Creating a typology of intimate partner violence (IPV) perpetrators: Using the SARA:SV

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ABSTRACT

Introduction. Perpetrators of intimate partner violence (IPV) are considered a heterogeneous group of men. This has resulted in several attempts to classify IPV perpetrators into subtypes. Although a well-explored topic, the existing IPV typologies are not suitable for the police due to its reliance on clinical information. The present study aimed at constructing a typology of IPV perpetrators, based on information available to the police. **Method**. Data from 235 risk assessments conducted by police officers in Sweden, using the Spousal Assault Risk Assessment guide: Short Version (SARA:SV), was analyzed through Exploratory Factor Analysis (EFA). **Results.** Three subtypes of IPV perpetrators were identified: the generally violent/antisocial (GV/A) perpetrator, the family only (FO) perpetrator, and the high risk (HR) perpetrator. Also, a fourth subtype emerged reflecting a victim profile, labeled the rational victim (RV). **Discussion.** Besides validating previously found IPV subtypes, we also identified two subtypes not previously described in the literature. Furthermore, the results demonstrated that clinical information concerning the perpetrator's mental health was not decisive in identifying the perpetrators constituting the highest risk for IPV. Noteworthy, the importance of considering victim vulnerability factors in an IPV risk assessment context was supported by the identification of the RV. However, the proposed typology needs to be validated in subsequent research.

Keywords: intimate partner violence, perpetrator typologies, SARA:SV, risk assessment

INTRODUCTION

Intimate partner violence (IPV) is a global issue posing serious threats to women's health (Belfrage & Rying, 2004; Campbell, Glass, Sharps, Laughon & Bloom, 2007; Clark & DuMont, 2003; Garcia-Moreno, Jansen, Ellsberg & Watts, 2006; Krug et al., 2002; Tjaden & Thoennes, 2000). These threats mainly consist of physical and psychological abuse, causing for example serious bodily injuries (see e.g., Tjaden & Thoennes, 2000) and depression (see e.g., Krug et al., 2002). The global prevalence of IPV has been estimated to range between approximately 10 (The Philippines) and 70% (Ethiopia) (Garcia-Moreno et al., 2006; Krug, 2002). In Sweden, the prevalence of IPV has been reported to 28% (Lundgren, Heimer, Westerstrand & Kalliokoski, 2001). Furthermore, the recidivism rates of IPV have been estimated to approximately 40% (Belfrage & Strand, 2012; McFarlane et al., 2004; Sheperd, 1992; Strand, 2012).

The high rates of recidivism in IPV illuminate the importance of identifying perpetrators at risk of reoffending. Problematically, IPV perpetrators are considered a heterogeneous group of men (Dixon & Browne, 2003; Huss & Langhinrichsen-Rohling, 2000; Thijssen & de Ruiter, 2011). Hence, several efforts have been made in order to identify typologies of IPV perpetrators. Initially, Holtzworth-Munroe & Stuart (1994) identified three subtypes of perpetrators, based on the severity and frequency of IPV, the generality of violence (extrafamilial or intrafamilial) and the perpetrator's psychopathology or personality disorder. These three dimensions resulted from a review of 15 male

IPV perpetrator typology studies. The subtypes were identified as the family only (FO) perpetrator, the dysphoric/borderline (DB) perpetrator and the generally violent/antisocial (GV/A) perpetrator. These subtypes have been validated in subsequent studies, using both community (Holtzworth-Munroe, Meehan, Herron, Rehman & Stuart, 2000; Waltz, Babcock, Jacobson & Gottman, 2000) and clinical samples (Huss & Langhinrichsen-Rohling, 2006; Huss & Ralston, 2008; Johnson et al., 2006; Langhinrichsen-Rohling, Huss & Ramsay, 2000; Thijssen & de Ruiter, 2011).

The FO perpetrator was characterized as being violent only towards other family members, thus exerting intrafamilial violence (Holtzworth-Munroe & Stuart, 1994). Perpetrators in this subtype were the least likely to: exert severe IPV, engage in criminal behavior, use violence outside the home and display traits of psychopathology or personality disorder. Also, the FO perpetrator infrequently engaged in IPV consisting of psychological and sexual abuse as well as demonstrated low to moderate substance abuse and depression. Holtzworth-Munroe and Stuart (1994) estimated the prevalence of this subtype to 50% in populations of IPV perpetrators. In a review of nine IPV typology studies Dixon and Browne (2003) reported similar prevalence rates for this subtype. Furthermore, Thijssen and de Ruiter (2011) concluded that the IPV recidivism rate for this subtype was 7%.

The DB perpetrator was characterized as exerting both intrafamilial and extrafamilial violence (Holtzworth-Munroe & Stuart, 1994). Their IPV were considered as more severe compared to the FO perpetrator, involving both psychological and sexual abuse. In terms of psychopathology, the DB perpetrators displayed traits of dysphoria or traits of borderline personality disorder. Consequently, this subtype was, to a higher extent, depressed and demonstrated a moderate degree of substance abuse. Also, these perpetrators were the most psychologically distressed and emotionally volatile of the three subtypes. Holtzworth-Munroe and Stuart (1994) estimated the prevalence of this subtype to 25% in populations of IPV perpetrators. However, Dixon and Browne (2003) reported a prevalence rate of 20% for this subtype. Concerning recidivism, Thijssen and de Ruiter (2011) stated that 16% of the DB perpetrators recidivated in IPV.

The GV/A perpetrator was described as being the most violent subtype exerting frequent, as well as severe, intrafamilial violence, including psychological and sexual abuse (Holtzworth-Munroe & Stuart, 1994). Moreover, these perpetrators engaged repeatedly in severe extrafamilial violence as well as criminal behavior. The GV/A perpetrator was most likely to be diagnosed with either antisocial personality disorder or psychopathy. Thus, these men displayed low degrees of depression and a high degree of substance abuse. Holtzworth-Munroe and Stuart (1994) estimated the prevalence of this subtype to 25% in populations of IPV perpetrators, whereas Dixon and Browne (2003) reported a prevalence rate of 30% for this subtype. Thijssen and de Ruiter (2011) concluded that the recidivism rate in IPV among the GV/A perpetrators was 19%.

In attempting to validate the three subtypes, several studies have found an additional fourth subtype, labeled the low-level antisocial (LLA) perpetrator (Holtzworth-Stuart et al., 2000; Huss & Langhinrichsen-Rohling, 2006; Thijssen & de Ruiter, 2011). This fourth subtype was described as falling between the FO and the GV/A perpetrator, thus exhibiting moderate extrafamilial as well as intrafamilial violence. The LLA perpetrator also demonstrated previous registered criminality, although to a lesser extent compared to the GV/A perpetrator. Furthermore, the LLA perpetrator was not displaying psychopathological traits or traits of personality disorder to the same degree as the DB and the GV/A perpetrators (Holtzworth-Munroe et al., 2000). Thijssen and de Ruiter (2011) reported a prevalence rate of 24% for the LLA perpetrator in their sample and a recidivism rate of 14% in IPV for this subtype.

The aforementioned four subtypes of IPV perpetrators could be of practical importance in preventing IPV. This is due to the fact that these subtypes differ in their frequency as well as severity of violence (Holtzworth-Munroe et al., 2000). Identifying a perpetrator as belonging to a specific subtype could increase the probability of distributing adequate protective measures, thereby preventing IPV. For example, the FO perpetrator was considered as posing a less serious threat to exerting severe violence compared to the GV/A perpetrator (Holtzworth-Munroe & Stuart, 1994), thus requiring a less pervasive intervention compared to a more violent subtype. To differentiate between the subtypes, clinically detailed information concerning the perpetrator is required (see e.g., Holtzworth-Munroe et al., 2000). This information concerns traits of psychopathology and traits of personality disorder. For example, to correctly classify a perpetrator as belonging to one of the four subtypes, knowledge of a perpetrator's mental health is a necessity. Without this information, accurately subtyping a perpetrator is problematic.

However, this type of information is rarely available to the police, who are considered the primary responding actor to IPV (Belfrage et al., 2012; Strand, 2012). For example, the police usually lack details about the mental health of the perpetrator, which eliminates the possibility of determining whether the perpetrator suffers from a personality disorder, and more specifically, which personality disorder. Furthermore, police officers are rarely clinically trained, in terms of identifying specific traits of psychopathology or specific personality disorders (Storey, Gibas, Reeves & Hart, 2011). Therefore, the usefulness of the perpetrator typologies of IPV suggested in previous research is limited for the police. This since the information needed to classify perpetrators as belonging to a specific subtype is not available. However, a typology based solely on information available to the police could be of practical utility in terms of a guidance when distributing protective measures.

Aim
The present study aimed at creating a typology of intimate partner violence perpetrators, based on information available to the police. This information usually comprises of a police report and information derived from a risk assessment of IPV.

METHOD

Study population
The data were collected from three different locations in Sweden: Södertörn (population about 270.000), Jämtland (population about 126.000) and Västernorrland (population about 242.000). Södertörn is a police district in the largest police county in Sweden, Stockholm. Jämtland and Västernorrland are medium-sized police counties situated in the mid part of Sweden. Police officers in Södertörn, Jämtland and Västernorrland were obliged to administer a SARA:SV risk assessment in cases of reported IPV. The risk assessments from Södertörn ($n = 716$) were administered between 10th of August 2008 and 28th of December 2010, whereas the risk assessments from Jämtland ($n = 141$) and Västernorrland ($n = 343$) were performed between 1st of January 2010 and 18th of January 2013. In sum, the study was originally based on 1200 risk assessments made by police officers using the SARA:SV. Of these, 71 cases (6%) were excluded since they involved female perpetrators, resulting in an overall sample of 1129 cases of male-to-female IPV.

However, the number of missing values in the material was extremely high. Only 6.5% (n = 73) of the 1129 SARA:SV assessments were completely coded by the police officers, thus including information concerning both the past and the present situation. The overwhelming majority of the missing values concerned the past situation, where 92.6% of the cases were incompletely coded, resulting in the

exclusion of this information. Therefore, only cases with complete information concerning the present situation were selected, resulting in a sample of at most 235 cases. Due to different combinations of risk and victim vulnerability factors in the analyses, the number of cases varied in each of these analyses. In sum, three subsamples were utilized in the results consisting of 179, 235 respectively 201 cases of partner violence. The descriptive information was based on the largest subsample (i.e., n = 235). The mean age for the perpetrators was 42.1 years (*SD = 11.4*) with a range of 18 – 75 years, respectively 36.6 years (*SD = 13.1*) for the victims, with a range of 16 – 76 years. Assault was the most common index crime (42.2%, n = 102), followed by severe violation of a woman's integrity (21.1%, n = 50) and illegal threats (14.0%, n = 33). Other crimes (18.9%, n = 41) were: attempted manslaughter/murder, sexually related crimes, molestation, breach of domiciliary peace, violation of restraining order and interference in a judicial matter. Nine cases (3.8%) were missing information concerning index crime.

The SARA:SV

The Spousal Assault Risk Assessment guide: Short Version (SARA:SV) (Kropp, Hart & Belfrage, 2008) is a risk assessment instrument for IPV[1], developed in line with the structured professional approach (SPJ) to risk assessment. This approach requires a consideration of present risk factors as well as their combined importance for violence. The SARA:SV constitutes of five risk factors concerning the perpetrator's history of IPV, five risk factors concerning the perpetrator's psychosocial adjustment and five victim vulnerability factors (see Table 1). Additionally, the risk assessor has the possibility to document other considerations that may be of relevance to the specific case. Moreover, the SARA:SV has been developed on the basis of a systematic review of published research regarding IPV and consists of risk factors which have a well-known relationship with this type of violence (Kropp et al., 2008). Furthermore, the SARA:SV has shown high validity and is designed according to existing practical, ethical and legal guidelines (Belfrage & Strand, 2008). The SARA:SV is a revised version of the original Spousal Assault Risk Assessment Guide ([SARA], Kropp, Hart, Webster & Eaves, 1994) which has demonstrated high validity and reliability (see e.g., Kropp & Hart, 2000).

Table 1. The SARA:SV risk and victim vulnerability factors.

Perpetrator risk factors	Psychosocial adjustment	Victim vulnerability factors
1. Violent acts	6. General criminality	11. Inconsistent behavior/attitude
2. Violent threats or thoughts	7. Intimate relationship problems	12. Extreme fear
3. Escalation	8. Employment problems	13. Inadequate access to resources
4. Violation of court orders	9. Substance use problems	14. Unsafe living situation
5. Violent attitudes	10. Mental health problems	15. Personal problems

The risk factors in the SARA:SV (Kropp et al., 2008) are coded on a 3 point-scale as either *Yes/Present, Possibly/Partially present* or *No/Absent.* Lack of information concerning a specific risk factor may result in the assessor excluding the risk factor from further consideration. When assessing the presence of the perpetrator risk factors, the assessor should consider both the present situation (i.e., approximately the past 4 weeks) and historically. However, the victim vulnerability factors should only be considered in the present situation. Ultimately, a summary risk rating for acute as well as severe or deadly IPV is estimated as low risk, moderate risk or high risk based on the presence and relevance of risk and victim vulnerability factors. Drawing on the estimated risk, the assessor proposes

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[1] Defined as "any actual, attempted, or threatened physical harm perpetrated by a man or a woman against someone with whom he or she has, or has had, an intimate, sexual relationship" (Kropp et al., 2008, p.2).

adequate protective measures. According to the guidelines regulating the Swedish Police in risk assessments for violence, a risk assessment utilizing the SARA:SV should be administered in cases where there is reason to suspect that a victim will be exposed to IPV (The National Police Board, 2010).

Statistical analyses

Odds ratios (OR) were calculated for the SARA:SV risk and victim vulnerability factors and summary risk ratings for acute and severe or deadly IPV.

Exploratory factor analyses (EFA) were administered in order to identify a typology of partner violence. Principal Components Analysis (PCA) was used as the extraction method. Prior to the analysis, the factorability of the data was tested. Furthermore, three decision rules governed the extraction process in deciding the number of factors to retain (Pallant, 2010). These were Kaiser's criterion (using eigenvalues above 1) (Kaiser, 1974), inspection of the screeplot (Catell, 1966) and Horn's Parallel Analysis (Horn, 1965). Moreover, the Horn's Parallel Analysis was performed using the Monte Carlo Parallel Analysis software developed by Watkins (2000).

Furthermore, Kruskal-Wallis tests were administered in order to investigate differences between the subtypes concerning degree of risk for acute as well as for severe or deadly IPV. Post-hoc tests were performed, using Mann-Whitney U tests with a Bonferroni adjusted alpha value.

All statistical analyses, except for the Horn's Parallel Analysis, were performed using IBM SPSS, version 20. This study has received ethical approval from the Swedish National Police and from the Ethical Review Board in Umeå, Sweden.

RESULTS

Validity of the risk and victim vulnerability factors in the SARA:SV

In order to enable OR calculations, the summary risk ratings for acute and severe or deadly IPV as well as the risk and victim vulnerability factors were dichotomized. The risk and victim vulnerability factors in the SARA:SV were coded as absent (i.e., when coded as *No*) or present (i.e., when coded as *Possible* and *Yes*). The risk summary ratings were coded as low risk and elevated risk (i.e., moderate and high risk). OR: s indicated that all risk and victim vulnerability factors significantly increased the risk for acute as well as for severe or deadly IPV. Concerning the risk for acute IPV, the three risk factors with the highest OR were: 'violation of court orders' (5.88, 95% CI: 2.87-12.04), 'violent attitudes' (5.39, 95% CI: 3.81-7.63) and 'escalation' (5.35, 95% CI: 3.98-7.20). Concerning the risk for severe or deadly IPV the three risk factors with the highest OR were: 'escalation' (8.12, 95% CI: 5.64-11.68), 'violent threats or thoughts' (6.53, 95% CI: 4.46-9.58) and 'violent attitudes' (6.31, 95% CI: 4.00-9.96). The OR: s for the risk and victim vulnerability factors are presented in Table 2.

Table 2. Odds ratios for the SARA:SV risk and victim vulnerability factors, and risk for IPV (N = 1129).

The SARA:SV	Acute IPV (95% CI)	% (n)[a]	Severe/deadly IPV (95% CI)	% (n)[a]
Perpetrator risk factors				
1. Violent acts	2.32 (1.66-3.23)	94.3 (1065)	1.80 (1.24-2.62)	94.0 (1061)
2. Violent threats or thoughts	4.87 (3.65-6.50)	89.2 (1007)	6.53 (4.46-9.58)	88.8 (1003)
3. Escalation	5.35 (3.98-7.20)	75.8 (856)	8.12 (5.64-11.68)	75.6 (854)
4. Violation of court orders	5.88 (2.87-12.04)	73.9 (834)	5.11 (3.00-8.72)	73.5 (830)
5. Violent attitudes	5.39 (3.81-7.63)	70.3 (794)	6.31 (4.00-9.96)	70.1 (791)
Psychosocial adjustment				
6. General criminality	2.23 (1.70-2.93)	88.3 (997)	2.84 (2.17-3.73)	88.1 (995)
7. Intimate relationship problems	2.92 (2.50-4.16)	57.9 (654)	3.99 (2.58-6.17)	57.7 (651)
8. Employment problems	1.78 (1.26-2.50)	50.3 (568)	1.90 (1.32-2.73)	49.8 (562)
9. Substance use problems	2.67 (1.91-3.73)	63.4 (716)	2.51 (1.73-3.66)	63.1 (712)
10. Mental health problems	3.40 (2.33-4.98)	44.6 (504)	5.64 (3.61-8.80)	44.5 (502)
Victim vulnerability factors				
11. Inconsistent behavior/attitude	2.48 (1.89-3.26)	82.0 (926)	1.72 (1.29-2.27)	81.6 (921)
12. Extreme fear	4.96 (3.72-6.59)	82.3 (929)	5.16 (3.83-6.96)	82.0 (926)
13. Inadequate access to resources	3.19 (2.37-4.29)	75.4 (851)	2.87 (2.14-3.83)	74.9 (846)
14. Unsafe living situation	4.65 (3.44-6.29)	74.8 (844)	3.98 (2.82-5.61)	74.5 (841)
15. Personal problems	1.95 (1.44-2.63)	63.1 (712)	1.99 (1.44-2.74)	62.7 (708)

[a] The percentage and the number of perpetrators with the risk and victim vulnerability factor coded as present.

Exploratory factor analysis on risk factors 1-10 in the SARA:SV (n = 179)

A factor analysis was performed, based on the ten perpetrator risk factors in the SARA:SV. Initially, the assumptions for EFA were controlled for and yielded appropriate values (see Table 3).

The PCA revealed three eigenvalues above 1, explaining 33.3%, 13.0%, respectively 10.3% of the variance. However, an inspection of the screeplot showed a break after the second component. Moreover, Horn's parallel analysis supported a two factor solution since two components exceeded the corresponding criterion values randomly generated from a data matrix of identical size (10 variables x 179 respondents). Based on this, a two factor solution was considered appropriate. Hence, the analysis was repeated and the variables were forced into a two factor solution.

The two component solution explained a total of 46.2% of the variance. Direct oblimin rotation was applied in order to interpret the two components, since the inter-correlation between the two factors was .37.

Table 3. Exploratory factor analysis 1[a,b]: Pattern and structure matrix for PCA with direct oblimin rotation of a two factor solution (n = 179).

Items in the SARA:SV	Factor 1 (The High risk perpetrator)		Factor 2 (The Generally violent/antisocial perpetrator)		
	Pattern	Structure	Pattern	Structure	Communalities
5. Violent attitudes	**.802**	**.787**	-.043	.252	.620
2. Violent threats or thoughts	**.713**	**.686**	-.072	.190	.475
3. Escalation	**.664**	**.663**	.000	.244	.440
7. Intimate relationship problems	**.581**	**.649**	.184	.398	.450
10. Mental health problems	**.539**	**.666**	.345	**.543**	.547
1. Violent acts	.359	.348	-.029	.103	.122
9. Substance use problems	-.107	.189	**.804**	**.764**	.594
8. Employment problems	-.078	.207	**.773**	**.744**	.559
6. General criminality	.128	.388	**.708**	**.755**	.584
4. Violation of court orders	.099	.260	**.435**	**.472**	.231

Note: Major loadings (> .4) are bolded.

[a] Excluding the victim vulnerability factors.

[b] Bartlett's test of Sphericity, p = .000. Kaiser-Meyer-Olkin (KMO) = .82.

The pattern and structure matrix of the first EFA is presented in Table 3. Factor 1 was interpreted as containing perpetrators of severe or deadly IPV and was labeled 'the high risk perpetrator' (HR). This due to the risk factors loading strongest on this subtype: 'violent attitudes', 'violent threats or thoughts', 'escalation', 'intimate relationship problems', and 'mental health problems'. Factor 2 was interpreted as containing the GV/A perpetrator, identified in previous research (see e.g., Holtzworth-Munroe & Stuart, 1994). This due to the risk factors loading strongest on this subtype: 'substance use problems', 'employment problems', 'general criminality', 'mental health problems', and 'violation of court orders'.

Exploratory factor analysis on risk factors 1-9 in the SARA:SV (*n* = 235)

A second factor analysis was performed, excluding the victim vulnerability factors and the risk factor 'mental health problems'. This was done in order to examine whether the exclusion of 'mental health problems' would affect the first EFA. Thus, this EFA included nine perpetrator risk factors. Initially, the assumptions for EFA were controlled for and yielded appropriate values (see Table 4).

The PCA revealed three eigenvalues above 1, explaining 32.0%, 14.3%, respectively 11.4% of the variance. However, an inspection of the screeplot showed a break after the second component. Moreover, Horn's parallel analysis supported a two factor solution since two components exceeded the corresponding criterion values randomly generated from a data matrix of identical size (9 variables x 235 respondents). Based on this, a two factor solution was considered appropriate and therefore the analysis was repeated, forcing the variables into a factor solution containing two factors.

The two component solution explained a total of 46.3% of the variance. Direct oblimin rotation was applied in order to interpret the two components, since the inter-correlation between the two factors was -.35.

Table 4. Exploratory factor analysis 2[a,b]: Pattern and structure matrix for PCA with direct oblimin rotation of a two factor solution (N = 235).

Items in the SARA:SV	Factor 1 (The High risk perpetrator)		Factor 2 (The Family only perpetrator)		
	Pattern	Structure	Pattern	Structure	Communalities
5. Violent attitudes	**.805**	**.798**	.021	-.263	.637
2. Violent threats or thoughts	**.706**	**.687**	.052	-.197	.475
3. Escalation	**.660**	**.665**	-.014	-.247	.443
7. Intimate relationship problems	**.586**	**.657**	-.202	**-.409**	.467
1. Violent acts	.394	.387	.018	-.120	.150
9. Substance use problems	-.106	.178	**-.805**	**-.767**	.598
8. Employment problems	-.070	.380	**-.775**	**-.758**	.568
6. General criminality	.128	.204	**-.713**	**-.751**	.589
4. Violation of court orders	.105	.261	**-.443**	**-.480**	.240

Note: Major loadings (> .4) are bolded.

[a] Excluding the victim vulnerability factors and the risk factor 'mental health problems'.

[b] Bartlett's test of Sphericity, p = .000. Kaiser-Meyer-Olkin (KMO) = .78.

The pattern and structure matrix of the second EFA is presented in Table 4. Factor 1 was interpreted as the HR perpetrator, identified in the first EFA, based on the strongest loading risk factors: 'violent attitudes', 'violent threats or thoughts', 'escalation', and 'intimate relationship problems'. Factor 2 was interpreted as representing the FO perpetrator, identified in previous research (see e.g., Holtzworth-Munroe & Stuart, 1994). This due to the strongest negatively loading risk factors: 'substance use problems', 'employment problems', 'general criminality', 'violation of court orders', and 'intimate relationship problems'.

Exploratory factor analysis on risk factors 1-9 and victim vulnerability factors 11-15 in the SARA:SV (*n* = 201)

The third factor analysis was performed including nine risk factors and the five victim vulnerability factors of the SARA:SV, hence considered the main analysis. The risk factor 'mental health problems' was excluded. Initially, the assumptions for EFA were controlled for and yielded appropriate values (see Table 5).

The PCA revealed three eigenvalues above 1, explaining 28.4%, 10.8%, respectively 10.3% of the variance. An inspection of the screeplot showed a break after the third component. Moreover, Horn's parallel analysis supported a three factor solution since three components exceeded the corresponding criterion values randomly generated from the data matrix of identical size (14 variables x 201 respondents). Based on this, a three factor solution was considered appropriate and therefore the analysis was repeated, forcing the variables into a factor solution containing three factors.

The three component solution explained a total of 49.5% of the total variance. Direct oblimin rotation was applied in order to interpret the three components, since the inter-correlation between the three factors was -.26.

The pattern and structure matrix of the third EFA is presented in Table 5. Factor 1 was interpreted as the HR perpetrator, presented in EFA 1 and 2. This due to the risk and victim vulnerability factors loading strongest on this subtype: 'violent attitudes', 'violent threats or thoughts', 'escalation', 'extreme fear' and 'intimate relationship problems'. Factor 2 was interpreted as a victim profile. This due to the strongest negatively loading risk and victim vulnerability factors: 'inadequate access to resources', 'inconsistent behavior/attitude', 'personal problems', 'unsafe living situation', 'extreme fear', and 'violent acts'. This factor was labeled as 'the rational victim' (RV). Factor 3 was interpreted

as the GV/A perpetrator, identified in the first EFA. This due to the risk and victim vulnerability factors loading strongest on this subtype: 'intimate relationship problems', 'personal problems' 'employment problems', 'substance use problems', 'general criminality', and 'violation of court orders'.

Kruskal-Wallis tests was applied on the results of the third EFA, revealing a statistically significant difference between the factors (the HR perpetrator, the RV and the GV/A perpetrator), regarding degree of risk for acute IPV (χ^2 (2) = 63.2, p = .000) as well as for severe or deadly IPV (χ^2 (2) = 36.9, p = .000). Post-hoc tests using Mann-Whitney U tests were administered in order to examine which subtypes (the HR perpetrator, the RV and the GV/A perpetrator) differed. In order to reduce the probability of a Type 1 error, a Bonferroni adjusted alpha value (p = .017) was applied (Pallant, 2010). Hence, only p-values lower than .017 was considered significant.

Post-hoc tests revealed that cases with the HR perpetrator had a significantly higher risk for acute IPV, compared to cases with the RV (U = 715, z = -7.82, p = .000, r = .55) and the GV/A perpetrator (U = 692, z = -3.46, p = .001, r = .24). Moreover, cases with the GV/A perpetrator had a significantly higher risk for acute IPV, compared to cases with the RV (U = 1639, z = -4.15, p = .000, r = .30). Concerning the risk for severe or deadly IPV, cases with the HR perpetrator had a significantly higher risk, compared to cases with the RV (U = 1234, z = -6.05, p = .000, r = .43) and cases with the GV/A perpetrator (U = 727, z = -3.32, p = .001, r = .23). However, cases with the GV/A perpetrator did not differ statistically significantly from cases with the RV (U = 2141, z = -2.16, p = .031, r = .15) concerning the risk for severe or deadly IPV.

DISCUSSION

The present study aimed at creating a typology of intimate partner violence perpetrators, based on information available to the police. Using EFA on a Swedish sample of 235 IPV perpetrators, we were able to identify a typology consisting of four subtypes: the generally violent/antisocial (GV/A) perpetrator, the family only (FO) perpetrator, the high risk (HR) perpetrator, and the rational victim (RV).

However, since all risk and victim vulnerability factors in the SARA:SV significantly increased the risk for acute respectively severe or deadly IPV (as shown in the OR analysis) it is important to notice that a typology based solely on these results may be sufficient. For example, the presence of the risk factors 'violent threats or thoughts', 'escalation', and 'violent attitudes' highly increased the risk for severe or deadly IPV (> 6 times), indicating a high risk perpetrator subtype. Importantly, these results confirmed the validity of the risk and victim vulnerability factors in the SARA:SV, supporting the previous statement made by Thijssen and de Ruiter (2011) concerning its usefulness as a tool in constructing a typology of partner violence perpetrators.

The Generally violent/antisocial perpetrator
In our first EFA where all perpetrator risk factors were included, the SARA:SV risk factors: 'substance use problems', 'employment problems', 'general criminality', 'mental health problems', and 'violation of court orders' loaded strongly on a subtype, possibly reflecting an antisocial IPV perpetrator. This perpetrator might be indicative of the GV/A perpetrator identified in previous research (Holtzworth-Munroe et al., 2000; Huss & Langhinrichsen-Rohling, 2006; Huss & Ralston, 2008; Johnson et al., 2006; Langhinrichsen-Rohling et al., 2000; Thijssen & de Ruiter, 2011; Waltz et al., 2000). Moreover, our results demonstrated the presence of employment problems for this subtype, which further supports our conclusion of this subtype as antisocial.

Table 5. Exploratory factor analysis 3[a,b]: Pattern and structure matrix for PCA with direct oblimin rotation of a three factor solution (n = 201).

Items in the SARA:SV	Factor 1 (The High risk perpetrator)		Factor 2 (The Rational victim)		Factor 3 (The Generally violent/antisocial perpetrator)		
	Pattern	**Structure**	**Pattern**	**Structure**	**Pattern**	**Structure**	**Communalities**
2. Violent threats or thoughts	**.791**	**.755**	.160	-.054	.025	.188	.593
5. Violent attitudes	**.684**	**.739**	-.178	-.366	.034	.245	.579
3. Escalation	**.560**	**.612**	-.145	-.305	.054	.227	.399
12. Extreme fear	**.537**	**.612**	-.363	**-.486**	-.083	.132	.494
7. Intimate relationship problems	**.529**	**.600**	.018	-.189	.302	**.431**	.444
13. Inadequate access to resources	.039	.237	**-.736**	**-.749**	.014	.187	.563
11. Inconsistent behavior/attitude	-.004	.182	**-.725**	**-.719**	-.023	.138	.518
15. Personal problems	-.245	.023	**-.712**	**-.718**	.315	**.412**	.635
14. Unsafe living situation	.293	.432	**-.580**	**-.645**	-.058	.145	.493
1. Violent acts	.066	.179	**-.442**	**-.456**	-.017	.098	.211
8. Employment problems	-.134	.094	-.147	-.279	**.752**	**.751**	.594
9. Substance use problems	-.029	.164	-.020	-.179	**.750**	**.747**	.559
6. General criminality	.163	.336	.025	-.177	**.715**	**.750**	.587
4. Violation of court orders	.221	.307	.073	-.079	**.421**	**.460**	.256

Note: Major loadings (> .4) for each item are bolded.

[a] Excluding the risk factor 'mental health problems'.

[b] Bartlett's test of Sphericity, p = .000. Kaiser-Meyer-Olkin (KMO) = .82.

The Family only perpetrator

Our second EFA, including all perpetrator risk factors except 'mental health problems', generated a subtype of partner violence demonstrating an absence of the SARA:SV risk factors: 'substance use problems', 'employment problems', 'general criminality', 'violation of court orders', and 'intimate relationship problems' (see Table 4). The lack of these risk factors is indicative of the FO perpetrator identified in previous studies (Holtzworth-Munroe et al., 2000; Huss & Langhinrichsen-Rohling, 2006; Huss & Ralston, 2008; Johnson et al., 2006; Langhinrichsen-Rohling et al., 2000; Thijssen & de Ruiter, 2011; Waltz et al., 2000), reflecting an otherwise socially well-functioning IPV perpetrator. Although not in Holtzworth-Munroe and Stuart's (1994) original description of the FO perpetrator, the absence of employment problems further supports the notion of this subtype as a non-antisocial IPV perpetrator. Noteworthy, the consideration of employment problems may be supportive when identifying a non-antisocial (FO) respectively an antisocial (GV/A) IPV perpetrator.

The High risk perpetrator

More importantly, the main analysis (i.e., the third EFA) of this study identified two subtypes of partner violence not previously described in the literature: the HR perpetrator and the RV. The HR perpetrator was labeled as such, due to the SARA:SV risk and victim vulnerability factors loading on this subtype (see Table 5). 'Violent threats or thoughts', 'violent attitudes', 'escalation', 'extreme fear', and 'intimate relationship problems' all have a known relationship to IPV in general, as well as to severe or deadly IPV (Campbell et al., 2003; Kropp et al., 2008). However, these risk factors combined could pose an even higher risk for this type of IPV. Moreover, an extensive wealth of research (see e.g., Wilson & Daly, 1993) has shown that deadly IPV is most likely to occur in the context of a separation, indicating the importance of 'intimate relationship problems'. Furthermore, the presence of 'extreme fear' experienced by the victim should be considered as an important indicator of future risk for IPV, since this fear is often realistic as well as adequate (Heckert & Gondolf, 2004).

Additionally, the OR: s for the risk and victim vulnerability factors presented in Table 2 further support the conclusion of the HR perpetrator as constituting a high risk for severe or deadly IPV. For example, the presence of 'escalation' increased the risk for severe or deadly IPV by roughly eight times, while 'violent threats or thoughts' increased this risk by more than six times. In sum, these risk and victim vulnerability factors are most likely indicating a high risk perpetrator, prone to use severe or deadly IPV. This interpretation was also supported by the results from the Kruskal-Wallis tests, demonstrating that cases with the HR perpetrator had a significantly higher degree of acute risk for IPV as well as for severe or deadly IPV, compared to the GV/A perpetrator. This is consistent with previous research, indicating that GV/A perpetrators are not prone to exert deadly IPV (Belfrage & Rying, 2004). Moreover, this notion was supported by the fact that cases with the GV/A perpetrator was not deemed significantly more likely to exert severe or deadly IPV, compared to cases with the RV.

Another important finding was that the HR perpetrator was possible to identify without the risk factor 'mental health problems'. This was illustrated in the first and second EFA, where the exclusion of this risk factor did not affect the constellation of risk factors present in the subtype. Hence, although a well-known risk factor for IPV (see e.g., Kropp et al., 2008), as well as for violence in general (see e.g., Steadman et al., 1998), 'mental health problems' is not decisive when identifying the HR perpetrator. Based on two arguments, this should be considered important for the police when identifying this subtype. First, information concerning the perpetrator's mental health is rarely available to the police. Second, when available, the information regarding the perpetrator's mental health has been demonstrated to be difficult for the police to interpret (Storey et al., 2011). In our

study, this was indicated by the high percentage of missing values for this variable (60.2%). A reasonable explanation to this is that police officers are not trained clinicians and therefore might have difficulties interpreting this type of information.

Although demonstrated not to be decisive when identifying perpetrators of IPV in our typology, mental health problems are very likely to be present in a sample of IPV perpetrators (Holtzworth-Munroe & Stuart, 1994) and its importance should not be diminished. In the first EFA, 'mental health problems' were present for both the HR perpetrator as well as for the GV/A perpetrator. Based on previous research of IPV perpetrator typologies (see e.g., Holtzworth-Munroe et al., 2000), it is reasonable to suggest that for the GV/A perpetrator these mental health problems constitute of an antisocial personality disorder or psychopathy. In contrast, for the HR perpetrator these mental health problems are more problematic to ascertain. Considering that these perpetrators had an elevated risk for deadly IPV, it is possible that these perpetrators suffer from dysphoria or traits of borderline personality disorder. This suggestion is based on previous research arguing that the IPV perpetrators akin to Holtzworth-Munroe and Stuart's (1994) DB subtype are overrepresented as intimate partner homicide perpetrators (Belfrage & Rying, 2004; Dixon, Hamilton-Giachritsis & Browne, 2008).

The Rational victim
An equally important finding was the identification of the RV subtype which differed to a great extent from the three subtypes described above. This since mainly victim vulnerability factors loaded on this subtype (see Table 5). However, the following risk and victim vulnerability factors were all absent for the RV: 'inadequate access to resources', 'inconsistent behavior/attitude', 'personal problems', 'unsafe living situation', 'extreme fear', and 'violent acts'. In sum, these are all indicators of a rational, non-normalized, victim, rather than an IPV perpetrator subtype. This subtype is suggestive of victims who are, to a greater extent, susceptible to risk management strategies provided by the police, compared to normalized victims of IPV. This subtype of partner violence could be representative of those victims exposed to violent threats, although not yet being exposed to physical IPV. Furthermore, the risk for acute and severe or deadly IPV was significantly lower for this subtype. In sum, this subtype clearly demonstrates the importance of considering victim vulnerability factors in risk assessments of IPV, as previously argued by Belfrage and Strand (2008).

Practical implications in police practice
In terms of practical utility for the police, this study demonstrated that it was possible to discriminate the four subtypes (i.e., the GV/A, the FO, the HR, and the RV) using solely information derived from a SARA:SV assessment. Also, the clinical information which is considered difficult for the police to interpret was not necessary in order to identify the aforementioned subtypes.

Furthermore, the different levels of risk for acute as well as severe IPV associated with each subtype could be a guidance in distributing risk management strategies (see e.g., Thijssen & de Ruiter, 2011). Considering the low rates of IPV recidivism as well as the constellation of risk factors, the FO perpetrator requires the least extensive protective measures. In contrast, the GV/A perpetrator and the HR perpetrator demands more extensive interventions, due to their elevated risk for IPV. However, it is crucial that the HR perpetrator is prioritized by the police as this subtype is the most likely to exert severe or deadly IPV. Furthermore, it is considered highly possible for the police to prevent future IPV in cases with the RV subtype. Since no victim vulnerability factors are present in these cases, the collaboration of the victim in the proposed risk management strategies could be rather uncomplicated. Thus, relatively modest protective measures could be sufficient in order to prevent IPV in these cases.

Strengths and limitations

Unlike the majority of research creating typologies of IPV perpetrators (Holtzworth-Munroe et al., 2000; Huss & Langhinrichsen-Rohling, 2006; Huss & Ralston, 2008; Johnson et al., 2006; Thijssen & de Ruiter, 2011; Waltz et al., 2000) we did not create a typology based on the three dimensions offered by Holtzworth-Munroe and Stuart (1994). Instead, the descriptive dimensions utilized were the risk and victim vulnerability factors in the SARA:SV. Still, we were able to identify the FO and the GV/A perpetrator, supporting the cross- cultural validity of the Holtzworth-Munroe and Stuart's (1994) typology as well as demonstrating its identifiability using different descriptive dimensions. However, this is not completely surprising due to the fact that Thijssen and de Ruiter (2011) were able to validate the four subtypes (FO, GV/A, DB & LLA) identified in previous research (see e.g., Holtzworth-Munroe et al., 2000), using the SARA:SV risk factors 'violent acts', 'general criminality', 'substance use problems', and 'mental health problems' as corresponding to Holtzworth-Munroe and Stuart's (1994) three dimensions.

This study also has some methodological limitations. First, when classifying partner violence as belonging to a subtype, it is necessary that the combination of the risk and victim vulnerability factors characteristic of each subtype is present (i.e., cases with the HR perpetrator and the GV/A perpetrator) or absent (i.e., cases with the FO perpetrator and the RV). In cases where the risk or victim vulnerability factors have to be present, it is not stated whether these need to be coded as *present* or *partially present* in the SARA:SV. However, due to the fact that the SARA:SV is based on the SPJ approach to risk assessment this should not be considered a limitation. This since the partial presence of a risk or victim vulnerability factor is sufficient for its consideration (Kropp et al., 2008). Second, constructing typologies using risk and victim vulnerability factors pose a challenge due to those cases where all risk and victim vulnerability factors are present. This complicates the procedure of classifying those perpetrators as belonging to a specific subtype. However, such cases should be considered as high risk cases. For example, Belfrage and Strand (2008) demonstrated that a higher number of present risk factors were associated with a higher degree of judged risk by police officers. A third limitation was that the three EFA: s explained between 46.2 and 49.5% of the variance. This means that roughly 50% of the included perpetrators could not be classified as belonging to a certain subtype of partner violence. Although a limitation, the underlying approach in EFA emanates from the inherent trade-off of identifying a reasonable number of factors explaining a reasonable amount of the variance (Tabachnick & Fidell, 2013). Also, it is well known that IPV perpetrators constitute a heterogeneous group of men (see e.g., Thijssen & de Ruiter, 2011). Therefore, a typology able to incorporate all these men, while maintaining a reasonable number of factors, should be considered unachievable. Finally, it is important to clarify that the perpetrators in this study are suspects rather than sentenced offenders since the SARA:SV risk assessments are based on police reports.

Conclusion

The central finding of this study was the construction of an IPV typology, based on information available to the police. These results further demonstrates the usefulness of SARA:SV as a tool in constructing a typology of partner violence perpetrators. Importantly, clinical information concerning the perpetrator's mental health was not required in order to identify the subtypes in our typology. However, before implemented into police practice it is crucial that our proposed typology is validated in future research, favorably using confirmatory factor analysis.

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