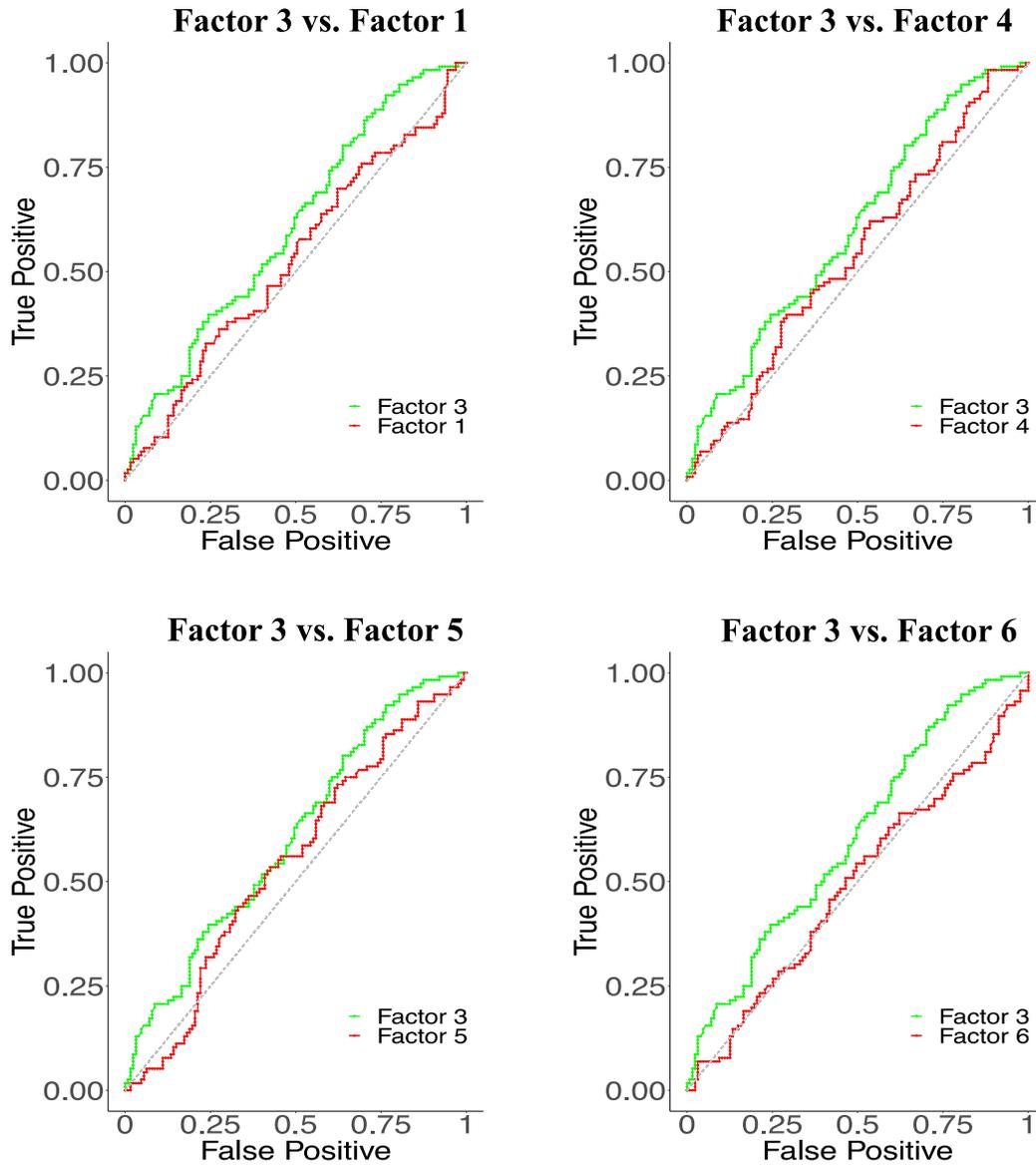
*ROC Plots Comparing Factor 2 to All Other Factors in the Prediction of Any Violent Recidivism*



*Notes.* Receiver operating characteristic (ROC) plots are based on factor scores. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

**Figure 5**

*ROC Plots Comparing Factor 3 to All Other Factors in the Prediction of Any Violent Recidivism*



**Notes.** Receiver operating characteristic (ROC) plots are based on factor scores. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial

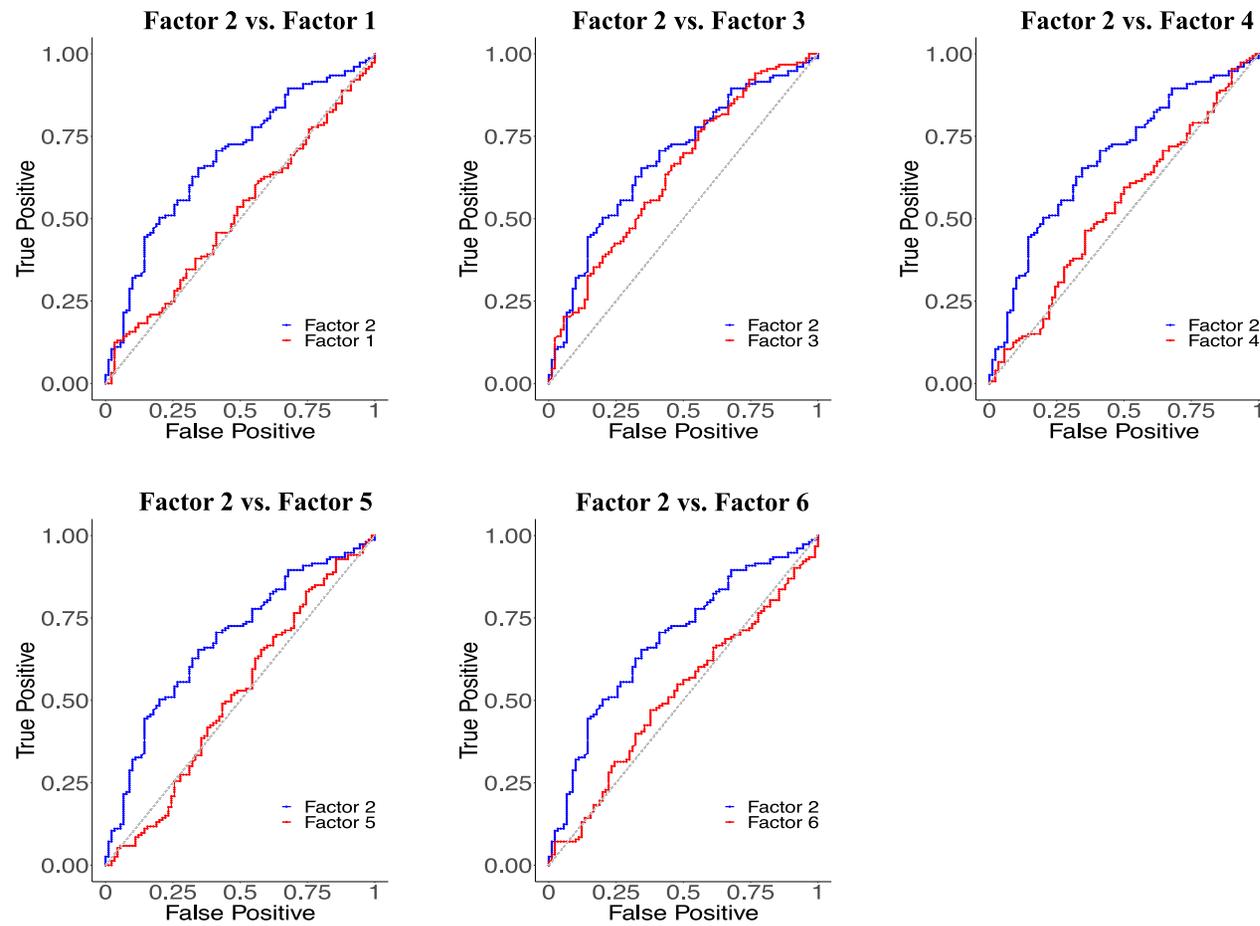
Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

**Predicting General Recidivism.** Of the 227 men with complete data (see above), 148 (65.2%) had at least one post-index offence. Based on confidence intervals of AUC values not including .50 (see Table 8), once again, results indicated that only Factors 2 (Antisocial Patterns and Psychosocial Adjustment) and 3 (IPV-Specific and Technical Violations) significantly predicted general reoffending, with large and medium effect sizes (AUC = .71, 95% CI [.64, .78] and .67, 95% CI [.60, .74], respectively). The remaining factors did not significantly predict any violent recidivism.

Additionally, I examined whether differences between paired ROC curves were statistically significant (see Table 9). Like predicting other recidivism outcomes, I conducted pairwise comparisons only of Factors 2 and 3 with all other factors, as well as with each other, to avoid increasing the risk of type I error unnecessarily when conducting multiple statistical tests. Based on the Bonferroni correction (see above), results showed that Antisocial Patterns and Psychosocial Adjustment was significantly better at predicting general reoffending than all other factors, except Factor 3 (IPV-Specific and Technical Violations). Specifically, Antisocial Patterns and Psychosocial Adjustment predicted general reoffending significantly better than Barriers to Victim Support ( $D = 3.09, p < .006$ ), Threats ( $D = 2.86, p < .006$ ), Severe IPV and Negative Attitudes ( $D = 3.23, p < .006$ ), and Victim Concern ( $D = 3.48, p < .006$ ). Factor 3 did not predict general recidivism significantly better than other factors. Paired ROC curves are depicted in Figures 6 and 7.

**Figure 6**

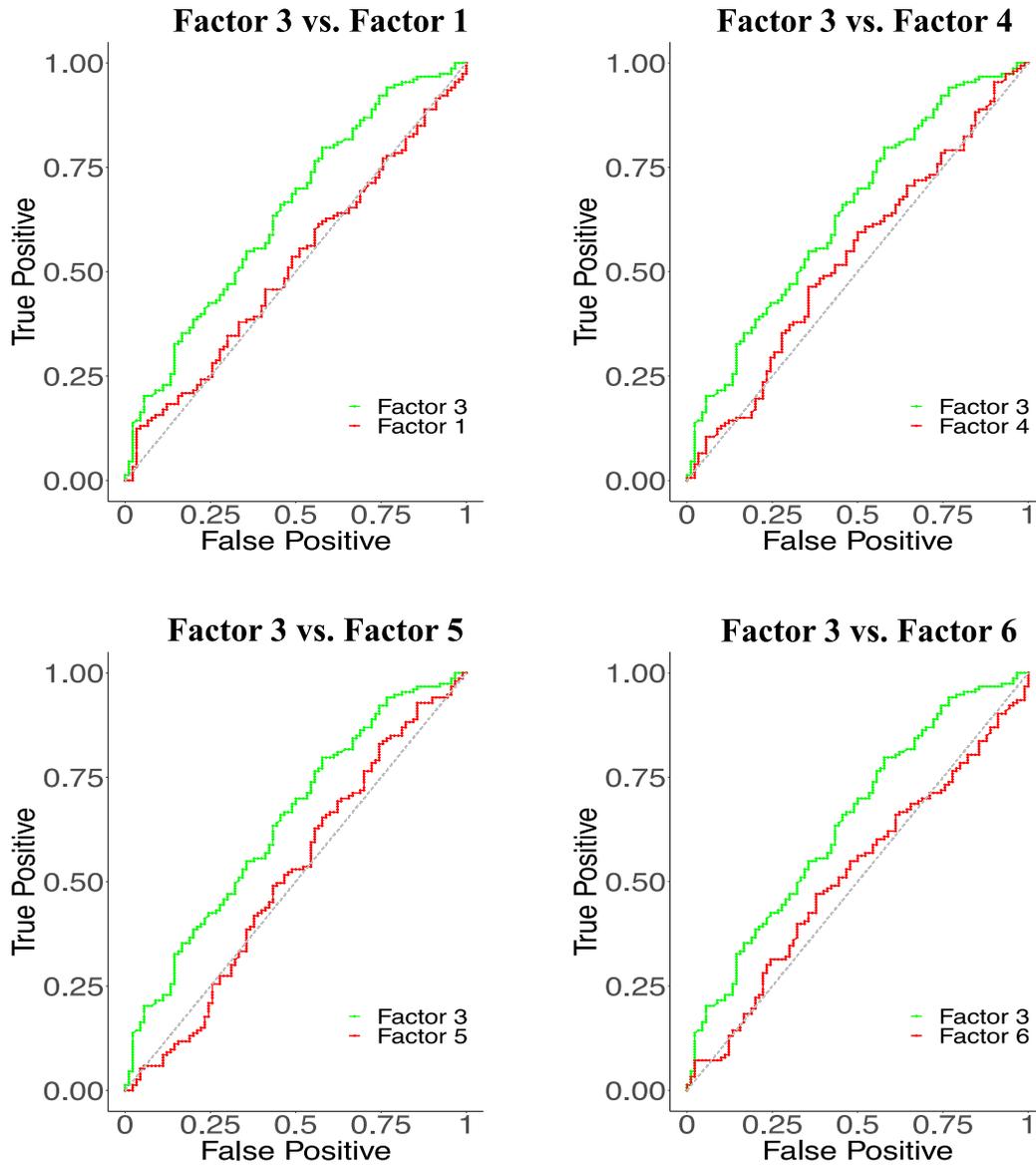
*ROC Plots Comparing Factor 2 to All Other Factors in the Prediction of General Recidivism*



*Notes.* Receiver operating characteristic (ROC) plots are based on factor scores. Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

**Figure 7**

*ROC Plots Comparing Factor 3 to All Other Factors in the Prediction of General Recidivism*



**Notes.** Factor 1 = Barriers to Victim Support; Factor 2 = Antisocial Patterns and Psychosocial Adjustment; Factor 3 = IPV-Specific and Technical Violations; Factor 4 = Threats; Factor 5 = Severe IPV and Negative Attitudes; Factor 6 = Victim Concern.

### *Incremental Validity of EFA Factors*

Next, I conducted Cox regression analyses in SPSS version 27 to examine whether any of the EFA factors incrementally predicted IPV and any violent recidivism over time. Note that for Cox regression analyses, Factor Totals (instead of Factor Scores) were used because they were more interpretable. For example, given that Factor Scores were standardized and only range from -3.00 to +3.00, a one-unit increase in Factor Scores would be meaningless. Therefore, Factor Totals were used in these analyses to increase interpretability. Importantly, assumptions for Cox regression analyses (i.e., univariate and multivariate outliers, normality, multicollinearity, and proportionality of hazards) were met for all Factor Totals for IPV and any violent recidivism outcomes. However, both IPV recidivism and any violent recidivism over time variables violated assumptions of normality and were subsequently transformed using square root transformation. Moreover, violent recidivism over time also contained outliers, which were subsequently reduced prior to conducting Cox regression analyses. Results did not significantly change when using original variables, as opposed to transformed or outliers-reduced variables; therefore, I decided to use results from the original variables to preserve the original scores.

Of the 300 men in the sample, nine were missing follow-up information and 17 were either not released from custody or deceased at the time of follow-up, resulting in a final sample of 274 men used in Cox regression analyses. Eight men were further excluded from analyses to predict IPV recidivism because they were missing information on this outcome. Among IPV recidivists ( $n = 99$ ; 37.2%), the mean time until the first post-index IPV arrest or charge was 565 days ( $SD = 487$ ;  $Mdn = 471$ ; see Table 1). Cox

regression analyses indicated that only Factor 2 (Antisocial Patterns and Psychosocial Adjustment) significantly and incrementally predicted IPV recidivism over time (Table 10). Specifically, results showed that for each additional point on Factor 2 total, the risk of IPV recidivism increased by 8.9%,  $B = 0.09$ ,  $SE = .04$ , Wald's  $\chi^2(1) = 6.01$ ,  $p = .01$ ,  $e^B = 1.09$  (95% CI [1.02, 1.17]), suggesting that Antisocial Patterns and Psychosocial Adjustment provided information to predict IPV recidivism over time above and beyond information provided by the other factors.

For violent recidivism, of the 274 men, 136 (49.6%) recidivated and the mean time until their first post-index arrest or charge for any violent offence was 505 days ( $SD = 480$ ;  $Mdn = 384$ ; see Table 1). Like IPV recidivism, Cox regression analyses indicated that only Factor 2 (Antisocial Patterns and Psychosocial Adjustment) significantly and incrementally predicted violent recidivism over time (Table 10). Specifically, each additional point on Factor 2 total was associated with a 13.3% increased risk of any violent recidivism,  $B = 0.13$ ,  $SE = .03$ , Wald's  $\chi^2(1) = 16.15$ ,  $p < .001$ ,  $e^B = 1.13$  (95% CI [1.07, 1.21]), suggesting that Antisocial Patterns and Psychosocial Adjustment provided information to predict violent recidivism over time above and beyond information provided by the other factors.

**Table 10**

*Cox Regression Survival Analysis: Six Factors Retained from the Exploratory Factor Analysis in the Prediction of Intimate Partner Violence and Any Violent Recidivism*

Predictors	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>p</i>	<i>e<sup>b</sup></i>	95% CI	
						LL	UL
Intimate Partner Violence Recidivism ( <i>n</i> = 266)							
1. Barriers to Victim Support	.016	.043	0.144	.705	1.016	0.935	1.105
2. Antisocial Patterns and Psychosocial Adjustment	.085	.035	6.010	<b>.014</b>	1.089	1.017	1.166
3. IPV-Specific and Technical Violations	.071	.054	1.684	.194	1.073	0.965	1.194
4. Threats	.049	.078	0.402	.526	1.051	0.902	1.224
5. Severe IPV and Negative Attitudes	-.033	.040	0.699	.403	0.967	0.895	1.046
6. Victim Concern	-.050	.060	0.677	.411	0.952	0.845	1.071
Any Violent Recidivism ( <i>n</i> = 274)							
1. Barriers to Victim Support	.002	.036	0.002	.962	1.002	0.933	1.075
2. Antisocial Patterns and Psychosocial Adjustment	.125	.031	16.154	<b>&lt;.001</b>	1.133	1.066	1.205
3. IPV-Specific and Technical Violations	.074	.047	2.482	.115	1.077	0.982	1.181
4. Threats	.038	.066	0.326	.568	1.038	0.913	1.181
5. Severe IPV and Negative Attitudes	-.039	.034	1.335	.248	0.962	0.900	1.028
6. Victim Concern	-.059	.052	1.271	.260	0.943	0.851	1.045

*Note.* Significant  $p$ -values in bold. Cox regression analyses are based on factor sums (i.e., sum of all items included in each factor), instead of factor scores, in order to increase interpretability of results. Sample sizes ( $n$ ) vary because recidivism information was not available for all cases. For intimate partner violence recidivism,  $n = 99$  recidivists and  $n = 167$  non-recidivists. For any violent recidivism,  $n = 136$  recidivists and  $n = 138$  non-recidivists.

## Discussion

The aim of Study 2 was to examine the extent to which factors found in Study 1 predicted recidivism outcomes, and whether any factor was statistically better at predicting recidivism and/or independently predicted recidivism above and beyond the other factors. As expected and consistent with past research (e.g., Pham & Jung, 2021; Hilton et al., 2010), I found that Factors 2 (*Antisocial Patterns and Psychosocial Adjustment*) and 3 (*IPV-Specific and Technical Violations*) significantly predicted all recidivism outcomes in the current study. In addition, Factor 2 was statistically better at predicting any violent and general recidivism than Factors 1 (*Barriers to Victim Support*), 4 (*Threats*), 5 (*Severe IPV and Negative Attitudes*), and 6 (*Victim Concern*). Even though Factor 2 contained some items that have demonstrated mixed relationships with IPV recidivism in the literature, such as mental health problems, employment problems, personality disorders, and victim of and/or witness to IPV (e.g., Andrews et al., 2000; Capaldi et al., 2012; Cattaneo & Goodman, 2005; Dutton et al., 1997; Hanson & Wallace-Capretta, 2004; Hanson et al., 1997; Henning et al., 2009; Hilton & Radatz, 2021; Kim & Capaldi, 2004; Kingsnorth, 2006; Lila et al., 2019; López-Ossorio et al., 2017; Shorey et al., 2012), this finding was unsurprising because Factor 2 consists of seven of the eight items from the Central Eight risk factors, which consistently and significantly predict general criminal and violent recidivism and represent the most predictive risk factors for criminal activities (e.g., Andrews & Bonta, 2017; Goldstein et al., 2016; Olver et al., 2014). That said, some of the other factors also seem to contain items similar to the Central Eight items; however, these items were still specific to IPV, rather than general antisociality. For example, Factor 5 contained items regarding

attitudes, but not procriminal attitudes (i.e., attitudes about the law, identification with procriminal peers, tolerance of law-breaking, etc.), as in the Central Eight. Instead, attitude items in Factor 5 were those that support IPV (e.g., extreme minimization or denial of spousal assault history, attitudes that support or condone spousal assault, etc.), which, unlike procriminal attitudes, have not been found to be related to IPV recidivism (e.g., Eckhardt & Crane, 2014; Lila et al., 2019).

A surprising finding, however, was that Factor 2 was able to predict IPV recidivism statistically better than Factor 6 (*Victim Concern*), suggesting that antisocial patterns and/or psychosocial adjustment provided significantly more information to predict IPV recidivism than the victim's fear/concern for her safety. This is inconsistent with prior research demonstrating women's ability to assess their own risk of IPV revictimization (e.g., Cattaneo et al., 2007; Heckert & Gondolf, 2004; van der Put et al., 2019). Indeed, most studies find that women are more likely to be correct than incorrect in their assessment of risk (e.g., Bell et al. 2008; Campbell et al., 2009; Cattaneo & Goodman, 2003; Connor-Smith et al., 2011) and van der Put et al.'s (2019) recent meta-analysis found that victims were able to predict new offences at levels comparable to some IPV risk assessment measures ( $AUC = .64$ ,  $k = 7$ ). However, they are also more likely to underestimate than overestimate their risk (Campbell et al., 2009; Heckert & Gondolf, 2000), possibly as a coping strategy (Dutton, 1996; Dutton & Dionne, 1991) or due to the effects of cumulative trauma on awareness and/or memory (Campbell et al., 2009), lowering their accuracy of risk estimation. Notwithstanding, as mentioned above, the reliability and validity of this factor has been questioned in the present dissertation; thus, results concerning Factor 6 should be considered with caution. Additionally, IPV

recidivism in the present dissertation did not only capture subsequent violence against the index victim, but rather, captured violence against any intimate partner. Thus, it is unreasonable to expect that a risk factor assessing fear or concern expressed by one victim (i.e., the index victim) would predict future violence against another victim. Future research should further investigate the predictive validity of this risk factor with more reliable data, such as victim interviews, and whether it predicts IPV recidivism against the index victim.

Although the other factors (i.e., Factors 1, 4-6) were unable to significantly predict general and violent recidivism, this was expected given that they contain items that specifically pertain to IPV. What is surprising was that these factors were not able to significantly predict IPV recidivism, which begs the question of whether specialized IPV risk assessment measures are necessary. In fact, Factor 2 significantly and independently predicted any violent and IPV recidivism over time above and beyond all other factors, suggesting that this was the only factor needed to predict violent outcomes in the present sample. If Factors 1, 3, 4, 5, and 6 are not informative or useful for risk prediction beyond Factor 2, then this may suggest that general criminal or violence risk assessment measures may sufficiently predict IPV recidivism. However, these findings may be restricted to the present sample of high-risk IPV men, and more research is needed to explore additional factors that may add to risk prediction above and beyond Factor 2 and help explain IPV recidivism.

In the sexual violence literature, risk assessment measures consist of two broad risk factors: general criminality/antisocial patterns that seems to assist with estimating the likelihood of recidivating in general, and sexual deviance/criminality, which is unique to

sexual recidivism risk (Allen & Pflugrad, 2014; Brouillette-Alarie & Proulx, 2013; Pham & Ducro, 2008; Walters et al., 2009). Though violence risk assessments can accurately predict sexual recidivism, the addition of the sexual deviance/criminality risk factor provides significant complementary information to understand and predict sexual recidivism (e.g., Olver et al., 2016). However, in the IPV literature, this is a readily apparent gap. Even though Factor 3, which contained some items specific to IPV (e.g., prior IPV incidents, severe and/or sexual assault), significantly predicted IPV recidivism, this factor did not contribute complementary information to predict IPV recidivism over time. Until we can determine risk factors unique to IPV recidivism (or whether they exist), the question of whether specialized risk assessment measures for IPV recidivism are needed remains.

Of course, other explanations for these findings should also be considered before concluding that specialized risk assessment measures for IPV recidivism are unnecessary. First, it is possible that we have yet to discover more relevant risk factors for IPV risk because violence risk research is often limited by the variables that are captured and our ability to assess them. Items included in the ODARA, for example, were chosen partly because they are available to, and easily assessed by, frontline police officers, and thus, may not provide the full picture of IPV risk. It is important to, instead, examine risk factors that are informed by theory, as theoretically important variables imply a (hypothesized) causal association, which can motivate risk factors for consideration. Given the lack of theoretical models for IPV recidivism (Bell & Naugle, 2008), the first step is to develop comprehensive models to explain IPV recidivism. Second, given that IPV recidivism is based on reported incidents, and unreported incidents are inevitable

(Fanslow & Robinson, 2010; Sleath & Smith, 2017), IPV recidivism in the current study may only provide a portion of overall IPV recidivism, rendering our current indications of IPV recidivism inherently flawed. For example, it has been estimated that only up to 60% of IPV cases are reported to authorities (e.g., Bachman et al., 1995; Gracia, 2004), suggesting that the current results may not be generalizable to IPV that are unreported or undetected. In addition, reoffence data captured by official records do not always include other forms of IPV, such as intimidation, harassment, stalking, coercive control, and psychological/emotional abuse. The harmful effects of other forms of IPV can be equal to those of physical IPV (e.g., Graham et al., 2020; Kebbell, 2019), and it is also understood that physical IPV is often preceded by non-physical violent behaviours (e.g., Dobash & Dobash, 2015; Monckton-Smith et al., 2014; Myhill & Kohl, 2019), highlighting the importance of understanding and capturing these behaviours. Unfortunately, non-physical IPV is regularly ignored or goes unnoticed by victims, their social supports, and police (Carney & Barner, 2012; Fremouw et al., 1997), further restricting IPV recidivism data. Thus, it is possible that factors specific to IPV in the current study are more important for predicting more non-physical forms of IPV. In addition to developing more theoretical models tailored to predicting IPV recidivism, more research is needed to, first, investigate potential additional factors that contribute to IPV recidivism, and second, investigate whether the IPV-specific factors found in this study provide significant information to predict different types of IPV.

Third, findings in the current study can be further explained through the understanding of perpetrator subtypes. There is now substantial evidence that IPV perpetrators are a heterogenous group (Cavanaugh & Gelles, 2005; Chiffriller &

Hennessy, 2006; Chiffrieller et al., 2006; Dutton & Corvo, 2006; Holtzworth-Munroe & Meehan, 2004). Several researchers have proposed and found distinct subtypes of IPV perpetrators who differed on general criminality, indicators of antisociality, severity of violence, traits of psychopathy, personality traits, weapon use, victim injury, whether they were violent inside or outside the home, and likelihood of recidivism (Dixon & Browne, 2003; Gondolf, 1988; Hamberger & Hastings, 1986; Holtzworth-Munroe & Stuart, 1994; Peters et al., 2021). As such, it is possible that some factors from the current study are only relevant for different perpetrator subtypes. In fact, severity of violence as a risk factor have been found to only be predictive of IPV recidivism for generally violent/antisocial perpetrators but not for family-only perpetrators (Goldstein et al., 2016).

For the current sample, my colleagues and I conducted latent class analyses to examine whether perpetrator subtypes existed in our sample (Peters et al., 2021). Like Holtzworth-Munroe and Stuart (1994), we also found three distinct subtypes, which we labeled *IPV-Specific*, *IPV and Generally Antisocial*, and *Generally Violent and Less Severe IPV*. Similar to Holtzworth-Munroe and Stuart's (1994) *Generally Violent/Antisocial* subtype, our *IPV and Generally Antisocial* perpetrators were characterized by IPV-specific features as well as more general antisociality and violence, such as recurrent and severe familial violence, increased likelihood of weapon use, severe injury to partner or family members, indicators of antisociality (including substance use), and psychopathy. Importantly, half of our sample (51%) comprised of the *IPV and Generally Antisocial* subtype (compared to the 25% in Holtzworth-Munroe and Stuart's work), which likely reflects the fact that the current sample was drawn from a relatively

high-risk population within the criminal justice system, compared with the diverse clinical samples in the literature on which Holtzworth-Munroe and Stuart's based their typology. Indeed, as Holtzworth-Munroe and Stuart described their *Family-Only* subtype (which comprised 50% of their sample) as a lower risk group, it is unsurprising that the current sample contained fewer men (29%) whose violence was constrained within the home.

Interestingly, one of our subtypes (*Generally Violent and Less Severe IPV*) did not map onto any of Holtzworth-Munroe and Stuart's subtypes. Instead, this subtype appeared to be a less extreme version of the *IPV and Generally Antisocial* subtype, marked by general violence and antisociality and some IPV-specific features. This subtype comprised 20% of the sample, indicating that almost three-quarters (71%) of the current sample potentially consisted of generally violent men (51% of *IPV and Generally Antisocial* and 20% of *Generally Violent and Less Severe IPV*). Given the high-risk nature of our sample compared to the average IPV sample (Hilton et al., 2021), it makes sense that this sample should contain a greater proportion of men with more antisocial and extensive criminal histories, as there is strong evidence linking antisocial risk and criminality (Andrews & Bonta, 2017). Therefore, it is possible that only Factor 2 significantly and independently predicted violent and IPV recidivism above and beyond other factors because this may be the only relevant factor to predict recidivism outcomes among men who are generally violent and antisocial. If this is the case, then perhaps these specialized risk assessment measures containing risk factors unique to IPV recidivism is necessary to predict IPV recidivism among certain subtypes of IPV men (e.g., *Family-Only* subtype). Future research should investigate the predictive validity of

these risk assessment measures and their underlying risk factors to predict IPV recidivism with different subtypes.

### **Study 3: Comparing the Predictive Validities of Original and Randomized Intimate Partner Violence Risk Assessment Measures**

The purpose of Study 3 was to further examine the unique factor structure of the ODARA, SARA, and B-SAFER. That is, I investigated whether selections of items randomly drawn from the ODARA, SARA, and B-SAFER predicted recidivism outcomes as well as the original risk measures, which would indicate that the original risk measures do not offer enough unique information to predict outcomes. Given past findings on the predictive validities of the ODARA, SARA, and B-SAFER, I hypothesized that these measures would significantly predict recidivism outcomes. In addition, given findings from Kroner et al. (2005) and Buttars et al.'s (2015) studies on general and sexual violent recidivism, I hypothesized that the randomized selections of items would also significantly predict recidivism outcomes and that no measure (i.e., originals or randomized items) would be statistically better at predicting recidivism outcomes. Furthermore, I hypothesized that no measure would significantly and independently predict time-to-recidivism above and beyond other measures.

#### **Method**

Study 3 setting, sample, sources of information, procedures, and data analyses are the same as those in Studies 1 and 2.

#### ***Measures***

All measures included in Studies 1 and 2 (i.e., ODARA, SARA, B-SAFER, recidivism outcomes) were also included in Study 3.

**Randomized measures.** Three randomized IPV risk measures were generated by randomly selecting items from the ODARA, SARA, and B-SAFER, with replacement. I

entered all 63 items from the three measures into <https://www.random.org/lists/>, each on a separate line, and then clicked the “Randomize” button. The 63 items were then presented in a random order, and the first 15 were recorded as items included in Randomized 1. This was repeated until three sets of 15 items were obtained and recorded. One item from the ODARA (i.e., ODARA 1, prior domestic incident) was chosen a priori as a constant variable in each of the three randomized measures because all original measures have at least one item related to prior domestic incident. As a result, randomized measures contained a total of 16 items (i.e., 15 randomly drawn items plus prior domestic incident), which is the average number of items in the three original measures. Items were summed to generate a total score for each randomized measure (i.e., Randomized 1, Randomized 2, and Randomized 3), in which the items were scored as they were in the original measures. Table 11 displays a list of ODARA, SARA, and B-SAFER items that comprise each randomized measure.

**Table 11**

*List of ODARA, SARA, and B-SAFER Items that Comprise the Randomized Measures*

Randomized 1	Randomized 2	Randomized 3
Ontario Domestic Assault Risk Assessment items		
1. Prior domestic incident 2. Prior non-domestic incident 5. Threat to harm or kill at the index assault 9. Victim’s biological child from a previous partner 13. Barriers to victim support	1. Prior domestic incident 3. Prior custodial sentence of 30 days or more 4. Failure on prior conditional release 7. Victim concern about future assaults	1. Prior domestic incident 5. Threat to harm or kill at the index assault 6. Confinement of the victim at the index assault 12. Assault on the index victim when she was pregnant
Spousal Assault Risk Assessment items		
2. Past assault of strangers or acquaintances 15. Past violation of “no contact” orders	4. Recent relationship problems 13. Past use of weapons and/or credible threats of death 17. Attitudes that support or condone spousal assault 19. Use of weapons and/or credible threats of death	5. Recent employment problems 13. Past use of weapons or credible threats of death 15. Past violation of “no contact” orders
Brief Spousal Assault Form for the Evaluation of Risk items		
5. Recent violent attitudes 6. Recent general criminality 7. Recent intimate relationship problems	1. Recent violent acts 2. Recent violent threats or thoughts 4. Recent violation of court orders	1. Recent violent acts 3. Past escalation 4. Recent violation of court orders

8. Past employment problems	7. Recent intimate relationship problems	5. Past violent attitudes
10. Past mental health problems	9. Recent substance abuse problems	5. Recent violent attitudes
10. Recent mental health problems	13. Victim's past inadequate support or resources	9. Recent substance use problems
11. Victim's recent inconsistent attitudes or behaviour	14. Victim's recent unsafe living situation	10. Recent mental health problems
12. Victim's recent extreme fear of perpetrator	15. Victim's past health problems	11. Victim's recent inconsistent attitudes or behaviour
		13. Victim's recent inadequate support or resources

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*Note.* All randomized measures contained a constant item (i.e., ODARA item 1, prior domestic incident) because all original measure have at least one item related to prior domestic incident.

## Results

Like in Study 1, variables used in Study 3 were also screened for randomness of missing data, outliers (univariate and multivariate), normality, multicollinearity (Cox regressions), and proportionality of hazards (for Cox regressions) (see Study 1). As noted in Study 1, all data were missing at random, and any univariate outliers, as well as violations to normality, were fixed by reducing outliers and transforming variables. Where possible, the analyses were run with both parametric (e.g., Pearson's  $r$  correlations) and non-parametric (e.g., Spearman's Rho correlations) statistics, and all analyses were run both with original variables and with outliers removed/transformed variables, and results were compared. Results did not change with the modified (i.e., outliers removed, transformed, etc.) variables; therefore, I retained all results with original variables to maintain the raw, unaltered data. As in Study 1, multivariate outliers, multicollinearity, and proportionality of hazards assumptions were met for variables in Study 3.

Table 12 displays sample size, Cronbach's  $\alpha$ , means, standard deviations, and range of scores (as well as possible range) for the original (i.e., ODARA, SARA, and B-SAFER) and randomized risk measures. Internal consistencies among the measures ranged from poor to good ( $\alpha = .46$  to  $.73$ ). I screened the full sample for outliers (both univariate and multivariate) and normality prior to conducting bivariate correlations. Normality assumption was met for all variables, but all three randomized measure total scores contained univariate outliers, which were subsequently reduced. Bivariate correlations did not significantly change when using original total scores, as opposed to outliers-reduced total scores; therefore, I decided to keep the original variables to

preserve the original scores. All other variables met assumptions for correlation analyses. Table 13 displays the bivariate correlations between original and randomized risk measures. All measures were positively significantly related to each other, with large effect sizes ( $r = .39 - .77$ ). For analyses examining the predictive validity of these measures (i.e., ROC and Cox regression analyses), 26 men were excluded from the total sample size of 300, because nine were missing follow-up information and 17 were either not released from custody or deceased at the time of follow-up, resulting in a final sample of 274 men used in these analyses.

**Table 12**

*Sample Size, Cronbach's  $\alpha$ , Means, Standard Deviations, Range, and Possible Range of Original and Randomized IPV Risk Measures*

Measure (number of items)	<i>n</i>	$\alpha$	<i>M (SD)</i>	Range	Possible range
ODARA (13)	251	.46	7.84 (2.04)	2 – 12	0 – 13
SARA (20)	300	.64	23.31 (5.61)	8 – 38	0 – 40
B-SAFER (30)	300	.73	22.41 (6.39)	4 – 43	0 – 60
Randomized 1 (16)	292	.54	11.58 (3.39)	4 – 23	0 – 27
Randomized 2 (16)	279	.53	10.77 (3.51)	2 – 24	0 – 28
Randomized 3 (16)	273	.50	9.51 (3.23)	1 – 21	0 – 28

*Note.*  $N = 300$ . ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

**Table 13**

*Bivariate Correlations Between the Original and Randomized IPV Risk Measures*

Measure	1	2	3	4	5	6
1. ODARA total	-	<b>.56***</b>	<b>.39***</b>	<b>.57***</b>	<b>.40***</b>	<b>.46***</b>
2. SARA total	<b>.57***</b>	-	<b>.56***</b>	<b>.58***</b>	<b>.52***</b>	<b>.68***</b>
3. B-SAFER total	<b>.38***</b>	<b>.55***</b>	-	<b>.77***</b>	<b>.76***</b>	<b>.76***</b>
4. Randomized 1 total	<b>.57***</b>	<b>.59***</b>	<b>.73***</b>	-	<b>.59***</b>	<b>.74***</b>
5. Randomized 2 total	<b>.40***</b>	<b>.53***</b>	<b>.71***</b>	<b>.53***</b>	-	<b>.73***</b>
6. Randomized 3 total	<b>.46***</b>	<b>.67***</b>	<b>.71***</b>	<b>.71***</b>	<b>.68***</b>	-

*Note.*  $N = 300$ . Pearson’s  $r$  (parametric) correlations above the diagonal and Spearman’s rho (non-parametric) correlations below the diagonal.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

***Original and Randomized IPV Risk Measures in the Prediction of Recidivism***

***Outcomes***

ROC analyses were generated using SPSS version 27 to examine the predictive validity of the original and randomized IPV risk measures for predicting recidivism outcomes. Additionally, I examined whether differences between two ROC curves were statistically significant based on the nonparametric bootstrapping method (Carpenter & Bithell, 2000), with 10000 replications in R, using the pROC package (Robin et al., 2011).

**Predicting IPV Recidivism.** When data screening for IPV recidivism, I found that Randomized 2 and 3 measures contained univariate outliers, which were subsequently reduced prior to conducting AUC and bootstrapping analyses. AUC and

bootstrapping results did not significantly change when using original variables, as opposed to outliers-reduced variables; therefore, I decided to use results from the original variables to preserve the original scores. All other variables met assumptions for AUC and bootstrapping analyses predicting IPV recidivism. Table 14 displays AUC values of the original and randomized IPV risk measures for predicting IPV recidivism. Note that of the 274 men with complete recidivism data, eight were further excluded because information on whether they violently reoffended against a past or current partner was not available, resulting in a final sample of 266 men included in analyses involving IPV recidivism. Ninety-nine (37.2%) of these men had a post-index IPV offence. Based on confidence intervals of AUC values not including .50, results indicated that only total scores from the ODARA and Randomized 1 measure significantly predicted IPV recidivism, with small effect sizes ( $AUC = .59$ , 95% CI [.52, .66] and  $.59$ , 95% CI [.52, .65], respectively). The remaining risk measures did not significantly predict IPV recidivism.

**Table 14**

*Predictive Validity of Original and Randomized IPV Risk Measures for Recidivism Outcomes*

Measure	AUC [95% CI]		
	IPV Recidivism ( <i>n</i> = 266; 99, 167)	Any Violent Recidivism ( <i>n</i> = 274; 136, 138)	General Recidivism ( <i>n</i> = 274; 181, 93)
ODARA total	<b>.59 [.52, .66]</b>	<b>.63 [.56, .69]</b>	<b>.68 [.61, .74]</b>
SARA total	.57 [.50, .64]	<b>.61 [.54, .68]</b>	<b>.62 [.55, .69]</b>
B-SAFER total	.55 [.48, .62]	.55 [.48, .62]	<b>.58 [.51, .65]</b>
Randomized 1 total	<b>.59 [.52, .65]</b>	<b>.61 [.54, .68]</b>	<b>.64 [.57, .71]</b>
Randomized 2 total	.55 [.48, .62]	.55 [.48, .62]	<b>.58 [.51, .65]</b>
Randomized 3 total	.54 [.47, .61]	.54 [.47, .61]	<b>.58 [.51, .66]</b>

*Note.* Bolded values are statistically significant based on confidence interval not including .500. Sample sizes (*n*) vary because recidivism information was not available for all cases. Number of recidivists and nonrecidivists in parentheses, respectively. AUC = area under the curve; IPV = intimate partner violence; ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk; CI = confidence interval.

Additionally, I examined whether differences between paired ROC curves were statistically significant (Table 15). Bonferroni correction was used to account for conducting nine pairwise comparisons, in which a difference in AUCs (i.e., *D* values) would only be considered as statistically significant if  $p < .006$  ( $.05/9 = .006$ ). Based on this Bonferroni correction, none of the comparisons were significant, suggesting that available IPV risk measures are no better than randomized selections of items at predicting IPV recidivism. Paired ROC curves are depicted in Figure 8.

**Table 15**

*Pairwise Comparisons of the Original and Randomized IPV Risk Measures in the Prediction of Recidivism Outcomes*

Pairwise Comparison	Recidivism <i>D</i>		
	IPV ( <i>n</i> = 266; 99, 167)	Any Violent ( <i>n</i> = 274; 136, 138)	General ( <i>n</i> = 274; 136, 138)
Randomized 1 vs. ODARA	-0.007	-0.34	-0.78
Randomized 1 vs. SARA	0.98	0.33	0.92
Randomized 1 vs. B-SAFER	1.25	2.30 <sup>†</sup>	2.26 <sup>†</sup>
Randomized 2 vs. ODARA	-1.05	-2.19 <sup>†</sup>	-2.36 <sup>†</sup>
Randomized 2 vs. SARA	-0.24	-1.84	-1.01
Randomized 2 vs. B-SAFER	-0.18	-0.47	-0.22
Randomized 3 vs. ODARA	-1.26	-2.16 <sup>†</sup>	-2.18 <sup>†</sup>
Randomized 3 vs. SARA	-0.43	-1.96 <sup>†</sup>	-0.79

Randomized 3 vs. B-SAFER	-0.37	-0.25	0.26
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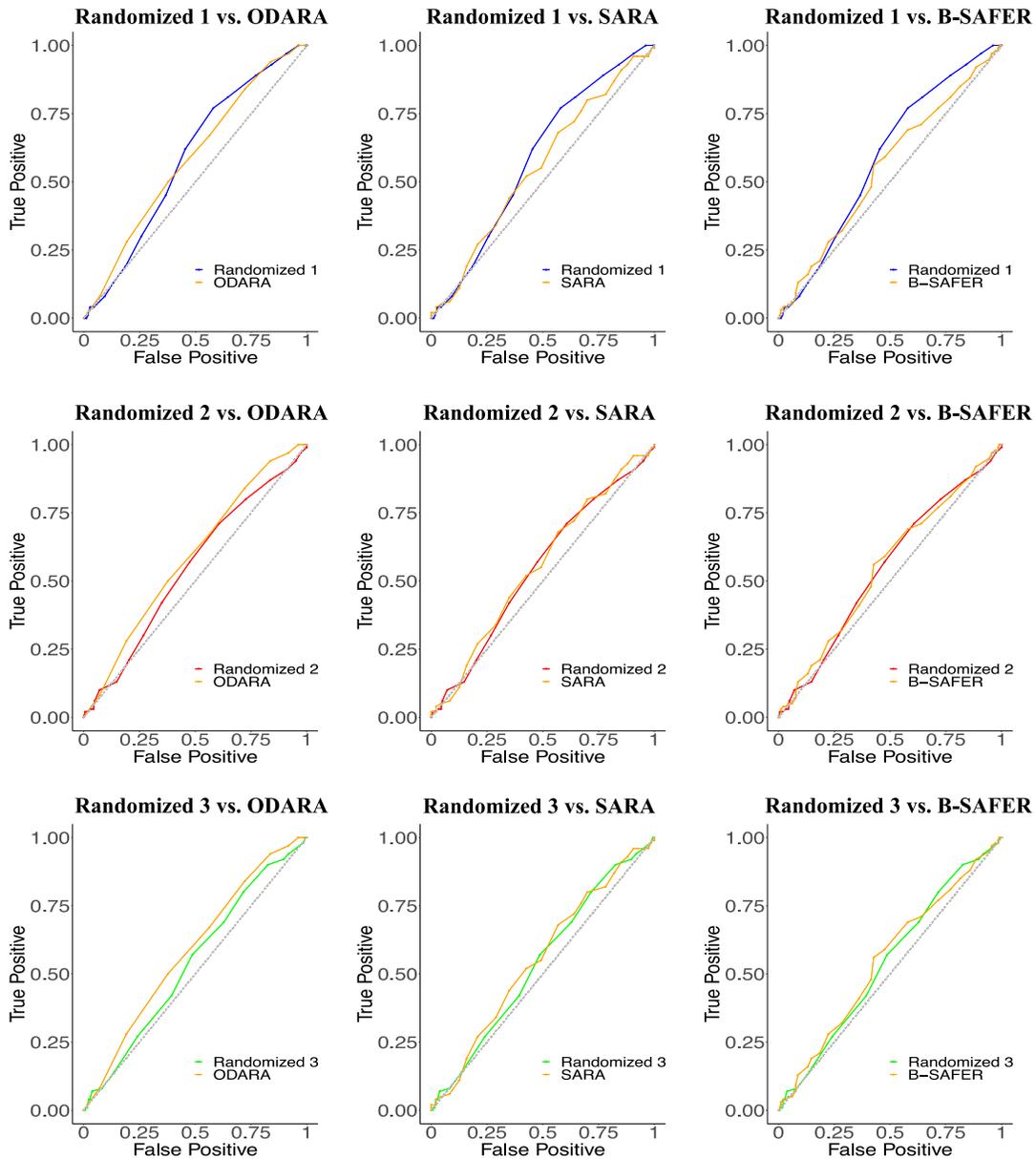
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*Note.* *D* values represent the statistical difference between two ROC curves, using the Bootstrap method in R. Sample sizes (*n*) vary because recidivism information was not available for all cases. Number of recidivists and nonrecidivists in parentheses, respectively. IPV = intimate partner violence; ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

\* $p < .006$ , † $p < .05$

**Figure 8**

*ROC Plots Comparing Original to Randomized IPV Risk Measures in the Prediction of Intimate Partner Violence Recidivism*



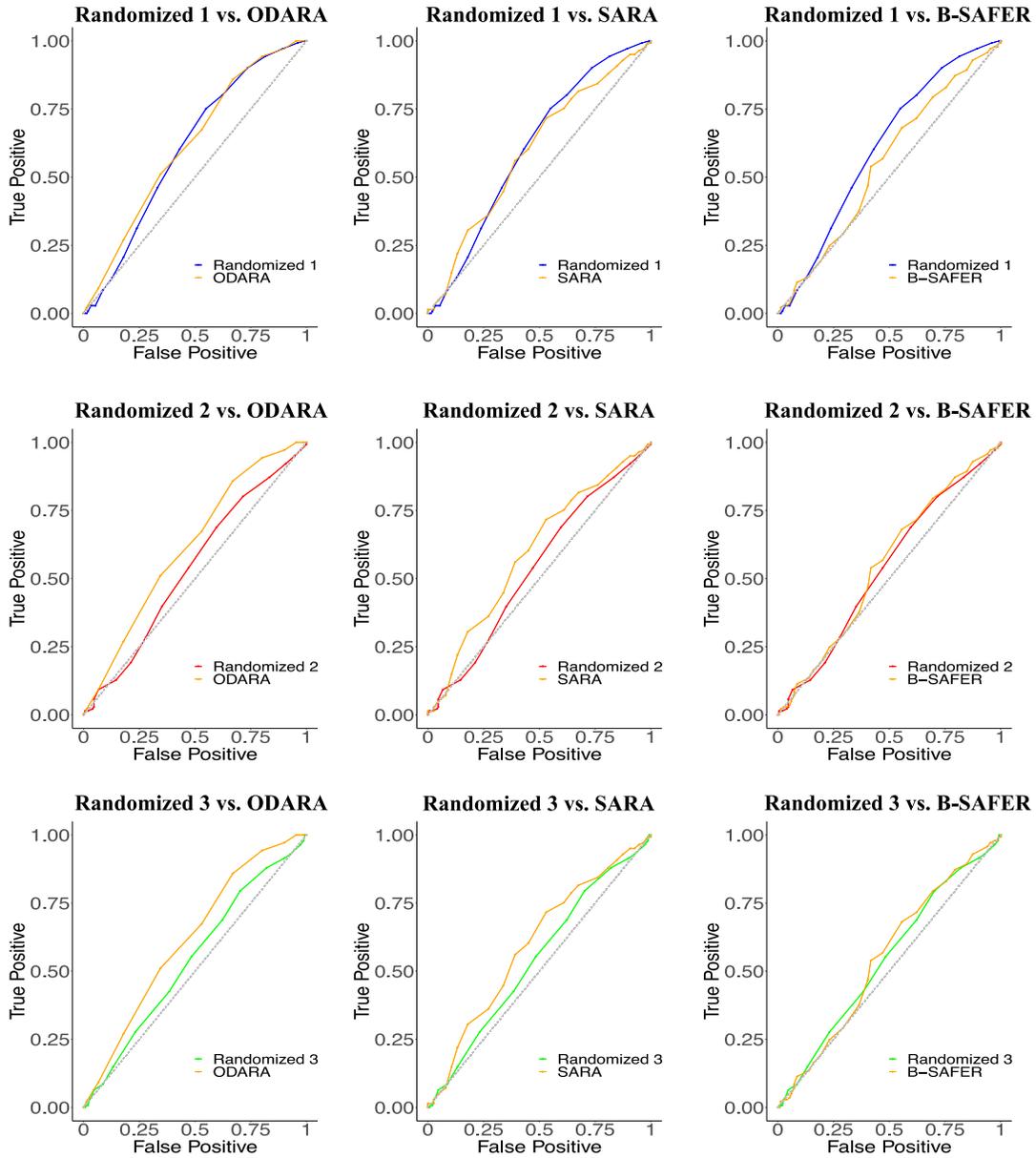
*Note.* ROC = receiver operating characteristic; ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

**Predicting Any Violent Recidivism.** When data screening for any violent recidivism, I found that Randomized 2 and 3 measures contained univariate outliers, which were subsequently reduced prior to conducting AUC and bootstrapping analyses. AUC and bootstrapping results did not significantly change when using original variables, as opposed to outliers-reduced variables; therefore, I decided to use results from the original variables to preserve the original scores. All other variables met assumptions for AUC and bootstrapping analyses predicting any violent recidivism. See Table 14 for AUC values of the original and randomized IPV risk measures for predicting any violent recidivism. Of 274 men, 136 (49.6%) had a post-index violent offence. Based on confidence intervals of AUC values not including .50, results showed that the ODARA and SARA total scores predicted any violent recidivism, with medium to small effect sizes (AUC = .63, 95% CI [.56, .69] and .61, 95% CI [.54, .68], respectively). Additionally, the total score of Randomized 1 also significantly predicted any violent recidivism, with a small effect size (AUC = .61, 95% CI [.54, .69]). The remaining measures did not significantly predict any violent recidivism.

Additionally, I examined whether differences between paired ROC curves were statistically significant (see Table 15). Based on Bonferroni correction to account for conducting nine pairwise comparisons, none of the comparisons were significant, suggesting that available IPV risk measures are no better than randomized selections of items at predicting any violent recidivism. Paired ROC curves are depicted in Figure 9.

**Figure 9**

*ROC Plots Comparing Original to Randomized IPV Risk Measures in the Prediction of Any Violent Recidivism*

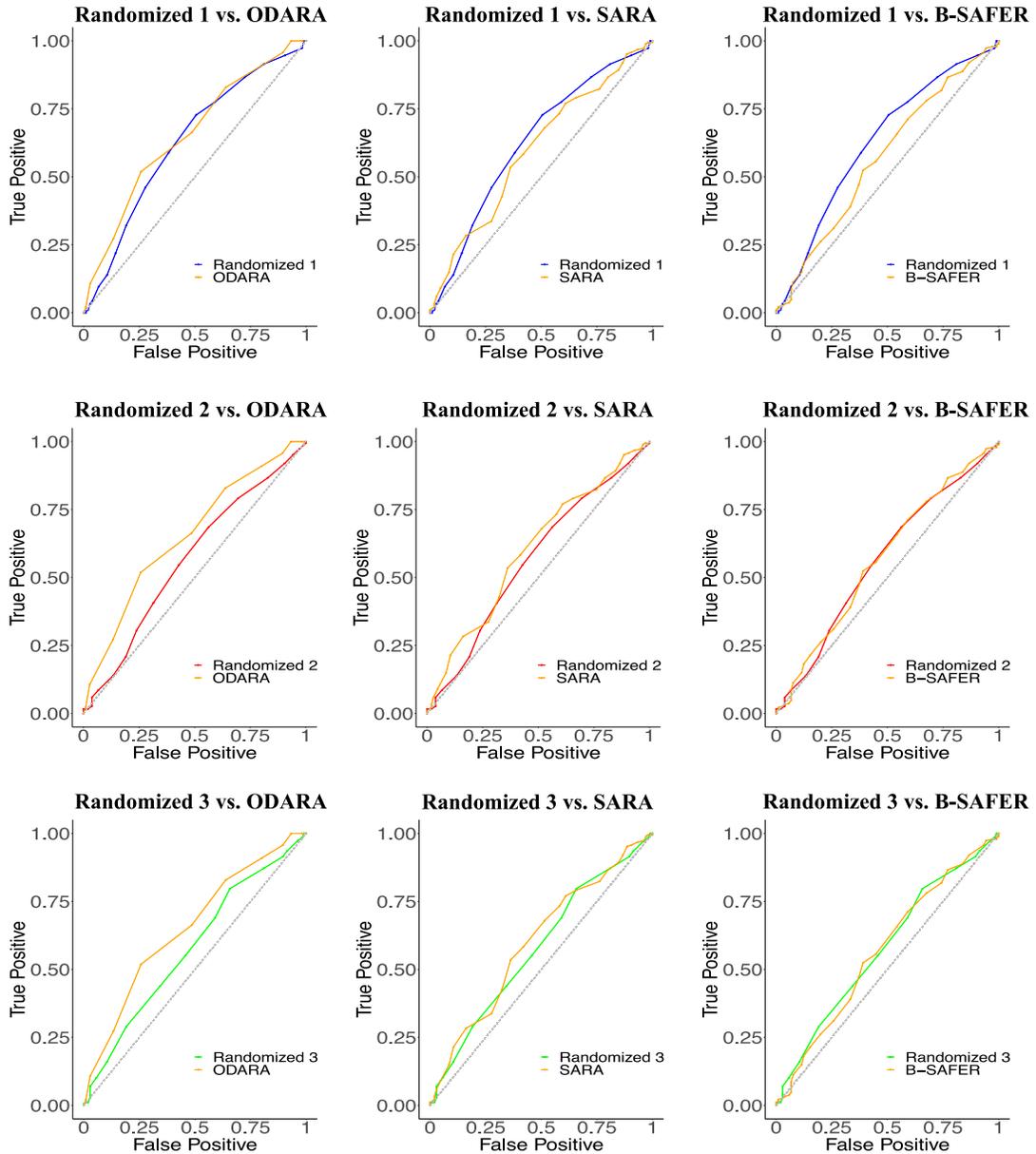


*Note.* ROC = receiver operating characteristic; ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

**Predicting General Recidivism.** When data screening for general recidivism, I found that all three randomized measures contained outliers, which were subsequently reduced prior to conducting AUC and bootstrapping analyses. AUC and bootstrapping results did not significantly change when using original variables, as opposed to outliers-reduced variables; therefore, I decided to use results from the original variables to preserve the original scores. All other variables met assumptions for AUC and bootstrapping analyses predicting general recidivism. See Table 14 for AUC values of the original and randomized IPV risk measures for predicting general recidivism. Of 274 men, 136 (66.1%) had at least one post-index offence. Based on confidence intervals of AUC values not including .50, results showed that all risk measures significantly predicted general recidivism, with small to medium effect sizes (AUC = .58 to .68). Unsurprisingly, none of the pairwise comparisons were significant (see Table 15) based on Bonferroni correction to account for conducting nine pairwise comparisons, suggesting that available IPV risk measures are no better than randomized selections of items at predicting any violent recidivism. Paired ROC curves are depicted in Figure 10.

**Figure 10**

*ROC Plots Comparing Original to Randomized IPV Risk Measures in the Prediction of General Recidivism*



*Note.* ROC = receiver operating characteristic; ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

*Incremental Validity of Original and Randomized IPV Risk Measures*

Next, I conducted Cox regression analyses in SPSS version 27 to examine whether any of the original and randomized IPV risk measures incrementally predicted IPV and any violent recidivism over time. In addition to the data screening above, I found that both IPV recidivism and any violent recidivism over time variables violated assumptions of normality and were subsequently transformed. Moreover, violent recidivism over time also contained outliers, which were subsequently reduced prior to conducting Cox regression analyses. Results did not significantly change when using original variables, as opposed to transformed variables; therefore, I decided to use results from the original variables to preserve the original scores.

Recall that of the final sample of 274 men with recidivism data, eight were further excluded from analyses predicting IPV recidivism because they were missing information on this outcome. Among IPV recidivists ( $n = 99$ ; 37.2%), the mean time until the first post-index IPV arrest or charge was 565 days ( $SD = 487$ ;  $Mdn = 471$ ; see Table 1). Cox regression analyses showed that no measure incrementally predicted IPV recidivism above and beyond the other measures (Table 16). For violent recidivism, of the 274 men, 136 (49.6%) recidivated and the mean time until their first post-index arrest or charge for any violent offence was 505 days ( $SD = 480$ ;  $Mdn = 384$ ; see Table 1). Interestingly, Cox regression analyses showed that Randomized 1 total scores significantly and incrementally predicted any violent recidivism over time (Table 16). Specifically, each additional point on Randomized 1 total was associated with a 12.0% increased risk of any violent recidivism,  $B = 0.11$ ,  $SE = .05$ , Wald's  $\chi^2(1) = 5.18$ ,  $p < .05$ ,  $e^B = 1.12$  (95% CI

[1.02, 1.24]), suggesting that Randomized 1 provided information to predict violent recidivism over time above and beyond information provided by the other measures.

**Table 16**

*Cox Regression Survival Analysis: Original and Randomized IPV Risk Measures in the Prediction of Intimate Partner Violence and Any Violent Recidivism*

Predictors	B	SE	Wald	p	e <sup>b</sup>	95% CI	
						LL	UL
Intimate Partner Violence Recidivism (n = 266)							
ODARA total	.083	.068	1.502	.220	1.087	0.951	1.241
SARA total	.002	.027	0.008	.929	1.002	0.950	1.057
B-SAFER total	.000	.032	0.000	.991	1.000	0.940	1.065
Randomized 1 total	.072	.057	1.598	.206	1.074	0.961	1.201
Randomized 2 total	-.009	.050	0.030	.864	0.991	0.898	1.094
Randomized 3 total	-.026	.061	0.181	.671	0.975	0.865	1.098
Any Violent Recidivism (n = 275)							
ODARA total	.092	.060	2.345	.126	1.096	0.975	1.232
SARA total	.037	.024	2.493	.114	1.038	0.991	1.088
B-SAFER total	-.013	.027	0.235	.628	0.987	0.935	1.041
Randomized 1 total	.113	.050	5.180	<b>.023</b>	1.120	1.016	1.235
Randomized 2 total	-.012	.045	0.077	.782	0.988	0.904	1.079
Randomized 3 total	-.094	.054	3.021	.082	0.910	0.819	1.012

*Note.* Significant *p*-values in bold. Sample sizes (*n*) vary because recidivism information was not available for all cases. For intimate partner violence recidivism, *n* = 99 recidivists and *n* = 167 non-recidivists. For any violent recidivism, *n* = 136 recidivists and *n* = 138 non-recidivists. ODARA = Ontario Domestic Assault Risk Assessment; SARA = Spousal Assault Risk Assessment Guide; B-SAFER = Brief Spousal Assault Form for the Evaluation of Risk.

## Discussion

The aim of Study 3 was to investigate whether randomized selections of items drawn from the ODARA, SARA, and B-SAFER predicted recidivism outcomes as well as the original measures. As expected and consistent with past findings in other areas of the forensic literature (i.e., Buttars et al., 2015; Kroner et al., 2005), randomized selections of items in the current study predicted recidivism outcomes as well as the original measures, further indicating that these measures may be more similar than different. More specifically, all studied risk measures equally predicted general recidivism, suggesting that original risk assessment measures are adequately assessing general criminal risk. Consistent with past research (e.g., Pham et al., 2021), only the ODARA and SARA significantly predicted any violent recidivism, but neither original measure outperformed the randomized measures, which is consistent with Kroner et al.'s (2005) findings. Interestingly, Randomized 1, which was the only randomized selection of items that significantly predicted any violent recidivism, contained the most ODARA items compared to the other two randomized risk measures, suggesting that ODARA items may be influencing its predictive validity. Indeed, my colleagues and I (Pham et al., 2021) found that the ODARA incrementally predicted violent recidivism over time above and beyond the SARA (including a later version of the SARA) and B-SAFER, suggesting that the ODARA may contain additional information to predict violent recidivism over time among high-risk samples of IPV men.

Moreover, only the ODARA and Randomized 1 significantly predicted IPV recidivism, suggesting that, at least the ODARA, is valid in predicting IPV recidivism for the current high-risk sample. However, the ODARA did not outperform any of the

randomized selections of items in the prediction of IPV recidivism, further demonstrating that it does not contain unique information to add to the prediction of IPV recidivism. In line with prior interpretations (Buttars et al., 2015; Kroner et al., 2005), the current findings seem to suggest that these risk measures are only measuring criminal risk, as all risk measures (original and randomized) significantly predicted general recidivism. Furthermore, not all risk measures significantly predicted violent and IPV recidivism, suggesting that none of the risk measures examined in the current study has captured sufficient IPV risk assessment theory to result in better prediction than randomized selections of items (Kroner et al., 2005).

The range of items in the current three measures is quite broad and represents combined clinical and empirical work of expert researchers in the criminal justice field, but beyond this, the measures' factors also need to be distinctive, which would suggest that they complement each other in estimating risk of recidivism. Indeed, studies have found that using the ODARA and SARA in tandem increased the prediction of recidivism outcomes. For example, Olver and Jung (2017) and Pham et al. (2021) found that ODARA and/or SARA scores incrementally predicted general violence and/or criminal recidivism. Importantly, both studies found that one SARA domain (i.e., *psychosocial adjustment*, Olver & Jung, 2017; *criminal history*, Pham et al., 2021) contributed most uniquely to the prediction of IPV recidivism above and beyond the ODARA score, suggesting that, when combined, these measures capture more risk-relevant information. Nevertheless, results from the current study suggest that these measures may provide more overlapping information than unique information to understand IPV risk; that is, IPV risk assessment measures appear to attend to the same simple, basic, and robust risk

factors, but they do not contain unique risk factors to add to our understanding of IPV recidivism.

Remarkably, Randomized 1 independently and significantly predicted violent recidivism over time above and beyond all other measures included in the Cox regression model, suggesting that the risk factors assessed in Randomized 1 provides complementary information to predict violent recidivism. Upon closer examination of the items contained in Randomized 1, it is clear that many of the items mapped onto the Central Eight risk factors (e.g., criminal history, procriminal attitudes, procriminal peers, family/marriage problems, and school/work problems), and therefore, also mapped onto items in Factor 2 (*Antisocial Patterns and Psychosocial Adjustment*) from Study 2. As mentioned in Study 2, it is possible that results were influenced by perpetrator subtypes and the fact that this sample consisted of mainly high-risk men (Hilton et al., 2021; also see Study 2 discussion). For example, given that the majority of the current sample consist of generally violent men (Peters et al., 2021) and are higher risk than the average sample (Hilton et al., 2021), risk factors that reflect the general criminality/antisocial patterns construct among these men would likely be related to, and predictive of, recidivism outcomes, particularly any violent recidivism (Andrews & Bonta, 2017). Furthermore, given that the original risk assessment measures were specifically designed to predict IPV recidivism (Hilton et al., 2004; Hilton, 2021; Kropp et al., 1995; Kropp et al., 2010; Kropp & Hart, 2004), rather than any violent recidivism, it makes sense that Randomized 1 would offer significantly more information to predict any violent recidivism over time, as the Central Eight risk factors have demonstrated significant validity in predicting violent recidivism (Andrews & Bonta, 2017). That said, no measure

was able to independently predict IPV recidivism over time, further suggesting that the measures either lack uniqueness or contain risk factors that are only weakly related to IPV recidivism.

An alternative to blindly researching additional risk factors for IPV recidivism is to first develop new, or improve existing, causal theories of IPV recidivism. Theoretical accounts of IPV recidivism can motivate items for consideration in risk assessment measures. To date, there is very little theory in most available work on IPV recidivism, and current IPV theories have failed to produce predictive models (Bell & Naugle, 2008).

To better predict, risk assessment measures must be developed according to constructs that are theoretically linked to the outcome behaviour of interest (Wiggins, 1973).

Optimal risk estimation only needs a systematic method of structuring the risk factors that are relevant to the outcome measures (Einhorn, 1986). Effective risk assessment is dependent on the direct link between risk factors and the outcome (Kroner et al., 2005), and without informative causal theories of IPV recidivism, efforts to ultimately prevent and manage IPV would halt at the risk assessment stage. Understanding risk factors that are directly linked to recidivism in the context of prediction can also equip clinicians with the tools to alter recidivism outcomes through intervention (Quinsey, 1995). In other words, incorporating risk factors directly related to IPV recidivism could provide risk-related areas for clinical intervention. Therefore, in addition to the need for future research to identify risk factors that are uniquely predictive of IPV recidivism, there is also a need to develop causal theories of IPV recidivism, as there is little empirical evidence to suggest that one theory is more informative than another (Bell & Naugle, 2008).

### General Discussion

The present dissertation explored the factor structure of commonly used IPV risk assessment measures and whether the underlying risk factors predict recidivism outcomes (i.e., any new violent and non-violent charges or convictions, any new violent charges or convictions against anyone, and any new violent charges or convictions against an intimate partner). The EFA revealed six underlying factors of IPV risk, which I named *Barriers to Victim Support*, *Antisocial Patterns and Psychosocial Adjustment*, *IPV-Specific and Technical Violations*, *Threats*, *Severe IPV and Negative Attitudes*, and *Victim Concern*, suggesting that available IPV risk assessment measures are multidimensional. According to findings from the present dissertation, though the number of underlying factors found was six, it is possible that there could be up to nine underlying factors, indicating a need for future research to extend and replicate these findings. Furthermore, the underlying factors that pertain to antisocial patterns and psychosocial adjustment, as well as IPV-specific and technical violations, are significantly predictive of IPV recidivism. However, only the antisocial patterns and psychosocial adjustment factor was able to contribute unique variance to the prediction of any violent and IPV recidivism, suggesting that factors specific to features of IPV are not relevant for IPV recidivism. This would indicate that factors that contribute to IPV recidivism may not be different from those that contribute to general violent recidivism. As such, it is possible that IPV recidivism can be accurately assessed using well-established instruments developed to estimate the risk of general violence. Previous research has demonstrated that IPV-specific factors do predict IPV recidivism, but whether they provide important information above and beyond the information already

provided by risk factors for general violent recidivism, such as general criminality or antisocial patterns, remains unclear, and further research is needed to examine the significance of IPV-specific factors for understanding IPV recidivism.

Consistent with past research (e.g., Pham & Jung, 2021), results from the present dissertation seem to suggest that general violent factors predict IPV recidivism statistically better than IPV-specific factors. There are three possible explanations for this finding, as discussed above: (1) factors more specific to IPV may be more relevant for non-physical forms (i.e., coercive control, emotional abuse, stalking, etc.) of IPV recidivism, which was not captured in the present dissertation; (2) factors more specific to IPV may be more predictive among certain subtypes of IPV men; and (3) current IPV risk assessment measures do not contain unique information and may only be assessing the same simple, basic, and robust risk factors. To this last point, I found that randomized selections of items predicted as well as the original risk assessment measures in Study 3, suggesting that available IPV risk assessment measures in their current form are not unique enough to provide complementary information to predict IPV recidivism. As others have concluded (Buttars et al., 2015; Kroner et al., 2005), it is possible that these risk assessment measures only contain robust risk factors to assess criminal risk, but these risk measures may not completely capture risk factors relevant to risk of IPV recidivism. In other words, it is possible that no single risk measure has captured sufficient risk assessment theory to predict IPV recidivism significantly better than randomized selections of items. Given the lack of informative causal theories of IPV recidivism (Bell & Naugle, 2008), it is not surprising that available IPV risk assessment measures are not yet optimized, as causal theories would assist in selecting items to empirically evaluate.

Given the limited resources in the criminal justice system, the most dangerous IPV men should receive services first and receive more intensive treatment and monitoring, as considerable research demonstrates that the greatest response to treatment results from reserving the most intensive interventions (custody, supervision, treatment, and other actions aimed at limiting reoffending) for the highest risk cases (e.g., Bonta & Andrews, 2017). Therefore, effective risk assessment can help identify persons who are in the highest risk category and represents the first step in offender management. However, while the literature contains a plethora of violence risk assessment measures developed to assess the risk of IPV recidivism (see van der Put et al., 2019), these risk assessment measures are far from ideal. Given the different approaches used to develop the ODARA, SARA, and B-SAFER, it is unsurprising that results from the present dissertation demonstrate that these risk assessment measures contain both similar and different risk factors among them, some of which provided unique information to predict recidivism, while others provided redundant information. These results contribute to our understanding of IPV risk prediction and therefore, risk management. Notably, factor analyses of sexual offender risk assessment measures have found at least two factors that comprise sexual offender risk assessment measures: *sexual deviance/criminality* and *general criminality/antisocial behaviour* (e.g., Allen & Pflugradt, 2014; Brouillette-Alarie & Proulx, 2013; Pham & Ducro, 2008; Walters et al., 2009). These factors constitute the broad risk domains most strongly associated with sexual offending and are now a part of many sex offender treatment curricula (Doren, 2004; Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). For the IPV literature, identifying risk-relevant factors for IPV recidivism could similarly assist in management of IPV perpetrators (i.e.,

they can be included as part of IPV treatment curricula), as well as provide evidence for the importance of specialized IPV risk assessment tools. To that end, findings from the present dissertation offer a significant contribution to the IPV literature.

Although risk prediction is an essential step in offender management, a misunderstanding arises from the notion that different risk assessment approaches and variables are needed for prediction versus management, such as static versus dynamic variables. For example, because SPJ tools guide assessors to consider how risk factors might affect risk and to specify interventions to reduce risk via the inclusion putatively dynamic variables, it is argued that these tools offer distinct advantages over actuarial measures when one's goal is to intervene to manage or reduce risk (Guy et al., 2012). The argument that one type of tool is better than another for risk management implies that the tool not only predicts recidivism but also that variation in its items portends to variation in risk and that intervening with these variables or items reliably reduces risk. There is no question that correctional intervention needs to be concerned with risk factors that are changeable and amenable to modification through intervention (i.e., dynamic risk factors; Bonta & Andrews, 2017) and there is certainly merit to the criticism that evaluators cannot use static, unchangeable risk factors to inform the selection of treatment targets or to evaluate change, even though static factors predict recidivism. However, even though the static/dynamic dichotomy has been widely adopted, evidence does not suggest that static and putatively dynamic risk factors are fundamentally different entities; that is, they both predict recidivism because they are behavioural markers of latent risk-relevant propensities. Importantly, researchers tend to disagree on what factors are dynamic and how to define and assess such factors. Furthermore, to my knowledge, there is only one

prospective study that has provided empirical evidence that change scores (i.e., difference between risk scores at pre- and post-treatment) significantly predict IPV recidivism (e.g., Schafers et al., 2021). Notably, however, there are available studies that have examined the predictive validity of putatively dynamic risk factors assessed at only one time point, demonstration at least indirect support for dynamic risk factors in IPV (e.g., Kuijpers et al., 2012; Hilton & Radatz, 2018; Olver & Jung, 2017). Nevertheless, until more prospective research is conducted to examine the predictive validity of dynamic risk factors (and their change scores) in IPV, it may be more practical to use these risk factors, whether perceived as static or dynamic, as indicators of potentially changeable psychological features. To that end, findings from the present dissertation further contribute to our understanding of the number and nature of risk factors that underlie IPV risk, which may ultimately be used to inform treatment interventions for IPV.

Furthermore, though most clinicians believe that tools that include dynamic variables are more useful for treatment planning, they do not use these tools to meet individuals' treatment needs (Viljoen et al., 2018). Unfortunately, the variables that clinicians assume are associated with violence risk are not necessarily empirically valid predictors. For example, variables that clinicians often consider important in correctional treatment, including insight, treatment motivation, and attitudes minimizing offences, were unrelated to violent recidivism in large samples of men discharged from a forensic hospital (Harris & Rice, 2015). Furthermore, a systematic review of treatment evaluations showed that treatment for mental illness may improve individuals' mental health but have relatively little impact on recidivism risk (e.g., Morgan et al., 2012). An alternative solution is to attempt to include risk factors that are informed by theory, whether in a risk

assessment measure or in the broader risk assessment process that includes suggestions for intervention (Mills, 2017). Theoretically important variables imply a (hypothesized) causal association, which can motivate items for consideration that should then be investigated in follow-up studies and validation research. For example, the General Personality and Cognitive Social Learning theory of criminal conduct underlies the RNR model (Bonta & Andrews, 2017), which has been demonstrated to predict recidivism substantially better than clinically motivated factors, such as psychiatric history (Bonta et al., 2014). Certainly, empirical evidence can then help inform and refine the theory, as it has done for the RNR model. In the IPV literature, the call to improve theoretically informed IPV intervention grows (e.g., Radatz & Hilton, 2019; Radatz & Wright, 2016), but theoretically motivated IPV risk assessment is not yet a viable option without a well-established theoretical model of IPV recidivism.

### **Limitations**

There are several limitations in the present dissertation that should be noted. First, the small sample size may have impacted power to detect more underlying factors of IPV risk (as suggested by the factor retention methods discussed above) and the significant relationships between some factors and IPV recidivism. For example, it is generally suggested that factor analyses should have at least 300 cases (e.g., Comrey & Lee, 1992; Tabachnick & Fidell, 2012). However, factors with a large number of high factor loadings are reliable regardless of sample size (Guadagnoli and Velicer, 1988). Factors in the present dissertation contained several items with high factor loadings (e.g., .50 and above; see Table 5), suggesting that the factors are reliable despite the small sample size. Second, the present dissertation was conducted in a Canadian context and drew cases

from one specific law enforcement organization (see Ennis et al., 2015); therefore, generalizability to other jurisdictions or agencies cannot be assumed. Generalizability may also be limited due to the highly selected nature of this sample, as the risk levels of men served by other organizations may not be as high as men in this study (Hilton et al., 2021). Future research should attempt to replicate these findings with a larger sample from other organizations.

Third, coding of the risk assessment measures was based on archival documents that threat assessors gathered while completing their assessment reports, and though I had copious information in terms of criminal history, sources were more limited for coding other items. For example, items related to personality, behavioural control, mental health, attitudes, or victim concern could be better scored with information from psychological tests and/or interviews. Indeed, IRR was lower for items that assessed psychological constructs and victim concern (see Hilton et al., 2021). Poor reliability could have rendered the underlying factors invalid or unstable and reduced the predictive validity of the factors and measures reported in the present dissertation. Furthermore, it is possible that not all acts of violence were captured in coding recidivism, as only official documentation was used to identify recidivistic events. In fact, studies have found that victims do not always report incidents of IPV to authorities (Fanslow & Robinson, 2010) and many victims retract their allegations, often leading to dismissal of criminal charges (e.g., Sleath & Smith, 2017). Additionally, researchers have estimated that up to 60% of IPV incidents are unreported (e.g., Bachman et al., 1995; Gracia, 2004). Given these issues, the primary investigators and I endeavoured to mitigate reliability issues through extensive training of coders and implementation of complacency checks. Still, the present

findings should be interpreted with caution, as the current sample may not be representative and generalizable to undetected IPV incidents. Relatedly, although I excluded time-not-at-risk due to custody for the index offence, my analyses did not account for competing risks of recidivism (Noordzij et al., 2013). For example, individuals who are arrested, charged, or convicted in relation to a general or other violent crime (non-IPV) may no longer be at risk for IPV while in custody for these crimes. However, though I collected dates of violent reoffences, I did not collect dates of general reoffences due to lack of resources and time constraints; therefore, I could not account for competing risks of recidivism. Although it is not common practice to account for competing risks in forensic research, future research should still attempt to replicate these findings while account for competing risks of recidivism.

Fourth, more recent definitions of IPV tend to include non-physical violence, such as stalking, coercive control, and psychological/emotional abuse (Graham et al., 2020; Kebbel, 2019), but the available documents did not contain information on these forms of IPV; thus, the definition of IPV was fairly narrow in the present dissertation. Although this approach minimizes ambiguity and over-inclusiveness, it excludes behaviours that may cause as much fear or serious harm to the victim as physical violence. Clearly, IPV comes in all forms, and excluding non-physical IPV may only provide an incomplete picture of the diverse nature of IPV. Future research should attempt to replicate these findings using a broader definition of IPV that includes all forms of violence.

Last, I was not aware of any interventions used to manage risk following threat assessment or whether risk management remained in place at the time of recidivism for the men in this sample. Given that all men in this sample were referred for threat

assessment based on police officers' intuitive perception that cases were high-risk or otherwise complex, and that the vast majority were rated as high-risk for violence by threat assessors, it is likely that many men in this sample were subject to relatively intensive management efforts. The average recidivism over time for any violent and IPV recidivism was nearly two years post-release, with wide variations in recidivism latency indicated by large standard deviations, possibly attributable to risk management strategies (e.g., alcohol prohibition, no contact orders, etc.) in place for a limited time during probation, parole, and recognizance. Indeed, threat assessment reports contain a section for recommended risk management strategies, and their level of influence on treatment decisions made by other jurisdictions who are using threat assessment reports is currently unknown. Undergoing treatment or being restricted by risk management strategies could affect men's likelihood of recidivism, potentially impacting findings in the present dissertation. Future research should investigate potential moderating effects of risk management interventions on the relationship between risk and recidivism.

### **Conclusion**

The present dissertation explored the underlying factor structure of commonly used risk assessment measures and whether their factors predict recidivism outcomes (i.e., any, any violent, IPV) in a threat assessment sample that was higher risk than normative samples and samples from studies of routine policing (Hilton et al., 2021). Overall, I found that IPV-specific risk factors do not provide complementary information to the prediction of IPV recidivism, above and beyond other risk factors, particularly factors that pertain to antisocial patterns. I also found that original risk assessment measures do not significantly outperform randomized selections of items. Despite the

above limitations, the present findings suggest that there may be multiple dimensions that comprise IPV risk, directing professionals towards further potential needs of men who perpetrate IPV. If future research replicates my findings and demonstrates a similar number and nature of these domains, then IPV interventions could eventually be tailored to focus on the strongest risk domains associated with IPV recidivism, in line with RNR principles (Andrews & Bonta, 2017).

The extent to which correctional services address characteristics that are most strongly related to offending behaviour significantly affects their treatment success (e.g., Bonta & Andrews, 2017). My dissertation findings suggest that more work is needed to improve our current understanding of IPV risk and to identify factors most strongly associated with IPV recidivism in order to target these factors in treatment. Researchers in this field study risk assessment in the hopes of contributing to the management of IPV risk and ultimately, to the prevention of IPV. Though assessment and management are related tasks, they are considered distinct tasks. While some scholars prefer to include risk management and risk communication under a broader definition of risk assessment, assessment is still the first step and informs efforts to contain or mitigate risk. Therefore, it is important to optimize our understanding of IPV risk and risk assessment in order to move the field further towards successfully preventing dangerous crimes against intimate partners.

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Appendix A

Coding Forms A-C

Optimizing Risk Assessment for Domestic Violence (ORADV):  
Coding Form A: Index and History

I. BASIC INFORMATION

FPS:	
APS:	

1. \_\_\_/\_\_\_/\_\_\_\_ **DATECODE**: Date the file was coded (mm/dd/yyyy)
2. \_\_\_ **CODER**: The initials of the coder
3. \_\_\_\_-\_\_\_\_ **REPORTNO**: Assessment report number – 5 or 6 digits
4. \_\_\_/\_\_\_/\_\_\_\_ **ASSESDAT**: Date of Assessment (mm/dd/yyyy)
5. \_\_\_ **ASSESTYPE**: Assessment type (1 = Provisional or Expedited; 2 = Full Threat Assessment)
6. \_\_\_ **HEAT**: Assessment contains History Evaluation and Assessment Tool? \*
7. \_\_\_/\_\_\_/\_\_\_\_ **INDEXDAT**: Date of Index Offence (mm/dd/yyyy)
- \_\_\_\_-\_\_\_\_-\_\_\_\_ **POLICE.OCC**: Police occurrence # corresponding to the index offence
8. \_\_\_ **POSTINDEX**: Is the Index Offence different from the current offence in the request form? \* (If yes, how many months from the referral date to the Index Offence? \_\_)
- \_\_\_ **DIFFINDEX**: Does the RA-identified Index Offence match up with the TA-identified Index Offence? \* (Code "." if unclear)

II. OFFENDER VARIABLES

DEMOGRAPHIC INFORMATION

9. \_\_\_/\_\_\_/\_\_\_\_ **ODOB**: Offender date of birth (mm/dd/yyyy)
10. \_\_\_ **ETHNICITY**: Offender's Ethnicity (1 = Caucasian/White/European; 2 = Native/Native American/Aboriginal/Metis; 3 = Other; specify: \_\_\_\_\_)
11. \_\_\_ **EDUCATE**: Highest grade completed (elementary, junior high, or high school) (#; use "at least" number)
12. \_\_\_ **HIGHSCHOOL**: Completed high school (high school diploma or equivalent) \*  
 High School Diploma [1]  Equivalent (i.e., GED) [2]
13. \_\_\_ **STARTCOLLEGE**: Started college or university training \*
14. \_\_\_ **COMPLETECOLLEGE**: Completed college or university program/degree \*
15. \_\_\_ **EMPLOYED**: Employed at time of index? \* (specify: \_\_\_\_\_)
16. \_\_\_ **R.SARAV2.5: SARAV2 #5: Recent employment problems**  
 0 = Currently employed (full-time or near full-time, incl. self-employ), stable work history within past year  
 1 = Currently unemployed w/stable work hx in past year; or currently employed w/unstable work hx in past year  
 2 = Currently unemployed w/unstable work history within past year
17. \_\_\_ **R.SARAV3.P3past: SARAV3 Perpetrator Risk Factor #3: Employment/financial (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
18. \_\_\_ **R.SARAV3.P3recent: SARAV3 Perpetrator Risk Factor #3: Employment/financial (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
19. \_\_\_ **BSAFER8past: B-SAFER #8: Employment problems (Past)**  
 0 = No evidence of problems in employment (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems in employment (> 4 weeks prior to assessment)  
 2 = Evidence or problems in employment (> 4 weeks prior to assessment)
20. \_\_\_ **BSAFER8recent: B-SAFER #8: Employment problems (Recent)**  
 0 = No evidence of problems in employment (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems in employment (during the 4 weeks prior to assessment)  
 2 = Evidence or problems in employment (during the 4 weeks prior to assessment)

RELATIONSHIPS

21. \_\_\_ **IPARTNERS**: Intimate partner relationships (#; use "at least" number)
22. \_\_\_ **R.SARAV2.4: SARAV2 #4: Recent relationship problems**  
 0 = No change in marital status and none or mild conflict regarding marital status within past year  
 1 = Moderate conflict regarding relationship status within past year

REPORTNO: \_\_\_ - \_\_\_ - \_\_\_

2 = Separation from partner or extreme conflict regarding relationship status within past year

- 23. **R.SARAV3.P1past: SARAV3 Perpetrator Risk Factor #1: Intimate relationships (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 24. **R.SARAV3.P1recent: SARAV3 Perpetrator Risk Factor #1: Intimate relationships (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 25. **BSAFER7past: B-SAFER #7: Intimate relationship problems (Past)**  
 0 = No evidence or problems in intimate relationships (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems in intimate relationships (> 4 weeks prior to assessment)  
 2 = Evidence of problems in intimate relationships (> 4 weeks prior to assessment)
- 26. **BSAFER7recent: B-SAFER #7: Intimate relationship problems (Recent)**  
 0 = No evidence or problems in intimate relationships (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems in intimate relationships (during the 4 weeks prior to assessment)  
 2 = Evidence of problems in intimate relationships (during the 4 weeks prior to assessment)
- 27. **R.SARAV3.P2past: SARAV3 Perpetrator Risk Factor #2: Non-intimate relationships (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 28. **R.SARAV3.P2recent: SARAV3 Perpetrator Risk Factor #2: Non-intimate relationships (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment

**TRAUMA**

- 29. **R.SARAV2.6: SARAV2 #6: Victim of and/or witness to family violence as a child or adolescent**  
 0 = Never a victim or witness to family violence as a child or adolescent  
 1 = Victim of and/or witness to infrequent or less serious family violence as a child or adolescent  
 2 = Victim of and/or witness to frequent or serious family violence as a child or adolescent
- 30. **R.SARAV3.P4past: SARAV3 Perpetrator Risk Factor #4: Trauma/victimization (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 31. **R.SARAV3.P4recent: SARAV3 Perpetrator Risk Factor #4: Trauma/victimization (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment

**SUBSTANCE ABUSE AND MENTAL HEALTH**

- 32. **R.SARAV2.7: SARAV2 #7: Recent substance abuse/dependence**  
 0 = No evidence of substance abuse or dependence within the past year  
 1 = Less serious substance abuse within the past year  
 2 = Serious (impair health, social, legal) substance abuse or dependence within the past year
- 33. **R.SARAV3.P8past: SARAV3 Perpetrator Risk Factor #8: Substance use (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 34. **R.SARAV3.P8recent: SARAV3 Perpetrator Risk Factor #8: Substance use (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment

= SARA V2     
  = B-SAFER     
 \* 0 = No  
 = SARA V3     
  = ODARA     
 \* 1 = Yes

REPORTNO: \_\_\_ - \_\_\_\_

35. **RODARA11: ODARA #11: Substance abuse \***  
*At least two of the following must be present:*  
 he consumed alcohol immediately before or during the index assault,  
 he used drugs immediately before or during the index assault,  
 he abused drugs and/or alcohol in the days or weeks before the index assault (e.g., alcohol intoxication, frequent alcohol use, use of street drugs, misuse of medication),  
 he noticeably increased his abuse of drugs and/or alcohol in the days or weeks before the index assault (without a return to normal consumption prior to the index assault),  
 he had been more angry or violent when using drugs and/or alcohol before the index assault,  
 he consumed alcohol before or during a criminal offence pre-dating the index assault,  
 his alcohol use before the index assault but since age 18 resulted in some problems or interference in his life  
 his drug use before the index assault but since age 18 resulted in some problems or interference in his life
36. **BSAFER9past: B-SAFER #9: Substance use problems (Past)**  
 0 = No evidence of problems with substance use (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems with substance use (> 4 weeks prior to assessment)  
 2 = Evidence or problems with substance use (> 4 weeks prior to assessment)  
 Definite [1]     Provisional [2]
37. **BSAFER9recent: B-SAFER #9: Substance use problems (Recent)**  
 0 = No evidence of problems with substance use (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems with substance use (during the 4 weeks prior to assessment)  
 2 = Evidence or problems with substance use (during the 4 weeks prior to assessment)  
 Definite [1]     Provisional [2]
38. **R.SARAV2.8: SARAv2 #8: Recent suicidal or homicidal ideation/intent**  
 0 = No homicidal or suicidal ideation/intent within the past year  
 1 = Less serious homicidal or suicidal ideation/intent within the past year  
 2 = Serious (persistent, intrusive, high-lethality) homicidal or suicidal ideation/intent within the past year
39. **R.SARAV3.P9past: SARAv3 Perpetrator Risk Factor #9: Violent/suicidal ideation (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
40. **R.SARAV3.P9recent: SARAv3 Perpetrator Risk Factor #9: Violent/suicidal ideation (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
41. **R.SARAV2.10: SARAv2 #10: Personality disorder with anger, impulsivity, or behavioral instability**  
 0 = No personality disorder characterized by chronic problems with anger, impulsivity, or behavioral instability  
 1 = Personality disorder characterized by less serious problems with anger, impulsivity, or behavioral instability  
 2 = Personality disorder characterized by serious problems with anger, impulsivity, or behavioral instability  
 Definite [1]     Provisional [2]
42. **R.SARAV3.P7past: SARAv3 Perpetrator Risk Factor #7: Personality disorder (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year  
 Definite [1]     Provisional [2]
43. **R.SARAV3.P7recent: SARAv3 Perpetrator Risk Factor #7: Personality disorder (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment  
 Definite [1]     Provisional [2]
44. **R.SARAV2.9: SARAv2 #9: Recent psychotic and/or manic symptoms**  
 0 = No psychotic or manic symptoms within the past year  
 1 = Less serious psychotic or manic symptoms within the past year  
 2 = Serious psychotic or manic symptoms within the past year  
 Definite [1]     Provisional [2]

REPORTNO: \_\_\_ - \_\_\_\_

- 45. \_\_\_ **R.SARAV3.P6past: SARAV3 Perpetrator Risk Factor #6: Major mental disorder (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year  
 Definite [1]    Provisional [2]
- 46. \_\_\_ **R.SARAV3.P6recent: SARAV3 Perpetrator Risk Factor #6: Major mental disorder (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment  
 Definite [1]    Provisional [2]
- 47. \_\_\_ **BSAFER10past: B-SAFER #10: Mental health problems (Past)**  
 0 = No evidence of problems with mental health (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems with mental health (> 4 weeks prior to assessment)  
 2 = Evidence of problems with mental health (>4 weeks prior to assessment)  
 Definite [1]    Provisional [2]
- 48. \_\_\_ **BSAFER10recent: B-SAFER #10: Mental health problems (Recent)**  
 0 = No evidence of problems with mental health (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of problems with mental health (during the 4 weeks prior to assessment)  
 2 = Evidence of problems with mental health (during the 4 weeks prior to assessment)  
 Definite [1]    Provisional [2]

**III. INTIMATE PARTNER VIOLENCE OFFENDING CHARACTERISTICS**  
**INDEX OFFENCE VICTIM VARIABLES**

- 49. \_\_\_ / \_\_\_ / \_\_\_\_ **VDOB: Date of birth of the intimate partner victim (mm/dd/year)**
- 50. \_\_\_ **VPARTNER: Type of intimate partner victim (index) (1 = current marital or cohabiting partner; 2 = former marital or cohabiting partner; 3 = current dating partner; 4 = former dating partner)**
- 51. \_\_\_ **VLENGTH: Length of relationship with victim (1 = 0 – 6 months; 2 = 7 – 11 months; 3 = 12 – 23 months; 4 = 24+ months; Specify if exact number of months is known: \_\_\_)**
- 52. \_\_\_ **RODARA8: ODARA #8: More than one child altogether \***
- 53. \_\_\_ **RODARA9: ODARA #9: Victim's biological child from a previous partner \***
- 54. \_\_\_ **CUSTODY: Court imposed child custody and access agreement in place between offender and victim (index) \***
- 55. \_\_\_ **COLVICTIMIDX: Number of collateral victims of violence by the perpetrator at index (#; use "at least" number; specify the collateral victim(s): \_\_\_\_\_)**
- 56. \_\_\_ **RODARA7: ODARA #7: Victim concern \***
- 57. \_\_\_ **BSAFER12past: B-SAFER #12: Extreme Fear of Perpetrator (Past)**  
 0 = No evidence of extreme fear of the perpetrator (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of extreme fear of the perpetrator (> 4 weeks prior to assessment)  
 2 = Evidence of extreme fear of the perpetrator (> 4 weeks prior to assessment)
- 58. \_\_\_ **BSAFER12recent: B-SAFER #12: Extreme Fear of Perpetrator (Recent)**  
 0 = No evidence of extreme fear of the perpetrator (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of extreme fear of the perpetrator (during the 4 weeks prior to assessment)  
 2 = Evidence of extreme fear of the perpetrator (during the 4 weeks prior to assessment)
- 59. \_\_\_ **RODARA13: ODARA #13: Barriers to victim support \***  
 At least one of the following must be present:  
 the victim of the index assault has one or more children age 18 or under who live with her and for whom she provides care.  
 and/or she has no telephone (i.e., no cell phone and no landline telephone in the home)  
 and/or she has no transportation (i.e., no access to a vehicle and no public transportation in the vicinity of her home and no money for a taxi)  
 and/or she is geographically isolated (i.e., living in a rural area with nobody living close by)  
 and/or she consumed alcohol or drugs just before or during the index assault, or she has a history of alcohol or drug abuse (e.g., alcohol intoxication, frequent alcohol use, use of street drugs, misuse of prescription medication)

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- 60. **R.SARAV3.V1past: SARAV3 Victim Vulnerability Factor #1: Barriers to security (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 61. **R.SARAV3.V1recent: SARAV3 Victim Vulnerability Factor #1: Barriers to security (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 62. **R.SARAV3.V2past: SARAV3 Victim Vulnerability Factor #2: Barriers to independence (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 63. **R.SARAV3.V2recent: SARAV3 Victim Vulnerability Factor #2: Barriers to independence (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 64. **R.SARAV3.V3past: SARAV3 Victim Vulnerability Factor #3: Interpersonal resources (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 65. **R.SARAV3.V3recent: SARAV3 Victim Vulnerability Factor #3: Interpersonal resources (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 66. **R.SARAV3.V4past: SARAV3 Victim Vulnerability Factor #4: Community resources (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 67. **R.SARAV3.V4recent: SARAV3 Victim Vulnerability Factor #4: Community resources (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 68. **BSAFER13past: B-SAFER #13: Inadequate Support or Resources (Past)**  
 0 = No evidence of inadequate support or sources (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of inadequate support or resources (> 4 weeks prior to assessment)  
 2 = Evidence of inadequate support or resources (> 4 weeks prior to assessment)
- 69. **BSAFER13recent: B-SAFER #13: Inadequate Support or Resources (Recent)**  
 0 = No evidence of inadequate support or sources (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of inadequate support or resources (during the 4 weeks prior to assessment)  
 2 = Evidence of inadequate support or resources (during the 4 weeks prior to assessment)
- 70. **BSAFER14past: B-SAFER #14: Unsafe living situation (Past)**  
 0 = No evidence of an unsafe living situation (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of an unsafe living situation (> 4 weeks prior to assessment)  
 2 = Evidence of an unsafe living situation (> 4 weeks prior to assessment)
- 71. **BSAFER14recent: B-SAFER #14: Unsafe living situation (Recent)**  
 0 = No evidence of an unsafe living situation (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of an unsafe living situation (during the 4 weeks prior to assessment)  
 2 = Evidence of an unsafe living situation (during the 4 weeks prior to assessment)
- 72. **R.SARAV3.V5past: SARAV3 Victim Vulnerability Factor #5: Attitudes or Behavior (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 73. **R.SARAV3.V5recent: SARAV3 Victim Vulnerability Factor #5: Attitudes or Behavior (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment

= SARA V2     
  = B-SAFER     
 \* 0 = No  
 = SARA V3     
  = ODARA     
 \* 1 = Yes

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- 74. \_\_\_ **BSAFER11past: B-SAFER #11: Inconsistent Attitudes or Behavior (Past)**  
 0 = No evidence of inconsistent attitudes or behavior (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of inconsistent attitudes or behavior (> 4 weeks prior to assessment)  
 2 = Evidence of inconsistent attitudes or behavior (> 4 weeks prior to assessment)
- 75. \_\_\_ **BSAFER11recent: B-SAFER #11: Inconsistent Attitudes or Behavior (Recent)**  
 0 = No evidence of inconsistent attitudes or behavior (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of inconsistent attitudes or behavior (during the 4 weeks prior to assessment)  
 2 = Evidence of inconsistent attitudes or behavior (during the 4 weeks prior to assessment)
- 76. \_\_\_ **R.SARAV3.V6past: SARAV3 Victim Vulnerability Factor #6: Mental health (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year  
      Definite [1]    Provisional [2]
- 77. \_\_\_ **R.SARAV3.V6recent: SARAV3 Victim Vulnerability Factor #6: Mental health (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment  
      Definite [1]    Provisional [2]
- 78. \_\_\_ **BSAFER15past: B-SAFER #15: Health Problems (Past)**  
 0 = No evidence of health problems (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of health problems (> 4 weeks prior to assessment)  
 2 = Evidence of health problems (> 4 weeks prior to assessment)
- 79. \_\_\_ **BSAFER15recent: B-SAFER #15: Health Problems (Recent)**  
 0 = No evidence of health problems (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of health problems (during the 4 weeks prior to assessment)  
 2 = Evidence of health problems (during the 4 weeks prior to assessment)

**NATURE AND SEVERITY OF INDEX**

- 80. \_\_\_ **OSUBIDX: Alcohol or drugs used by offender at index? \***
- 81. \_\_\_ **VISUBIDX: Alcohol or drugs used by victim at index? \***
- 82. \_\_\_ **R.SARAV2.18: SARAV2 #18: Severe and/or sexual assault (index only)**  
 0 = No physical or sexual violence in the index offence  
 1 = Less serious violence in the index offence  
 2 = Severe physical (suffered serious physical injuries, require medical attention) and/or sexual violence in the index offence
- 83. \_\_\_ **INJURYVIDX: Victim injury at index? \***
- 84. \_\_\_ **TXIND: What was the degree of injury? (0 = Only minor injury that did not require treatment; 1 = treated at scene or treatment offered at scene; 2 = treated and released at hospital (no overnight stay); 3 = hospitalized for at least one night; ". " if 'no' to previous item)**
- 85. \_\_\_ **REFUSETXIND: Victim refused treatment for injury at index \* ("." if no injury noted at index)**
- 86. \_\_\_ **R.SARAV2.19: SARAV2 #19: Use of weapons and/or credible threats of death (index only)**  
 0 = No evidence of (a) use or threatened future use of a weapon (firearms, knives, objects used as clubs), or (b) credible threats of serious bodily harm or death in the index  
 1 = Threatened future use of a weapon, or credible threats of serious bodily harm in the index  
 2 = Use of a weapon, or credible threats of death in the index
- 87. \_\_\_ **RODARA5: ODARA #5: Threat to harm or kill at the index assault \***
- 88. \_\_\_ **RODARA6: ODARA #6: Confinement of the partner at the index assault \***
- 89. \_\_\_ **R.SARAV2.20: SARAV2 #20: Violation of "no contact" order (index only)**  
 0 = Index offence does not involve violation of "no contact" provisions of civil or criminal court order, or individual never had such an order  
 1 = Index offence involves violation of "no contact" provisions of civil or criminal court order, did not result in arrest  
 2 = Index offence includes an arrest for violating "no contact" provisions of civil or criminal court order
- 90. \_\_\_ **DXCLH: Cormier-Lang value for *Violent* Index charges (#)**

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**OFFENDER PERSPECTIVE**

- 91. \_\_\_ **R.SARAV2.16: SARAV2 #16: Extreme minimization or denial of spousal assault history**  
 0=Little or no discrepancy between individual’s account of past assault and documented account(s)  
 1=Moderate minimization or denial despite documented evidence to contrary (i.e., denies some but admits to others, denies personal responsibility by blaming victim, denies serious consequences)  
 2=Extreme minimization or denial (i.e., denies many or all past assaults, denies personal responsibility, denies serious consequences; for many or all)
- 92. \_\_\_ **R.SARAV2.17: SARAV2 #17: Attitudes that support or condone spousal assault**  
 0 = No evidence of attitudes that support or condone wife assault  
 1 = Appears to implicitly endorse attitudes that support or condone wife assault  
 2 = Explicitly endorses attitudes that support or condone wife assault
- 93. \_\_\_ **R.SARAV3.P10past: SARAV3 Perpetrator Risk Factor #10: Distorted thinking about IPV (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 94. \_\_\_ **R.SARAV3.P10recent: SARAV3 Perpetrator Risk Factor #10: Distorted thinking about IPV (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 95. \_\_\_ **BSAFER5past: B-SAFER #5: Violent attitudes (Past)**  
 0 = No evidence of violent attitudes (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violent attitudes (> 4 weeks prior to assessment)  
 2 = Evidence of violent attitudes (> 4 weeks prior to assessment)
- 96. \_\_\_ **BSAFER5recent: B-SAFER #5: Violent attitudes (Recent)**  
 0 = No evidence of violent attitudes (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violent attitudes (during the 4 weeks prior to assessment)  
 2 = Evidence of violent attitudes (during the 4 weeks prior to assessment)

**IV. CRIMINAL OFFENDING BEHAVIOR (MAY INCLUDE INDEX)**

**GENERAL CRIMINAL HISTORY**

- 97. \_\_\_ **R.SARAV2.3: SARAV2 #3: Past violation of conditional release or community (not including index)**  
 0 = No history of violating the terms of conditional release or community supervision  
 1 = Past violation(s) of the terms of conditional release or community supervision that did not result in arrest  
 2 = Past arrest(s) for violating the terms of conditional release or community supervision
- 98. \_\_\_ **RODARA4: ODARA #4: Failure on prior conditional release \***
- 99. \_\_\_ **RODARA3: ODARA #3: Prior custodial sentence of 30 days or more \***

**DOMESTIC VIOLENCE**

- 100. \_\_\_ **RODARA1: ODARA #1: Prior domestic incident \***
- 101. \_\_\_ **R.SARAV2.11: SARAV2 #11: Past physical assault (not including index)**  
 0 = No actual or attempted physical assault of past or current intimate partner(s)  
 1 = Attempted to physically assault past or current intimate partner(s)  
 2 = Physically assaulted past or current intimate partner(s)
- 102. \_\_\_ **BSAFER1past: B-SAFER #1: Violent acts (Past)**  
 0 = No evidence of violent acts in the context of intimate partner violence (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violent acts in the context of intimate partner violence (> 4 weeks prior to assessment)  
 2 = Evidence of violent acts in the context of intimate partner violence (> 4 weeks prior to assessment)
- 103. \_\_\_ **BSAFER1recent: B-SAFER #1: Violent acts (Recent)**  
 0 = No evidence of violent acts in the context of intimate partner violence (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violent acts in the context of intimate partner violence (during the 4 weeks prior to assessment)  
 2 = Evidence of violent acts in the context of intimate partner violence (during the 4 weeks prior to assessment)

= SARA V2       = B-SAFER      \* 0 = No  
 = SARA V3       = ODARA      \* 1 = Yes

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- 104. \_\_\_ **R.SARAV3.N3past: SARAv3 Nature of IPV Factor #3: Physical harm (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 105. \_\_\_ **R.SARAV3.N3recent: SARAv3 Nature of IPV Factor #3: Physical harm (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 106. \_\_\_ **IPVINJURY: Most serious historical (i.e., from an incident prior to the index) IPV-related (0 = only minor injury that did not require treatment; 1 = treated at scene or treatment offered at scene; 2 = treated and released at hospital (no overnight stay); 3 = hospitalized at least one night; 4 = homicide)**
- 107. \_\_\_ **STRANG: Strangled or attempted to strangle \***  
 Index    Historical (i.e., prior to index)    Post Index (i.e., after the index)
- 108. \_\_\_ **RODARA12: ODARA # 12: Assault on victim when pregnant \***
- 109. \_\_\_ **R.SARAV3.N5past: SARAv3 Nature of IPV Factor #5: Severe IPV (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 110. \_\_\_ **R.SARAV3.N5recent: SARAv3 Nature of IPV Factor #5: Severe IPV (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 111. \_\_\_ **R.SARAV3.N6past: SARAv3 Nature of IPV Factor #6: Chronic IPV (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 112. \_\_\_ **R.SARAV3.N6recent: SARAv3 Nature of IPV Factor #6: Chronic IPV (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 113. \_\_\_ **R.SARAV2.14: SARAv2 #14: Recent escalation in frequency or severity of assault**  
 0 = No apparent increase in the frequency and/or severity of assault behavior within the past year, or no apparent history of past assaultive behavior  
 1 = Possible increase in the frequency and/or severity of assault behavior within the past year  
 2 = Definite escalation in the frequency and/or severity of assault behavior within the past year
- 114. \_\_\_ **R.SARAV3.N7past: SARAv3 Nature of IPV Factor #7: Escalating IPV (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 115. \_\_\_ **R.SARAV3.N7recent: SARAv3 Nature of IPV Factor #7: Escalating IPV (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 116. \_\_\_ **BSAFER3past: B-SAFER #3: Escalation (Past)**  
 0 = No evidence of escalation in violent acts, threats, or thoughts involving intimate partner violence (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of escalation in violent acts, threats, or thoughts involving intimate partner violence (> 4 weeks prior to assessment)  
 2 = Evidence of escalation in violent acts, threats, or thoughts involving intimate partner violence (> 4 weeks prior to assessment)

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- 117. **BSAFER3recent: B-SAFER #3: Escalation (Recent)**  
 0 = No evidence of escalation in violent acts, threats, or thoughts involving intimate partner violence (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of escalation in violent acts, threats, or thoughts involving intimate partner violence (during the 4 weeks prior to assessment)  
 2 = Evidence of escalation in violent acts, threats, or thoughts involving intimate partner violence (during the 4 weeks prior to assessment)
- 118. **R.SARAV2.12: SARAV2 #12: Past sexual assault/sexual jealousy (not including index)**  
 0 = No actual or attempted sexual assault of past or current intimate partner(s), and no history of serious sexual jealousy  
 1 = Attempted to sexually assault past or current intimate partner(s), or has a history of serious sexual jealousy  
 2 = Sexually assaulted past or current intimate partner(s), or at least one past physical assault(s) occurred in the context of serious sexual jealousy
- 119. **SEXASSAULT: Sexual assault attempted or completed \***  
 Index  Historical (i.e., prior to index)  Post Index (i.e., after the index)
- 120. **R.SARAV3.N4past: SARAV3 Nature of IPV Factor #4: Sexual harm (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 121. **R.SARAV3.N4recent: SARAV3 Nature of IPV Factor #4: Sexual harm (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 122. **STALKING: Offender engaged in stalking behavior \***  
 Index  Historical (i.e., prior to index)  Post Index (i.e., after the index)
- 123. **R.SARAV3.N1past: SARAV3 Nature of IPV Factor #1: Intimidation (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 124. **R.SARAV3.N1recent: SARAV3 Nature of IPV Factor #1: Intimidation (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 125. **WEAPONTHREAT: Weapon threat \***  
 Index  Historical (i.e., prior to index)  Post Index (i.e., after the index)
- 126. **WEAPONUSE: Weapon use \***  
 Index  Historical (i.e., prior to index)  Post Index (i.e., after the index)
- 127. **WEAPONTYPE: Type of weapon used**  
 Does not apply  Knife/edged weapon  Gun/firearm  Heavy object; specify \_\_\_\_\_
- 128. **R.SARAV2.13: SARAV2 #13: Past use of weapons and/or credible threats of death (not including index)**  
 0 = No evidence of (a) use or threatened future use of a weapon (firearms, knives, objects used as clubs), or (b) credible threats of serious bodily harm or death in the past  
 1 = Threatened future use of a weapon, or credible threats of serious bodily harm in the past  
 2 = Use of a weapon, or credible threats of death in the past
- 129. **R.SARAV3.N2past: SARAV3 Nature of IPV Factor #2: Threats (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 130. **R.SARAV3.N2recent: SARAV3 Nature of IPV Factor #2: Threats (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment

= SARA V2     
  = B-SAFER  
 = SARA V3     
  = ODARA     
 \* 0 = No  
 \* 1 = Yes

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- 131. \_\_\_ **BSAFER2past: B-SAFER #2: Violent threats or thoughts (Past)**  
 0 = No evidence of violent threats or thoughts involving intimate partner violence (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violent threats or thoughts involving intimate partner violence (> 4 weeks prior to assessment)  
 2 = Evidence of violent threats or thoughts involving intimate partner violence (> 4 weeks prior to assessment)
- 132. \_\_\_ **BSAFER2recent: B-SAFER #2: Violent threats or thoughts (Recent)**  
 0 = No evidence of violent threats or thoughts involving intimate partner violence (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violent threats or thoughts involving intimate partner violence (during the 4 weeks prior to assessment)  
 2 = Evidence of violent threats or thoughts involving intimate partner violence (during the 4 weeks prior to assessment)
- 133. \_\_\_ **R.SARAV2.15: SARAv2 #15: Past violation of "no contact" orders (not including index)**  
 0 = No past violation of "no contact" provisions of civil or criminal court order, or individual never had such an order  
 1 = Past violation(s) of the "no contact" provisions of civil or criminal court order that did not result in arrest  
 2 = Past arrest(s) for violating "no contact" provisions of civil or criminal court order
- 134. \_\_\_ **R.SARAV3.N8past: SARAv3 Nature of IPV Factor #8: IPV-Related Supervision Violations (Past)**  
 0 = No information indicates the factor was present prior to the past year  
 1 = Information indicates the factor was possibly or partially present prior to the past year  
 2 = Information indicates the factor was present prior to the past year
- 135. \_\_\_ **R.SARAV3.N8recent: SARAv3 Nature of IPV Factor #8: IPV-Related Supervision Violations (Recent; may include index)**  
 0 = No information indicates the factor was present during the year prior to the assessment  
 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment  
 2 = Information indicates the factor was present during the year prior to the assessment
- 136. \_\_\_ **BSAFER4past: B-SAFER #4: Violation of court orders (Past)**  
 0 = No evidence of violation of court orders issued in response to or to prevent intimate partner violence (> 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violation of court orders issued in response to or to prevent intimate partner violence (> 4 weeks prior to assessment)  
 2 = Evidence of violation of court orders issued in response to or to prevent intimate partner violence (> 4 weeks prior to assessment)
- 137. \_\_\_ **BSAFER4recent: B-SAFER #4: Violation of court orders (Recent)**  
 0 = No evidence of violation of court orders issued in response to or to prevent intimate partner violence (during the 4 weeks prior to assessment)  
 1 = Possible or partial evidence of violation of court orders issued in response to or to prevent intimate partner violence (during the 4 weeks prior to assessment)  
 2 = Evidence of violation of court orders issued in response to or to prevent intimate partner violence (during the 4 weeks prior to assessment)
- 138. \_\_\_ **PROACTIVEVIO: Evidence of proactive violence (0 = No evidence of proactive violence; 1 = Some evidence of proactive violence; 2 = Clear evidence of proactive violence)**

**NON-INTIMATE PARTNER VIOLENCE**

- 139. \_\_\_ **RODARA2: ODARA #2: Prior nondomestic incident \***
- 140. \_\_\_ **RODARA10: ODARA #10: Violence against others \***
- 141. \_\_\_ **R.SARAV2.1: SARAv2 #1: Past assault of family members (not including index)**  
 0 = No actual, attempted, or threatened assault of family members in the past  
 1 = Threatened assault of family members in the past  
 2 = Actual or attempted assault of family members in the past
- 142. \_\_\_ **R.SARAV2.2: SARAv2 #2: Past assault of strangers or acquaintances (not including index)**  
 0 = No actual, attempted, or threatened assault of strangers or acquaintances in the past  
 1 = Threatened assault of strangers or acquaintances in the past  
 2 = Actual or attempted assault of strangers or acquaintances in the past

= SARA V2  
 = SARA V3  
 = B-SAFER  
 = ODARA  
 \* 0 = No  
 \* 1 = Yes

REPORTNO: \_\_ - \_\_\_\_

- 143. \_\_\_ **BSAFER6past: B-SAFER #6: General criminality (Past)**
  - 0 = No evidence of general criminality (> 4 weeks prior to assessment)
  - 1 = Possible or partial evidence of general criminality (> 4 weeks prior to assessment)
  - 2 = Evidence of general criminality (> 4 weeks prior to assessment)
- 144. \_\_\_ **BSAFER6recent: B-SAFER #6: General criminality (Recent)**
  - 0 = No evidence of general criminality (during the 4 weeks prior to assessment)
  - 1 = Possible or partial evidence of general criminality (during the 4 weeks prior to assessment)
  - 2 = Evidence of general criminality (during the 4 weeks prior to assessment)
- 145. \_\_\_ **R.SARAV3.P5past: SARAv3 Perpetrator Risk Factor #5: General antisocial conduct (Past)**
  - 0 = No information indicates the factor was present prior to the past year
  - 1 = Information indicates the factor was possibly or partially present prior to the past year
  - 2 = Information indicates the factor was present prior to the past year
- 146. \_\_\_ **R.SARAV3.P5recent: SARAv3 Perpetrator Risk Factor #5: General antisocial conduct (Recent)**
  - 0 = No information indicates the factor was present during the year prior to the assessment
  - 1 = Information indicates the factor was possibly or partially present during the year prior to the assessment
  - 2 = Information indicates the factor was present during the year prior to the assessment

= SARA V2  
 = SARA V3

= B-SAFER  
 = ODARA

\* 0 = No  
 \* 1 = Yes

REPORTNO: \_ \_ - \_ \_ \_ \_ \_

## Optimizing Risk Assessment for Domestic Violence (ORADV): Coding Form B: Quantified Criminal History

### I. CRIMINAL HISTORY CHRONOLOGY

*Please use the space provided on the next two pages to complete a chronology of the perpetrator's criminal history. If more space is needed, please use extra sheets. Refer to the manual for an example.*

Offence (e.g., assault, utter threats, etc.)	Date (yyyy/mm/dd)	IPV? (Yes/No)	Counts (on that date)	Source (e.g., CPIC, JOIN, Police Reports)

= SARA V2  
 = SARA V3

= B-SAFER  
 = ODARA

\* 0 = No  
 \* 1 = Yes

REPORTNO: -

Offence (e.g., assault, utter threats, etc.)	Date (yyyy/mm/dd)	IPV? (Yes/No)	Counts (on that date)	Source (e.g., CPIC, JOIN, Police Reports)

 = SARA V2  
 = SARA V3

 = B-SAFER  
 = ODARA

\* 0 = No  
 \* 1 = Yes

REPORTNO: -

Offence (e.g., assault, utter threats, etc.)	Date (yyyy/mm/dd)	IPV? (Yes/No)	Counts (on that date)	Source (e.g., CPIC, JOIN, Police Reports)

 = SARA V2  
 = SARA V3

 = B-SAFER  
 = ODARA

\* 0 = No  
 \* 1 = Yes

REPORTNO: \_ \_ - \_ \_ \_ \_

**II. CORMIER-LANG CRIMINAL HISTORY WORKSHEET**

*Please refer to the manual for instructions and an example prior to completing this worksheet.*

Offence	Pts	Count	
		Non-IPV (or unknown victim)	Known IPV
<b>Non-Violent</b>			
Robbery (bank, store)	7		
Robbery (purse snatching)	3		
Threatening (uttering threats)	2		
Arson and fire setting (church, house, barn)	5		
Arson and fire setting (garbage can), false alarm of fire	1		
Theft over \$5000 (includes car theft and possession of stolen property over)	5		
Mischief to public or private property over \$5000	5		
Break and enter and commit indictable offence (burglary)	2		
Break and enter (incl break & enter with intent to commit an offence)	1		
Theft under \$5000 (includes possession of stolen property under)	1		
Mischief to public or private property under \$5000	1		
Fraud (extortion, embezzlement)	5		
Fraud (forged check, impersonation)	1		
Indecent exposure	2		
Causing a disturbance	1		
Conspiracy	1		
Contributing to juvenile delinquency	1		
Criminal negligence, criminal harassment	1		
Criminal trespass, trespassing at night	1		
Dangerous driving, impaired driving (driving while intoxicated)	1		
Fail to provide the necessities of life	1		
Obstructing a peace officer (including resisting arrest), obstructing justice	1		
Possession of housebreaking tools	1		
Possession/misuse/careless use of/carry prohibited/restricted weapon	1		
Procurer or living on the avails of the prostitution of another person	1		
Trafficking in narcotics	1		
Wearing a disguise with the intent to commit an offence	1		
Child pornography (possession, distribution, or making of)	1		

= SARA V2     
  = B-SAFER     
 \* 0 = No  
 = SARA V3     
  = ODARA     
 \* 1 = Yes

REPORTNO: \_\_\_ - \_\_\_\_

Offence	Pts	Count	
		Non-IPV (or unknown victim)	Known IPV
<b>Violent</b>			
Homicide (murder, manslaughter, criminal negligence causing death)	28		
Attempted murder	7		
Kidnapping, abduction, and forcible confinement	6		
Aggravated assault, choking, administering a noxious substance	6		
Wounding, assault causing bodily harm (CBH) with intent to wound	7		
Assault CBH, criminal negligence CBH, impaired driving CBH	5		
Assault with a weapon	3		
Assault, assaulting a peace officer	2		
Threatening with a weapon, dangerous use of/pointing firearm	3		
Aggravated sexual assault, sexual assault CBH	15		
Sexual assault with weapon	12		
Sexual assault, gross indecency (vaginal, anal or oral penetration; victim forced to fellate)	10		
Sexual assault (attempted rape, indecent assault)	6		
Gross indecency (offender fellates or performs cunnilingus on victim)	6		
Sexual assault (sexual interference, invitation to sexual touching)	2		
Armed robbery (bank, store)	8		
Robbery with violence	5		
Armed robbery (not a bank or store)	4		

= SARA V2  
 = SARA V3

= B-SAFER  
 = ODARA

\* 0 = No  
 \* 1 = Yes

REPORTNO: \_ \_ - \_ \_ \_ \_ \_

**III. VRAG-R CORMIER-LANG CRIMINAL HISTORY SCORES**

1.      **VRAGR5: VRAG-R #5:** Cormier-Lang score for nonviolent convictions and charges prior to index (#)
  - 3 = CL score of 0
  - 1 = CL score of 1 or 2
  - +1 = CL score of 3 up to and including 8
  - +3 = CL score of 9 up to and including 17
  - +5 = CL score of 18+
2.      **VRAGR8: VRAG-R #8:** Cormier-Lang score for violent convictions and charges prior to index (#)
  - 2 = CL score of 0
  - +2 = CL score of 1 up to and including 4
  - +3 = CL score of 5 up to and including 18
  - +4 = CL score of 18+

**VICTIMS AND CONVICTIONS**

3.      **CONVICTS:** Number of convictions (#)
4.      **CONVDATS:** Number of sentencing dates (#)
5.      **IPVOCCURS:** Intimate partner violence occurrences (#)
6.      **IPVCONVICTS:** Intimate partner violence convictions (#)
7.      **IPVCONVDATS:** Intimate partner violence conviction dates (#)
8.      **IPVPARTNERSPRIOR:** How many prior intimate partners did offender assault? (#)
9.      **COLVICTIMSPRIOR:** Prior collateral victims (#) (use "at least" number; specify the collateral victim(s): \_\_\_\_\_)
10.     **NIPVCONVICTS:** Pre-index non-intimate partner violent convictions (#)
11.     **SEXCONVICTS:** Pre-index non-intimate partner sexual convictions (#)
12.     **NIPVVICTIMS:** Pre-index victims of non-intimate partner violence (#; use "at least" number)

= SARA V2     
  = B-SAFER     
 \* 0 = No  
 = SARA V3     
  = ODARA     
 \* 1 = Yes

REPORTNO: \_\_\_ - \_\_\_ - \_\_\_

## Optimizing Risk Assessment for Domestic Violence (ORADV): Coding Form C: Police Risk Assessment

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### I. Police Threat Assessor Risk Ratings

#### SPOUSAL ASSAULT RISK ASSESSMENT – VERSION 2 (SARA-V2)

1.  **PSARAv2.Avail:** Police-scored SARA-V2 available on file? \*
2.  **PSARAv2.1:** Past assault of family members (police scored) \*
3.  **PSARAv2.2:** Past assault of strangers or acquaintances (police scored) \*
4.  **PSARAv2.3:** Past violation of conditional release or community (police scored) \*
5.  **PSARAv2.4:** Recent relationship problems (police scored) \*
6.  **PSARAv2.5:** Recent employment problems (police scored) \*
7.  **PSARAv2.6:** Victim of and/or witness to family violence as a child or adolescent (police scored) \*
8.  **PSARAv2.7:** Recent substance abuse/dependence (police scored) \*
9.  **PSARAv2.8:** Recent suicidal or homicidal ideation/intent (police scored) \*
10.  **PSARAv2.9:** Recent psychotic and/or manic symptoms (police scored) \*
11.  **PSARAv2.10:** Personality disorder with anger, impulsivity, or Behavioral instability (police scored) \*
12.  **PSARAv2.11:** Past physical assault (police scored) \*
13.  **PSARAv2.12:** Past sexual assault/sexual jealousy (police scored) \*
14.  **PSARAv2.13:** Past use of weapons and/or credible threats of death (police scored) \*
15.  **PSARAv2.14:** Recent escalation in frequency or severity of assault (police scored) \*
16.  **PSARAv2.15:** Past violation of “no contact” orders (police scored) \*
17.  **PSARAv2.16:** Extreme minimization or denial of spousal assault history (police scored) \*
18.  **PSARAv2.17:** Attitudes that support or condone spousal assault (police scored) \*
19.  **PSARAv2.18:** Severe and/or sexual assault (police scored) \*
20.  **PSARAv2.19:** Use of weapons and/or credible threats of death (police scored) \*
21.  **PSARAv2.20:** Violation of “no contact” order (police scored) \*

#### SPOUSAL ASSAULT RISK ASSESSMENT – VERSION 3 (SARA-V3)

22.  **PSARAv3.Avail:** Police-scored SARA-V3 available on file? \*
23.  **PSARAv3.N1past:** Intimidation Past (police scored) \*
24.  **PSARAv3.N1recent:** Intimidation Recent (police scored) \*
25.  **PSARAv3.N2past:** Threats Past (police scored) \*
26.  **PSARAv3.N2recent:** Threats Recent (police scored) \*
27.  **PSARAv3.N3past:** Physical Harm Past (police scored) \*
28.  **PSARAv3.N3recent:** Physical Harm Recent (police scored) \*
29.  **PSARAv3.N4past:** Sexual Harm Past (police scored) \*
30.  **PSARAv3.N4recent:** Sexual Harm Recent (police scored) \*
31.  **PSARAv3.N5past:** Severe IPV Past (police scored) \*
32.  **PSARAv3.N5recent:** Severe IPV Recent (police scored) \*
33.  **PSARAv3.N6past:** Chronic IPV Past (police scored) \*
34.  **PSARAv3.N6recent:** Chronic IPV Recent (police scored) \*
35.  **PSARAv3.N7past:** Escalating IPV Past (police scored) \*
36.  **PSARAv3.N7recent:** Escalating IPV Recent (police scored) \*
37.  **PSARAv3.N8past:** IPV-Related Supervision Violations Past (police scored) \*
38.  **PSARAv3.N8recent:** IPV-Related Supervision Violations Recent (police scored) \*
39.  **PSARAv3.P1past:** Intimate Relationships Past (police scored) \*
40.  **PSARAv3.P1recent:** Intimate Relationships Recent (police scored) \*
41.  **PSARAv3.P2past:** Non-intimate Relationships Past (police scored) \*
42.  **PSARAv3.P2recent:** Non-intimate Relationships Recent (police scored) \*
43.  **PSARAv3.P3past:** Employment/Financial Past (police scored) \*
44.  **PSARAv3.P3recent:** Employment/Financial Recent (police scored) \*
45.  **PSARAv3.P4past:** Trauma/Victimization Past (police scored) \*
46.  **PSARAv3.P4recent:** Trauma/Victimization Recent (police scored) \*
47.  **PSARAv3.P5past:** General Antisocial Conduct Past (police scored) \*

= SARA V2  
 = SARA V3  
 = B-SAFER  
 = ODARA  
 \* 0 = No  
 \* 1 = Yes

REPORTNO: \_ \_ - \_ \_ \_ \_

- 48. \_\_ **PSARAv3.P5recent**: General Antisocial Conduct Recent (police scored) \*
- 49. \_\_ **PSARAv3.P6past**: Major Mental Disorder Past (police scored) \*
- 50. \_\_ **PSARAv3.P6recent**: Major Mental Disorder Recent (police scored) \*
- 51. \_\_ **PSARAv3.P7past**: Personality Disorder Past (police scored) \*
- 52. \_\_ **PSARAv3.P7recent**: Personality Disorder Recent (police scored) \*
- 53. \_\_ **PSARAv3.P8past**: Substance Use Past (police scored) \*
- 54. \_\_ **PSARAv3.P8recent**: Substance Use Recent (police scored) \*
- 55. \_\_ **PSARAv3.P9past**: Violent/Suicidal Ideation Past (police scored) \*
- 56. \_\_ **PSARAv3.P9recent**: Violent/Suicidal Ideation Recent (police scored) \*
- 57. \_\_ **PSARAv3.P10past**: Distorted Thinking About IPV Past (police scored) \*
- 58. \_\_ **PSARAv3.P10recent**: Distorted Thinking About IPV Recent (police scored) \*
- 59. \_\_ **PSARAv3.V1past**: Barriers to Security Past (police scored) \*
- 60. \_\_ **PSARAv3.V1recent**: Barriers to Security Recent (police scored) \*
- 61. \_\_ **PSARAv3.V2past**: Barriers to Independence Past (police scored) \*
- 62. \_\_ **PSARAv3.V2recent**: Barriers to Independence Recent (police scored) \*
- 63. \_\_ **PSARAv3.V3past**: Interpersonal Resources Past (police scored) \*
- 64. \_\_ **PSARAv3.V3recent**: Interpersonal Resources Recent (police scored) \*
- 65. \_\_ **PSARAv3.V4past**: Community Resources Past (police scored) \*
- 66. \_\_ **PSARAv3.V4recent**: Community Resources Recent (police scored) \*
- 67. \_\_ **PSARAv3.V5past**: Attitudes or Behaviour Past (police scored) \*
- 68. \_\_ **PSARAv3.V5recent**: Attitudes or Behaviour Recent (police scored) \*
- 69. \_\_ **PSARAv3.V6past**: Mental Health Past (police scored) \*
- 70. \_\_ **PSARAv3.V6recent**: Mental Health Recent (police scored) \*

**ONTARIO DOMESTIC ASSAULT RISK ASSESSMENT (ODARA)**

- 71. \_\_ **TACC.ODARA**: TACC completed?\*
- 72. \_\_ **TACC.ODARA1**:
- 73. \_\_ **TACC.ODARA2**:
- 74. \_\_ **TACC.ODARA3**:
- 75. \_\_ **TACC.ODARA4**:
- 76. \_\_ **TACC.ODARA5**:
- 77. \_\_ **TACC.ODARA6**:
- 78. \_\_ **TACC.ODARA7**:
- 79. \_\_ **TACC.ODARA8**:
- 80. \_\_ **TACC.ODARA9**:
- 81. \_\_ **TACC.ODARA10**:
- 82. \_\_ **TACC.ODARA11**:
- 83. \_\_ **TACC.ODARA12**:
- 84. \_\_ **TACC.ODARA13**:
- 85. \_\_ **TACC.ODARAtotal**:
- 86. \_\_ **TACC.ODARAcat**:
- 87. \_\_ **TACC.ODARAomit**:
- 88. \_\_ **TA.ODARA**: TA completed?\*
- 89. \_\_ **TA.ODARA1**: Prior domestic incident of assault in police or criminal record
- 90. \_\_ **TA.ODARA2**: Prior nondomestic incident \*
- 91. \_\_ **TA.ODARA3**: Prior custodial sentence of 30 days or more \*
- 92. \_\_ **TA.ODARA4**: Failure on prior conditional release \*
- 93. \_\_ **TA.ODARA5**: Threat to harm or kill at the index assault \*
- 94. \_\_ **TA.ODARA6**: Confinement of the partner at the index assault \*
- 95. \_\_ **TA.ODARA7**: Victim concern \*
- 96. \_\_ **TA.ODARA8**: More than one child \*
- 97. \_\_ **TA.ODARA9**: Victim's biological child from a previous partner \*
- 98. \_\_ **TA.ODARA10**: Violence against others \*
- 99. \_\_ **TA.ODARA11**: Substance abuse \*
- 100. \_\_ **TA.ODARA12**: Assault on victim when pregnant \*
- 101. \_\_ **TA.ODARA13**: Barriers to victim support \*
- 102. \_\_ **TA.ODARAtotal**: ODARA Total Score (#)
- 103. \_\_ **TA.ODARAcat**: ODARA Risk Category  
(0 = 0; 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5-6; 6 = 7-13)
- 104. \_\_ **TA.ODARAomit**: Number of ODARA items omitted (#)

**II. Family Violence Investigation Report (FVIR)**

- 105. \_\_ **FVIR.COMPLETED**: FVIR completed on file? \*
- 106. \_\_ **MULTIPLE.FVIRS**: Multiple FVIRs on file? \* (If yes, what was the date of the FVIR used? \_\_\_\_\_ [yyyy/mm/dd])
- 107. \_\_ **FVIR.COMPLETION.DEGREE**: Degree of FVIR completion  
 0 = Weak, only scored  
 1 = Some completion, but scored  
 2 = Almost all completed/described and scored
- 108. \_\_ **FVIR1**: Suspect's criminal violence history \*
- 109. \_\_ **FVIR2**: Suspect's previous domestic violence history \*
- 110. \_\_ **FVIR3**: Complainant's perception of personal safety \*
- 111. \_\_ **FVIR4**: Complainant's perception of future violence \*
- 112. \_\_ **FVIR5**: Suspect's history of drug or alcohol abuse \*
- 113. \_\_ **FVIR6**: Mental illness \*
- 114. \_\_ **FVIR7**: Suicidal ideation \*

.....

<span style="background-color: cyan; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> = SARA V2	<span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> = B-SAFER	* 0 = No
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> = SARA V3	<span style="background-color: pink; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> = ODARA	* 1 = Yes

REPORTNO: \_\_\_ - \_\_\_\_

- 115. \_\_\_ **FVIR8:** Current status of relationship: past, recent or pending separation in the relationship? \*
- 116. \_\_\_ **FVIR9:** Escalation in abuse \*
- 117. \_\_\_ **FVIR10:** Children (< 18yo) exposed \*
- 118. \_\_\_ **FVIR11:** Threats \*
- 119. \_\_\_ **FVIR12:** Access to firearms \*
- 120. \_\_\_ **FVIR13:** Use of firearms and other weapons \*
- 121. \_\_\_ **FVIR14:** Court orders \*
- 122. \_\_\_ **FVIR15:** Employment instability \*
- 123. \_\_\_ **FVIR16:** Forced sex: has the suspect ever forced sex on the complainant? \*
- 124. \_\_\_ **FVIR17:** Infliction of pain or incapacitation / strangling or biting \*
- 125. \_\_\_ **FVIR18:** Stalking \*
- 126. \_\_\_ **FVIR19:** Barriers \*
- 127. \_\_\_ **FVIR20:** Any other relevant information? Victim vulnerabilities? \*

**III. Risk Evaluation**

- 128. \_\_\_ **RiskCategory:** Risk Category Assigned to Perpetrator (1 = Low; 2 = Moderate; 3 = High)
- 129. \_\_\_ **Other.Tool.Complete:** Did the threat assessor fully complete any other tool to assess risk (e.g., HCR-20)? \*  
(specify: \_\_\_\_\_)
- 130. \_\_\_ **RiskInfoOther:** Additional Info Consider? \* (specify: \_\_\_\_\_)
- 131. \_\_\_ **OtherTool:** Which Structured Professional Judgement Tool did the "other" (i.e., previous item) risk factors come from?  
 HCR-20  RSVP  SAM  Other; specify: \_\_\_\_\_

**IV. ITRAC Case Management Suggestions**

**CONTINUITY**

- 132. \_\_\_ **CM.ConEnforce:** Alert other law enforcement (e.g., Special Interest Police (SIP) entry on CPIC; officer safety  
a. bulletin, ViCLAS entry, specific unit in the referring police service, etc.) \*
- 133. \_\_\_ **CM.ConReport:** Disclosure of report to other criminal justice agencies (e.g., probation, Solicitor General, NPB, CSC,  
a. etc.) \*

**CONDITIONS ON PERPETRATOR (restrictions and/or treatment requirements)**

- 134. \_\_\_ **CM.PerpSubs:** Drug/alcohol use (e.g., prohibition, referral for treatment, etc.) \*
- 135. \_\_\_ **CM.PerpCouns:** Anger management and/or domestic violence (e.g., referral for treatment, counselling, etc.) \*
- 136. \_\_\_ **CM.PerpPsych:** Psychiatric and/or forensic mental health (e.g., subject referred for forensic psychiatric evaluation,  
consult with specialized mental health unit(s) within referring police service, etc.) \*
- 137. \_\_\_ **CM.PerpWeap:** Firearms and/or weapons (e.g., a firearms/weapon prohibition requested/maintained, Canadian  
Firearms Program flagged for domestic violence, etc.) \*
- 138. \_\_\_ **CM.PerpResid:** Residency and/or area restriction \*
- 139. \_\_\_ **CM.PerpEmploy:** Conditions related to employment (e.g., must notify if changes, vocational assistance, etc.) \*
- 140. \_\_\_ **CM.PerpRelat:** Conditions related to relationships (e.g., must advise of new intimate partner, etc.) \*
- 141. \_\_\_ **CM.PerpChild:** Conditions related children (e.g., consultation with Alberta Human Services or other organization,  
review of child custody access and agreement, restriction of child visitation until other conditions met, etc.) \*

**VICTIM PROTECTION**

- 142. \_\_\_ **CM.VictProact:** Proactive protective behaviors (e.g., avoid or have no contact with perpetrator, report any  
direct/indirect contact, etc.) \*
- 143. \_\_\_ **CM.VictSafety:** Safety planning with victim (e.g., guidelines, recommendations; regarding child safety, home  
security, workplace security, etc.) \*
- 144. \_\_\_ **CM.VictResource:** Provide resources/referrals (e.g., counselling, programming, community supports) \*

**OTHER**

- 145. \_\_\_ **CM.ManageOther:** Other management suggestions made? \* (specify: \_\_\_\_\_)

Appendix B

Coding Form D: Recidivism

Optimizing Risk Assessment for Domestic Violence (ORADV):  
Coding Form D: Recidivism

I. BASIC INFORMATION [should be same as file coding]

- 1. \_\_\_\_ - \_\_\_\_ REPORTNO: Assessment report number
- 2. \_\_\_\_/\_\_\_\_/\_\_\_\_ INDEXDAT: Index offence date (mm/dd/yyyy)
- 3. \_\_\_\_ - \_\_\_\_ POLICE.OCC: Police occurrence # corresponding to the index offence

FPS:

APS:

II. RECIDIVISM-RELEVANT INFORMATION

Additional details to identify the index offence on JOIN and/or CPIC (e.g., sentencing date, if known; criminal charges, # and description; victim name):

- 4. \_\_\_\_/\_\_\_\_/\_\_\_\_ RECID.DATECODE: Date recidivism was coded (yyyy/mm/dd)
- 5. \_\_\_\_ RECID.CODER: The initials of the coder
- 6. \_\_\_\_ RECID.JOIN: JOIN available\*
- 7. \_\_\_\_/\_\_\_\_/\_\_\_\_ RECID.JOINDATE: Date of JOIN (yyyy/mm/dd)
- 8. \_\_\_\_ RECID.CPIC: CPIC available\*
- 9. \_\_\_\_/\_\_\_\_/\_\_\_\_ RECID.CPICDATE: Date of CPIC (yyyy/mm/dd)
- 10. \_\_\_\_/\_\_\_\_/\_\_\_\_ RECID.RELEASEDATE: Date of offender release, if known (yyyy/mm/dd)
- 11. \_\_\_\_ RELEASE.ESTIMATE: Is the release date an estimate (i.e., not directly from the ORCA; estimated from index sentence)?
- 12. \_\_\_\_/\_\_\_\_/\_\_\_\_ RECID.ADJUDICDATE: Date offender was charged or adjudicated, if known (yyyy/mm/dd)

III. RECIDIVISM [FOLLOW-UP] DATA ON OFFENDER

- 13. \_\_\_\_ RECID.ANY: Any new charges? (excluding supervision/technical violations)\*

- Recidivism data will be extracted in three steps to ensure we have, at minimum, dichotomous recidivism (present/absent) for violence and IPV and latency of offending.
  - Step 1: List all post-assessment **violent** occurrences, starting with the earliest (i.e., first 3 columns of the following table), using CPIC and/or JOIN documents.
  - Step 2: Indicate the specific date of the post-assessment violent reoffence(s) and identify whether the reoffence was IPV, using police occurrences identified in Step 1.
  - Step 3: Determine the earliest recidivistic event for violence and for IPV offences. Then recidivism will be fully completed [dichotomous recidivism for violence and IPV, latency for violence and IPV, severity]. With this information, it is possible to also calculate frequency and severity of all recidivism.

Step 1			Step 2		
	Date of charge/sentence (yyyy/mm/dd)	Criminal offence (CC # and name)	Occurrence file # (police)	Offence date (start date) (yyyy/mm/dd)	IPV? (victim is past or current IP)
Ex.	2016/06/29	271 - Sexual Assault	16-1234567	2016/03/13	Yes
1					
2					

\*0 = No; 1 = Yes / Code " ." if unknown or not applicable

\*\*Occurrence File No. is a police file # that appears on JOIN (e.g., #95-46329, #11-132863)

REPORTNO: \_ \_ \_ \_ \_

Step 1			Step 2		
	Date of charge/sentence (yyyy/mm/dd)	Criminal offence (CC # and name)	Occurrence file # (police)	Offence date (start date) (yyyy/mm/dd)	IPV? (victim is past or current IP)
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

**Step 3 (to be later completed by RA)**

- In the table above, mark off which recidivistic event was the 1<sup>st</sup> violent event and which was the 1<sup>st</sup> IPV event

14. \_\_\_ **RECID.VIOL:** Any new violent offence charges?\*

15. \_\_\_/\_\_\_/\_\_\_ **RECID.ANYVDATE:** Date of next violent offence (yyyy/mm/dd)

16. \_\_\_ **RECID.IPV:** Any new intimate partner violent (IPV) offence charges?\*

17. \_\_\_/\_\_\_/\_\_\_ **RECID.ANYIPVDATE:** Date of next IPV offence (yyyy/mm/dd)

18. \_\_\_ Cormier-Lang score for most serious post-assessment violent charge. Specify CC \_\_\_ \_\_\_

19. \_\_\_ Cormier-Lang score for most serious post-assessment IPV violent charge. Specify CC \_\_\_ \_\_\_

\*0 = No; 1 = Yes / Code "\*" if unknown or not applicable

\*\*Occurrence File No. is a police file # that appears on JOIN (e.g., #95-46329, #11-132863)

## Appendix C

### Ontario Domestic Assault Risk Assessment (Hilton et al., 2004)

#### Item scores:

**0** = *No/Absent*

**1** = *Yes/Present*

1. Prior domestic incident
2. Prior non-domestic incident
3. Prior custodial sentence of 30 days or more
4. Failure on prior conditional release
5. Threat to harm or kill at the index assault
6. Confinement of the victim at the index assault
7. Victim concern about future assaults
8. More than one child altogether
9. Victim's biological child from a previous partner
10. Prior violent incident against a non-domestic victim
11. Two or more indicators of substance abuse
12. Assault on the index victim when she was pregnant
13. Barriers to victim support

### Appendix D

#### Spousal Assault Risk Assessment guide (Kropp et al., 1994, 1995, 1999, 2008)

##### Item scores:

**0 = No/Absent**

**1 = Possibly or Partially Present**

**2 = Yes/Present**

Subscale	Item
Criminal History	1. Past assault of family members
	2. Past assault of strangers or acquaintances
	3. Past violation of conditional release or community supervision
Psychosocial Adjustment	4. Recent relationship problems
	5. Recent employment problems
	6. Victim of and/or witness to family violence as a child or adolescent
	7. Recent substance abuse/dependence
	8. Recent suicidal or homicidal ideation/intent
	9. Recent psychotic and/or manic symptoms
	10. Personality disorder with anger, impulsivity, or behavioral instability
Spousal Assault History	11. Past physical assault
	12. Past sexual assault/sexual jealousy
	13. Past use of weapons and/or credible threats of death
	14. Recent escalation in frequency or severity of assault
	15. Past violation of “no contact” orders
	16. Extreme minimization or denial of spousal assault history
	17. Attitudes that support or condone spousal assault
Current/Most Recent Offence	18. Severe and/or sexual assault

19. Use of weapons and/or credible threats of death

20. Violation of “no contact” order

**Appendix E**

**Brief Spousal Assault for the Evaluation of Risk (Kropp et al., 2005, 2010)**

**Item scores:**

**0 = *No/Absent***

**1 = *Possibly or Partially Present***

**2 = *Yes/Present***

Subscale	Item
Perpetrator Risk Factors: Intimate Partner Violence	1. Violent acts
	2. Violent threats or thoughts
	3. Escalation
	4. Violation of court orders
	5. Violent attitudes
Perpetrator Risk Factors: Psychosocial Adjustment	6. General criminality
	7. Intimate relationship problems
	8. Employment problems
	9. Substance use problems
	10. Mental health problems
Victim Vulnerability Factors	11. Inconsistent attitudes or behaviour
	12. Extreme fear of perpetrator
	13. Inadequate support or resources
	14. Unsafe living situation
	15. Health problems

**Appendix F**

**Rotated Factor Loadings and Standardized Rotated Loadings for the 9-Factor Model of All Items Included in the Exploratory Factor Analysis**

Ontario Domestic Assault Risk Assessment	Rotated Factor Loading (Standardized Rotated Factor Loading)								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
10. Prior domestic incident	.22 (1.18)	<b>.31</b> (1.54)	<b>.30</b> (1.92)	.15 (0.77)	-.07 (-0.67)	<b>.51</b> (2.58)	-.01 (-0.16)	-.004 (-0.04)	.06 (0.50)
11. Prior non-domestic incident	<b>.70</b> ( <b>9.68</b> )	-.03 (-0.35)	-.01 (-0.15)	.04 (0.45)	-.02 (-0.27)	.02 (0.21)	-.16 (-1.47)	-.05 (-0.60)	.001 (0.02)
12. Prior custodial sentence of 30 days or more	<b>.80</b> ( <b>11.10</b> )	.10 (0.73)	.29 (2.96)	-.03 (-0.60)	.03 (0.48)	.02 (0.30)	-.11 (-1.28)	.02 (-0.26)	.11 (-1.04)
13. Failure on prior conditional release	<b>.60</b> ( <b>5.82</b> )	-.21 (-0.96)	<b>.79</b> ( <b>8.01</b> )	.05 (0.82)	.01 (0.28)	-.04 (-0.79)	.06 (0.72)	0.02 (0.37)	.05 (0.65)
14. Threat to harm or kill at the index assault	.02 (0.45)	-.08 (-0.72)	-.10 (-1.06)	<b>.85</b> ( <b>9.12</b> )	.09 (0.98)	.003 (0.06)	.22 (2.16)	-.02 (-0.38)	-.03 (-0.64)
15. Confinement of the victim at the index assault	-.003 (-0.05)	<b>-.33</b> (-2.28)	-.11 (-1.00)	.003 (0.05)	.09 (0.76)	<b>.40</b> (3.39)	-.17 (-1.28)	.06 (0.54)	.004 (0.05)
16. Victim concern about future assaults	-.03 (-0.60)	<b>-.33</b> (-2.03)	.01 (0.22)	.21 (1.41)	<b>.86</b> ( <b>8.86</b> )	.001 (0.03)	.05 (-0.82)	.02 (0.33)	.16 (1.14)
17. More than one child	-.02 (-0.19)	<b>.72</b> ( <b>9.55</b> )	-.10 (-0.98)	.01 (0.18)	.08 (0.69)	.01 (0.06)	.05 (0.53)	-.04 (-0.34)	.05 (0.42)

18. Victim's biological child from a previous partner	.09 (0.84)	<b>.53</b> ( <b>6.04</b> )	-.01 (-0.14)	-.03 (-0.48)	.21 (1.70)	.04 (0.38)	-.16 (-1.42)	-.02 (-0.22)	-.02 (-0.21)
14. Two or more indicators of substance abuse	<b>.57</b> ( <b>6.52</b> )	.04 (0.40)	.03 (0.28)	-.07 (-0.66)	-.02 (-0.21)	.06 (-0.55)	.06 (0.49)	-.09 (-0.80)	.07 (0.50)
15. Assault on the index victim when she was pregnant	-.002 (-0.02)	<b>.32</b> (2.05)	.10 (0.94)	-.02 (-0.20)	-.19 (-1.45)	.04 (0.45)	<b>.38</b> (3.64)	.21 (1.73)	.07 (0.61)
16. Barriers to victim support	-.10 (-0.78)	<b>.77</b> ( <b>8.47</b> )	-.02 (-0.21)	-.07 (-0.70)	.06 (0.55)	-.09 (-0.59)	-.03 (-0.37)	.03 (0.26)	.04 (0.35)
<hr/> Spousal Assault Risk Assessment <hr/>									
2. Past assault of family members	<b>.47</b> ( <b>5.11</b> )	.23 (0.94)	-.20 (-1.74)	.12 (1.25)	-.11 (-1.08)	.06 (0.66)	-.01 (-0.19)	.21 (1.53)	.20 (1.70)
5. Recent relationship problems	-.03 (-0.42)	.27 (1.01)	-.01 (-0.09)	.04 (0.60)	<b>.42</b> (3.15)	.01 (0.15)	.29 (2.00)	-.03 (-0.35)	<b>-.44</b> ( <b>-3.91</b> )
7. Victim of and/or witness to family violence as a child or adolescent	.21 (2.17)	.13 (0.81)	-.07 (-0.68)	.00 (-0.003)	.04 (0.44)	-.10 (-0.97)	.13 (1.34)	<b>.34</b> (3.47)	-.05 (-0.43)
11. Recent suicidal or homicidal ideation/intent	-.04 (-0.44)	.13 (1.09)	.002 (0.03)	.25 (2.98)	.19 (1.91)	-.06 (-0.56)	.02 (0.23)	.09 (0.91)	-.01 (-1.31)
12. Recent psychotic and/or manic symptoms	-.19 (-1.46)	-.02 (-0.20)	.02 (0.24)	.16 (1.11)	.03 (0.28)	.06 (0.54)	-.10 (-0.70)	<b>.57</b> ( <b>4.18</b> )	-.21 (-0.70)
13. Personality disorder with anger, impulsivity, or behavioral instability	<b>.31</b> (3.35)	-.06 (-0.47)	-.08 (-0.92)	-.05 (-0.69)	.15 (1.72)	.12 (1.00)	.04 (0.41)	<b>.32</b> (3.71)	.10 (-0.66)
14. Past sexual assault/sexual jealousy	-.09 (-0.98)	.04 (0.46)	-.04 (-0.59)	.17 (-1.47)	.05 (0.65)	<b>.71</b> ( <b>8.12</b> )	.03 (0.36)	-.18 (-1.67)	.05 (0.61)
15. Past use of weapons and/or credible threats of death	.05 (0.57)	.14 (1.36)	.11 (1.13)	.10 (1.01)	.03 (0.39)	<b>.40</b> ( <b>4.00</b> )	.08 (0.67)	.14 (1.19)	-.24 (-2.01)

21. Past violation of “no contact” orders	-.02 (-0.43)	-.02 (-0.34)	<b>.87</b> <b>(8.76)</b>	-.09 (-0.86)	-.03 (-0.44)	<b>.34</b> <b>(2.06)</b>	-.001 (-0.01)	-.02 (-0.36)	-.03 (-0.45)
22. Extreme minimization or denial of spousal assault history	-.16 (-1.96)	.03 (0.39)	.03 (0.38)	-.001 (-0.02)	-.02 (-0.30)	<b>.41</b> <b>(3.17)</b>	<b>.42</b> <b>(4.48)</b>	.003 (0.04)	-.02 (-0.24)
23. Attitudes that support or condone spousal assault	-.03 (-0.71)	-.01 (-0.12)	-.07 (-1.17)	.01 (0.14)	.20 (-1.89)	<b>.38</b> <b>(1.90)</b>	<b>.76</b> <b>(8.13)</b>	.02 (0.53)	.03 (0.46)
24. Severe and/or sexual assault	.10 (1.07)	-.05 (-0.45)	.02 (0.21)	.08 (0.83)	-.07 (-0.68)	<b>.40</b> <b>(3.56)</b>	-.29 (-2.58)	-.04 (-0.40)	-.06 (-0.62)
25. Use of weapons and/or credible threats of death	-.02 (-0.45)	.04 (0.73)	.06 (0.69)	<b>.94</b> <b>(11.77)</b>	-.04 (-0.70)	.02 (0.24)	-.02 (-0.46)	-.03 (-0.42)	.04 (0.66)
26. Violation of “no contact” order	-.02 (-0.31)	.04 (0.42)	<b>.47</b> <b>(4.40)</b>	.04 (0.48)	.26 (2.30)	.14 (0.95)	-.05 (-0.57)	.03 (0.32)	-.07 (-0.65)
<hr/> Brief Spousal Assault Form for the Evaluation of Risk <hr/>									
4. Violent threats or thoughts	.07 (0.65)	-.06 (-0.59)	.04 (0.42)	.23 (2.28)	.10 (0.91)	<b>.44</b> <b>(3.13)</b>	.29 (2.12)	.05 (0.52)	.001 (0.05)
5. Escalation	.14 (-1.45)	.08 (0.70)	-.05 (-0.55)	.15 (1.55)	.15 (1.56)	<b>.32</b> <b>(2.95)</b>	-.02 (-0.24)	.10 (0.97)	.04 (0.44)
7. Violent attitudes	.07 (1.18)	-.03 (-0.58)	.01 (0.29)	-.04 (-0.77)	.04 (0.73)	<b>.62</b> <b>(3.14)</b>	<b>.64</b> <b>(5.37)</b>	-.03 (-0.48)	-.12 (-1.36)
8. General criminality	<b>.78</b> <b>(11.23)</b>	-.09 (-0.72)	.002 (0.03)	-.15 (-1.80)	.07 (0.82)	.04 (0.48)	-.004 (-0.06)	.03 (0.44)	.02 (-0.25)
9. Employment problems	.28 (2.90)	.20 (0.90)	.16 (1.69)	.02 (0.35)	-.04 (-0.52)	-.04 (-0.41)	.02 (0.22)	<b>.42</b> <b>(4.09)</b>	-.003 (-0.03)
16. Mental health problems	-.02 (-0.49)	-.22 (-0.59)	-.001 (-0.01)	-.06 (-0.82)	.003 (0.06)	-.03 (-0.57)	.03 (0.58)	<b>.88</b> <b>(7.48)</b>	.25 (0.76)

17. Inconsistent attitudes or behaviour	.01 (0.16)	.19 (0.82)	.25 (2.55)	-.06 (-0.73)	.10 (1.00)	.22 (1.51)	-.04 (-0.52)	.18 (1.30)	<b>.36</b> (3.15)
18. Extreme fear of perpetrator	.06 (0.72)	.03 (0.25)	.02 (0.29)	-.06 (-0.63)	<b>.87</b> <b>(10.35)</b>	.08 (0.78)	.09 (0.95)	.01 (0.08)	-.002 (-0.02)
19. Inadequate support or resources	.02 (0.30)	.02 (0.22)	.03 (0.44)	.07 (0.78)	.28 (2.09)	-.06 (-0.67)	<b>.37</b> (3.38)	-.03 (-0.34)	<b>.61</b> <b>(4.92)</b>
20. Unsafe living situation	.03 (0.32)	.01 (0.06)	-.09 (-0.96)	-0.10 (-1.06)	<b>.36</b> (3.69)	.05 (0.51)	.07 (0.76)	.06 (0.66)	.27 (2.61)
21. Health problems	-.02 (-0.31)	.10 (0.44)	.01 (0.08)	.05 (0.68)	.02 (0.23)	.13 (0.84)	.03 (0.39)	-.08 (-0.49)	<b>.68</b> <b>(5.00)</b>

*Note.* Factor loadings greater than .30 are bolded, along with significant standardized factor loadings. For the standardized score, the critical z-score was 3.74,  $\alpha = .00009$ . Bolded values indicate significant loading on the factor.