

Contribution of a Cluster Approach to Identify the Profiles of Men Sentenced for Sexual Violence According to Their Risk of Reoffending

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Abstract

Introduction: The aim of this study is to propose a typology of recidivism risk profiles based on the criminogenic needs of a population of men sentenced for sexual violence. Their socio-demographic, criminological, psychological, and psychiatric factors and vulnerabilities are compared. This classification will respond to the need for a better identification of the factors involved in the risk of recidivism of men sentenced for sexual violence, in order to develop more effective management.

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Method: Several psychological and psychiatric scales (personality traits, impulsivity, cognitive distortions, empathy, and psychiatric disorders) were completed by 86 men incarcerated for sexual violence. Their socio-demographic and criminological characteristics were also recorded, and the investigator rated three recidivism scales for all participants. Results: Cluster analysis led to identification of two significantly different needs groups. In contrast to the “Lower needs” profile ($n = 54, 64\%$), the men with a “Higher needs” profile ($n = 32, 36\%$) were significantly younger and less educated had more adult and extra-familial victims, scored higher on Neuroticism and lower on Conscientiousness and Empathy, and presented with more past and current psychiatric disorders.

Discussion: The overall findings of this study are consistent with the literature on the characteristics of men sentenced for sexual violence with high needs. The assessment and management of men who have committed sexual violence must consider: criminogenic factors, which should be prioritized; past or present psychiatric disorders, which may act as acute risk factors; and non-criminogenic needs, which should not be prioritized, but which may (when linked to criminogenic needs) impact the effectiveness of management.

Keywords

violence, sexual assault, men sentenced for sexual violence, recidivism, criminogenic needs

Introduction

Recidivism of men sentenced for sexual violence can take various forms: sexual (any new sexual offence), violent (any new act of violence), and general (any new offence). In a sample of men sentenced for sexual violence, the average sexual recidivism rate over a period of 5–6 years was 13.7%, the rate of violent recidivism, whether or not associated with sexual violence, was 14.3%, and the average general recidivism rate was 36.2% (Hanson & Morton-Bourgon, 2005).

To reduce the recidivism of men sentenced for sexual violence effectively, the *Risk-Need-Responsivity* (RNR) model (Bonta & Andrews, 2017) outlines three core principles on which management should be based (Hanson et al., 2009). The “Risk” principle recommends that the intensity of management should be adjusted according to the level of risk of recidivism; a reliable and robust assessment is possible through the use of structured recidivism risk scales. The “Need” principle advocates focusing on the criminogenic needs of the offender, that is, on the dynamic risk factors of recidivism. Several risk factors for sexual and non-sexual (violent and general) recidivism have

already been identified (Brouillette-Alarie, 2016; Mann et al., 2010). However, other factors remain to be identified, particularly concerning the psychological functioning of men with a high risk of sexual violence. Finally, the “Responsivity” principle advocates on the one hand the use of cognitive and behavioral therapies or those based on social learning theories, and on the other hand, the individualization of management.

Indeed, individuals who have committed sexual violence constitute a very heterogeneous population, including in terms of risk of recidivism, which makes management difficult. To improve our understanding of this population, Knight and Prentky (1990) stressed the importance of classification in order to develop a taxonomic approach and provide theoretical, research and management leads. Different methods are used to construct typologies. For example, theory-led classification models identify different groups on the basis of the most relevant theories (e.g., Langton & Marshall, 2001’s rapist model). The clinical approach classifies individuals on the basis of psychiatric or paraphilic disorders (e.g., Groth et al., 1982’s classification of regressed vs. fixed molesters), while the actuarial approach assesses and predicts risk by combining different risk factors (e.g., Hanson & Morton-Bourgon, 2004). More recently, a psychometric profiling approach has been developed, based on standardized instruments and using statistical methods such as clustering to identify new categories of individuals who have committed sexual violence (Martínez-Catena et al., 2016). This approach offers a promising avenue for evidence-based understanding of the recidivism of these individuals and their psychological functioning. In particular, a typology based on their criminogenic needs (dynamic risk factors) allows the complexity of recidivism risk to be understood beyond a “simple” score or risk level, making it possible, for example, to set up personalized management programs for two individuals presenting with an identical recidivism risk but different needs.

A few studies have already applied the clustering method to the criminogenic needs of individuals who have committed sexual violence. Seto and Fernandez’s (2011) study of 419 men incarcerated for sexual violence identified four clusters based on items of the Stable-2000 (dynamic recidivism risk assessment scale). Participants in the “low needs” cluster scored low on all Stable-2000 items, while the “typical” group scored close to average. The “sexually deviant” group comprised participants who scored higher than the other groups on emotional identification with children, deviant sexual interests, tolerant attitudes towards adult-child sex and sexual urges/preoccupations, social rejection and loneliness. Their scores on cognitive distortions were averaged. Finally, the “pervasive high-needs” profile characterized participants with the highest scores on the Stable-2000. More recently, the studies of Ennis et al. (2014) and Martínez-Catena et al. (2016), involving 394 and 94 men sentenced for sexual violence respectively, used the clustering method with the Static-2002R variables. The two studies identified

three comparable clusters (low, low-mod, mod-high risk, and low, moderate, high needs, respectively) based on general and domain risks. The “Mod-High Risk and High Needs” clusters included participants with high Static-2002R scores. They had a higher risk of failing supervision, more deviant sexual interests, more antecedents of sexual victimization and neglect, more developmental disorders, and more offence planning than the other groups (Ennis et al., 2014), as well as more alcohol problems, more aggression, and less social self-confidence (Martinez-Catena et al., 2016). The “Moderate Needs and Low-Mod risk” clusters included participants with intermediate Static-2002R scores; in Ennis et al.’s study (2014), this group showed moderate aggression, moderate levels of deviant sexual interests and some developmental disabilities. The “Low Risk” participants had fewer sexual partners, later onset of criminal behavior, and fewer behavioral and social problems (Ennis et al., 2014), while the Low Needs cluster showed high denial and higher levels of social desirability (Martinez-Catena et al., 2016).

These studies using clustering, based on the criminogenic needs of men sentenced for sexual violence, remain scarce and focus only on single sexual recidivism risk scales. Using this approach with a broader range of personal factors and vulnerabilities would provide greater insight into the recidivism trajectories of these men, and enable personalized interventions to be set up in line with their specific needs (Beech & Mann, 2002; Seto & Fernandez, 2011). Indeed, the risk of recidivism is multifaceted and cannot be characterized by a single measure; a more accurate clinical picture could undoubtedly be obtained by examining how the different characteristics of recidivism overlap, limiting or catalyzing risk.

Furthermore, while the population of men sentenced for sexual violence can be described by sociodemographic and criminological factors, certain psychological vulnerabilities, such as personality traits, trait impulsivity, cognitive distortions, and empathy may provide additional indicators of criminogenic needs (Barnett et al., 2013; Mann et al., 2010). In addition, some of these men may suffer from psychiatric disorders, which may constitute a form of “psychiatric dangerousness,” increasing the risk of reoffending through their influence on criminogenic needs (Lee & Hanson, 2016).

The aims of this study were thus (1) to identify and compare the profiles of men sentenced for sexual violence according to three types of recidivism risk: sexual (using the Risk for Sexual Violence Protocol; RSVP), violent (using the Historical Clinical Risk Scale-20; HCR-20), and general (using the Level of Service/Case Management Inventory; LS/CMI); (2) to identify and compare sociodemographic features (age, level of education) and criminological factors (length of sentence and time served, victim characteristics) across clusters of different risk levels; (3) to identify and compare psychological vulnerabilities (personality traits—Big Five, impulsivity—cognitive distortions, general empathy) and psychiatric symptomatology (past and

current psychiatric disorders, antisocial personality disorder) across clusters of different risk levels.

Method

Participants

The sample included 86 men, resident in France, and incarcerated for sexual violence in French prisons. Their average age was 45.7 ($SD = 11$ years; min = 19—max = 71 years) and their average length of education was 10.1 years ($SD = 2.6$; 1–15), which corresponds to a Brevet d'Etudes Professionnelles (vocational high school diploma, 10th grade). They had been sentenced to an average of 132 months in prison ($SD = 68.8$; 1–360) and had served an average of 61.1 months ($SD = 53.2$; 1–384) at the time of the interviews. Among the participants, 68.6% ($n = 59$) had been sentenced for child sexual violence, 62.8% ($n = 54$) had abused intra-family members, and 88.8% ($n = 71$) had female victims.

Instruments

Recidivism risk assessment scales. The Risk for Sexual Violence Protocol (RSVP; Hart & Boer, 2010) is a structured professional judgment protocol, used to assess and manage sexual recidivism risk. The French version was translated by Pham and Michaux (University of Mons) and has good psychometric properties (Hart & Boer, 2010). It has 22 items covering five domains: History of sexual violence, psychological adjustment, mental disorder, social adjustment, and manageability. These five domains are assessed according to their (i) past, (ii) recent, and (iii) future presence. For this study, a quantitative scoring method was applied to each item (0 no evidence, one partial evidence, two definite evidence). It provides a total score, a score for each subscale, and a score for all past, present and future items (Jones et al., 2016; Vargen et al., 2020). For this study, we calculated the overall risk score, the score for the five risk domains, and the score for past, present and future risk. Vargen et al. (2020)'s study showed, in a sample of 100 adult male sexual offenders (29% of whom had further contact with the police for sexual violence), the good psychometric qualities of RSVP: good inter-rater reliability (Intra-Class Correlation Coefficient Indices (ICC) = .93; Vargen et al., 2020) and good predictive validity (Hazard Ratio (HR) = 1.61, [1.19, 2.16], $p = .002$; Vargen et al., 2020). There are currently no published studies on the internal consistency of the RSVP.

The Historical, Clinical, and Risk Management Scale 20—version 2 (HCR-20; Webster et al., 1997) is used to predict and manage the risk of violent recidivism. The French version was translated by Claix and Pham (2004) and

the Philippe Pinel Institute. It is composed of 20 items divided into three domains: “Historical items,” “Clinical items,” and “Risk management items.” Like the RSVP, it is possible to rate each item for research purposes (Jones et al., 2016); hence, each item was scored quantitatively (0 no evidence, 1 partial evidence, 2 definite evidence) in order to obtain a total score and a score for each subscale (Claix & Pham, 2004). The HCR-20 V2 has good psychometric qualities, with good inter-rater reliability (ICC = .92, Cooke et al., 2001), good internal consistency (Pearson’s correlation $r=.78$, Douglas & Webster, 1999), and good general and violent predictive validity (Area Under the Curve (AUC) = .79, Guay, 2008).

The Level of Service/Case Management Inventory (LS/CMI; Andrews et al., 2004) assesses the risk of recidivism of offenders and is designed to assist professionals in management and treatment planning. The French version was translated and validated by Guay (2016). It is divided into 11 sections. Section 1 (the only one used in this study) assesses eight domains related to recidivism (e.g., “Family/marital” and “Education and Employment”). Each item was rated quantitatively, either 0 (no evidence) or 1 (presence of evidence), yielding a score for each of the eight domains and a total score. The LS/CMI has good psychometric qualities, with good inter-rater reliability (ICC = .64; Labrecque et al., 2018), good internal consistency (Kuder–Richardson 20’ coefficient (KR) = .92; Guay, 2016), and good predictive validity (AUC = .72, $p < .001$ for new offences in general and AUC = .70 for new violent offences; Guay, 2016).

It should be noted that items 12 and 7 (“psychopathy”) of the RSVP and HCR-20, respectively, were omitted in this study, as they require objective assessment data for this disorder (e.g., Hare’s Psychopathy Checklist-Revised, Hare, 2003) that were not available in the participants’ records.

Socio-demographic and criminological data. Participants provided information about their age and education level. They also provided information about the length of their current sentence, how long they had been in prison, whether their victim(s) was/were adult(s) or minor(s), their relationship to the victim(s), and the gender of their victim(s).

Psychological scales. The Big Five Inventory (BFI; John et al., 1991), a self-report questionnaire, assesses five traits of “normal” personality: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. The French version developed by Plaisant et al. (2010) has 45 items, rated on a 5-point Likert scale (ranging from strongly disagree to strongly agree). The BFI has good psychometric properties.

The Impulsive Behavior Scale (UPPS; Whiteside et al., 2005) is a self-administered questionnaire that assesses impulsivity through four dimensions: negative urgency, lack of premeditation, lack of perseverance, and sensation

seeking. The French version has 45 items (Van der Linden et al., 2006). Responses are rated on a 4-point Likert scale, from strongly agree (1) to strongly disagree (4). The total score is the sum of the points obtained for the items, after recoding the inverted items.

The Rape and Molest Scales (Bumby, 1996) are self-administered questionnaires that assess the cognitive distortions of rapists and child molesters, respectively. There are 36 items in the Rape Scale and 38 in the Molest Scale, scored on a 4-point Likert scale, from strongly disagree (1) to strongly agree (4). The total score is the sum of the item scores.

The Basic Empathy Scale (BES; Jolliffe & Farrington, 2006) is a self-report measure of empathy in its two dimensions, cognitive and emotional. The French version has 20 items (D'Ambrosio et al., 2009). Responses are rated on a 5-point Likert scale, from strongly disagree (1) to strongly agree (5). The total score is the sum of the points obtained for each item, after recoding the reversed items.

The Social Desirability Scale (SDS-17; Crowne & Marlowe, 1960; Stöber, 1999) is a self-administered questionnaire, assessing social desirability tendencies. The French version has 16 items, and participants rate each item as true (1 point) or false (0 point). The French version provides a total score (Blais et al., 1991).

For all these scales, higher scores indicate higher levels of psychological factors (e.g., higher SDS-17 scores indicate higher social desirability).

Psychiatric scale. The Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998), a semi-structured interview, assesses the presence of psychiatric disorders (axis 1: mood disorders, anxiety disorders, phobic disorders, obsessive compulsive disorder, substance abuse and dependence disorders, eating disorders, psychotic disorders) and antisocial personality disorder (axis 2) based on DSM-IV criteria (American Psychiatric Association, 1994). The French version was translated by Lecrubier et al. (1997). For this study, only the most relevant disorders with regard to the psychiatric profiles of men sentenced for sexual violence were retained, and some were pooled to avoid small samples: current mood disorders (melancholic depression, dysthymic disorder, depressive disorder, manic episode, and hypomanic episode); past mood disorders (depressive disorder, manic, and hypomanic episodes); current anxiety, obsessive, and phobic disorders (panic disorder with or without agoraphobia, post-traumatic stress disorder, agoraphobia, social phobia, and obsessive disorder); past anxiety, obsessive, and phobic disorders (panic disorder, paucisymptomatic panic disorder, post-traumatic stress disorder, agoraphobia, social phobia, and obsessive disorder); addictive disorders (alcohol and cannabis dependence); psychotic disorders (past psychotic disorder and current psychosis), and anti-social personality disorder.

Procedure

This study was approved by an ethics group for clinical research. Assessments were conducted in four prisons in different regions in France between March 2018 and February 2020. After they had been informed about the study, health-care workers (nurses, psychologists, and psychiatrists) in the medical departments of the four prisons invited patients who met the inclusion criteria to participate in the study. Eight people (9%) refused to participate. There were no discontinuations/discharges/loss of follow-up during data collection.

First, a psychologist (accredited to use the risk tools: RSVP, HCR-20, and LS/CMI) conducted semi-structured individual interviews with the participants during their detention. Covering criminal history, current criminal facts, psychopathological and health elements, social and family elements, and plans on release from detention. The experimenter then consulted the participants' medical records to complete the data in order to score the three recidivism risk scales, following the procedures recommended by the scales' authors (i.e., each item was scored according to the information collected by the evaluator and in accordance with the scale's scoring guide). In order to ensure inter-rater reliability of the RSVP, HCR-20 and LS/CMI scores, a blinded researcher (also accredited to use the tools) scored the data of seven randomly selected participants (8.14%). Intra-Class Correlation Coefficient Indices (ICC) were satisfactory for the total scores of the scales (RSVP total score: ICC = .95; HCR-20 total score: ICC = .96; LS/CMI total score: ICC = .88). Next, participants completed the self-report psychological scales. The rape scale was only completed by participants who had assaulted adults, and the sexual abuse scale by those whose victims were children. Finally, the MINI was administered to all participants in the form of a structured interview. The protocol lasted an average of 2.5 hours

Data Analysis

All statistical analyses were performed with SPSS© IBM© version 25. A cluster analysis was performed. Clustering is an exploratory statistical method that divides individuals into groups according to their common characteristics. We used the two-step clustering method, with z-standardization of incorporated variables, to determine the optimal number of clusters, using the SPSS® Two-Step clustering algorithm. This is designed to handle large data sets efficiently and can deal with both continuous and categorical variables. When variables in the analysis are categorical, a two-step cluster analysis is required; in the first step, original cases are grouped into pre-clusters based on a distance measure, and in the second step, these pre-clusters are automatically clustered by a hierarchical clustering algorithm (Bayesian information criterion [BIC]), which generates the optimal number of clusters (Kent et al., 2014).

The BIC selects the “best” cluster solution, smaller BIC values indicating better models. A further advantage of the two-step cluster analysis is that it identifies which combinations are important from the many that are logically possible in the data, and identifies the types empirically rather than imposing them from an a priori scheme (thus avoiding the arbitrariness in traditional clustering techniques) (Kent et al., 2014). The optimal number of clusters was determined based on the silhouette coefficient (range -1 to 1). Once the clusters had been created, the differences between the risk variables, socio-demographic, criminological, psychological and psychiatric factors/vulnerabilities were analyzed. For this purpose, Chi² tests between the two clusters were performed for categorical variables (e.g., age of the victim: minor vs. adult), and Mann–Whitney U tests were performed for continuous variables (e.g., participants’ age) that did not follow a normal distribution. The significance level used was $p < .05$.

Results

Descriptive Results

Descriptive results of the risk scales. All the descriptive results of the scales are presented in Table 1.

Descriptive results of psychological and psychiatric scale scores. Mean scores on the psychological scales, and specifically the BFI-fr scale, were 3.0 ($SD = .8$; 1.37–4.75) for Extraversion, 3.9 ($SD = 0.5$; 2.50–4.90) for Agreeableness, 3.9 ($SD = 0.6$; 2.22–5.00) for Conscientiousness, 2.9 ($SD = 0.8$; 1.13–4.50) for Neuroticism, and 3.4 ($SD = 0.6$; 1.80–4.60) for Openness. A mean score of 94.9 ($SD = 13.9$; 72–123) was obtained for the total UPPS. On the Bumbly scales, mean scores were 57.3 ($SD = 12.8$; 36–81) for the Rape Scale and 64.9 ($SD = 15.64$; 38–111) for the Molest Scale. On the BES, mean scores were 65.0 ($SD = 26.7$; 0–95). Finally, a mean score of 10.7 ($SD = 2.8$; 6–16) was obtained on the SDS-17. A majority of the sample had experienced a past ($n = 72$; 86.7%) and/or current ($n = 64$; 77.1%) psychiatric disorder.

Cluster composition. Using the scores obtained on the subscales of the three risk scales, two clusters were identified. Participants in the “Higher needs” cluster, comprising 36% ($n = 32$) of the sample, had significantly higher risk scores on all three scales, and those in the “Lower needs” cluster, comprising 64% ($n = 54$) of the sample, had the lowest risk scores (Silhouette coefficient = 0.4; BIC index = 1309.53; ratio size = 1.00). Only the “History of sexual violence” (RSVP) and “Companions” sub-domains showed no significant differences between the two groups. The overall results are presented in Table 1.

Table 1. Descriptive results of the RSVP, HCR-20 and LS/CM1 risk scales.

| Risk scales | Mean | SD | Median | Min | Max | Cluster 1 | | Cluster 2 | | U | p |
|--------------------------------------|------|------|--------|-----|-----|-------------|-------------|-------------|--------|---|---|
| | | | | | | n = 32; 36% | | n = 54; 64% | | | |
| | | | | | | M [SD] | M [SD] | M [SD] | M [SD] | | |
| RSVP total score | 48.6 | 15.8 | 15 | 15 | 80 | 65.2 [7.7] | 38.7 [10.0] | 17.00 | *** | | |
| Total score | 19.1 | 6.4 | 5 | 5 | 34 | 24.4 [4.6] | 16.0 [5.2] | 183.50 | *** | | |
| Total-past items | 14.4 | 6.2 | 2 | 2 | 29 | 20.8 [3.8] | 10.6 [3.7] | 31.00 | *** | | |
| Total-recent items | 15.1 | 5.3 | 2 | 2 | 25 | 20.0 [3.3] | 12.2 [3.8] | 100.50 | *** | | |
| Total- relevant items | 5.8 | 3.4 | 0 | 0 | 15 | 6.3 [3.8] | 5.5 [3.2] | 789.00 | ns | | |
| History of sexual violence | 15.5 | 5.5 | 3 | 3 | 30 | 10.1 [4.6] | 13.3 [4.9] | 345.00 | *** | | |
| Psychological adjustment | 9.8 | 4.6 | 1 | 1 | 23 | 13.4 [4.8] | 7.7 [2.9] | 273.00 | *** | | |
| Mental disorder | 11.6 | 5.6 | 0 | 0 | 23 | 16.8 [3.6] | 8.4 [3.8] | 94.50 | *** | | |
| Social adjustment | 6.0 | 4.2 | 0 | 0 | 17 | 10.0 [3.2] | 3.8 [3.2] | 174.50 | *** | | |
| HCR-20 total score | 13.4 | 6.7 | 2 | 0 | 27 | 20.3 [4.2] | 9.3 [3.8] | 58.00 | *** | | |
| Historical | 6.6 | 4.4 | 0 | 0 | 16 | 10.9 [3.4] | 4.0 [4.0] | 101.00 | *** | | |
| Clinical | 3.0 | 2.0 | 0 | 0 | 8 | 4.7 [1.6] | 1.9 [1.4] | 190.00 | *** | | |
| Risk | 3.4 | 2.0 | 0 | 0 | 9 | 4.8 [1.6] | 3.4 [2.1] | 504.00 | ** | | |
| LS/CM1 total score | 15.6 | 6.4 | 4 | 3 | 33 | 21.9 [4.2] | 12.0 [4.3] | 82.50 | *** | | |
| Criminal history | 3.5 | 1.9 | 0 | 0 | 8 | 5.0 [1.6] | 2.6 [1.5] | 247.00 | *** | | |
| Education and employment | 3.1 | 2.4 | 0 | 0 | 9 | 4.6 [1.9] | 2.1 [2.2] | 327.00 | *** | | |
| Family/marital | 2.3 | 1.6 | 0 | 0 | 13 | 2.7 [0.8] | 2.0 [1.9] | 534.00 | ** | | |
| Leisure and recreational activities | 0.8 | 0.8 | 0 | 0 | 4 | 3.0 [0.5] | 2.6 [0.9] | 634.50 | * | | |
| Companions | 2.3 | 0.8 | 0 | 0 | 2 | 1.0 [0.8] | 0.6 [0.7] | 714.00 | ns | | |
| Drug or alcohol problems | 1.2 | 1.7 | 0 | 0 | 8 | 2.2 [1.8] | 0.6 [1.3] | 347.50 | *** | | |
| Pro-criminal attitude or orientation | 1.2 | 1.0 | 0 | 0 | 4 | 1.7 [1.0] | 0.8 [0.8] | 416.00 | *** | | |
| Antisocial pattern | 1.0 | 1.0 | 0 | 0 | 3 | 1.8 [1.0] | 0.6 [0.7] | 288.00 | *** | | |

Note. RSVP: Risk for Sexual Violence Protocol; HCR-20: Historical Clinical Risk-20; LS/CM1: Level of Service/Case Management Inventory.

Socio-demographic and criminological factors of clusters. The two clusters differed in age and education. Participants in the “Higher needs” cluster were significantly younger than those in the “Lower needs” cluster (respectively, $M = 42.6$, $SD = 10.6$ vs. $M = 47.5$, $SD = 10.9$; $U=646.50$; $p < .05$) and less educated (respectively, $M = 9.2$ years, $SD = 2.8$ vs. $M = 10.7$, $SD = 2.4$; $U=576.00$; $p < .01$).

No significant difference was observed between the “Higher needs” and “Lower needs” clusters with regard to length of sentence ($M = 137.6$ months, $SD = 70.6$ vs. $M = 128.7$, $SD = 68.2$, respectively; $U=814.00$; *ns*) and length of sentence served ($M = 62.1$, $SD = 45.1$ vs. $M = 60.50$, $SD = 57.8$, respectively; $U=791.00$; *ns*). The participants in the “Higher needs” cluster had assaulted significantly more adults than those in the “Lower needs” cluster (respectively, $n = 20$, [62.5%] vs. $n = 7$ [13%]; $\chi^2 = 22.89$; $p < .001$) and more extra-familial members (respectively, $n = 19$ [59.4%] vs. $n = 12$, [24.1%]; $\chi^2 = 10.72$; $p < .001$). Compared to the “Higher needs” cluster, the victims of the “Lower needs” cluster were more frequently minors (respectively, $n = 2$ [6.3%] vs. $n = 47$, [87%]; $\chi^2 = 22.89$; $p < .001$) and intra-family members (respectively, $n = 13$ [40.6%] vs. $n = 41$, [75.9%]; $\chi^2 = 10.72$; $p < .001$). No significant differences were observed between higher and lower needs clusters regarding the gender of the victims: male victims (respectively, $n = 2$ [6.7%] vs. $n = 7$ [13%]; $\chi^2 = 1.01$; *ns*) and female victims (respectively, $n = 28$ [87.5%] vs. $n = 43$ [86%]; $\chi^2 = 1.01$; *ns*).

Psychological and psychiatric vulnerabilities of clusters. Regarding personality, the participants in the “Higher needs” cluster had lower Conscientiousness scores and higher Neuroticism scores than those in the “Lower needs” cluster. They also had lower scores for general empathy, and particularly cognitive empathy (total BES). On the other hand, no difference was observed between the two clusters concerning impulsivity (UPPS Total), cognitive distortions about adult women (Rape scale), cognitive distortions about children (Molest scale), or social desirability (SDS-17). All the results are presented in [Table 2](#).

The participants in the “Higher needs” cluster had a more frequent history of past and present psychiatric disorders than those in the “Lower needs” cluster. Significant differences for all psychiatric disorders, except for past anxiety, obsessive and phobic disorders and psychotic disorders were found between the two groups (see [Table 3](#) for more details).

Discussion

The aim of this study was to identify recidivism risk profiles of men sentenced for sexual violence based on their criminogenic needs, and to study their differences in terms of sociodemographic and criminological factors on the one hand, and psychological and psychiatric vulnerabilities on the other. Two

Table 2. Comparison of the two clusters according to psychological characteristics.

| Psychological characteristics | Higher Criminogenic Needs | | Lower Criminogenic Needs | | U | p | Ranking |
|-------------------------------|---------------------------|-------------|--------------------------|-----------|-------------|---|---------|
| | M [SD] | M [SD] | M [SD] | M [SD] | | | |
| Extraversion | 3.0 [0.7] | 3.1 [0.8] | 816.00 | ns | - | | |
| Agreeableness | 3.9 [0.5] | 3.8 [0.4] | 759.00 | ns | - | | |
| Conscientiousness | 3.7 [0.6] | 4.0 [0.5] | 642.00 | * | Cl.1 < Cl.2 | | |
| Neuroticism | 3.2 [0.7] | 2.8 [0.8] | 597.50 | * | Cl.2 < Cl.1 | | |
| Openness | 3.3 [0.6] | 3.5 [0.6] | 719.00 | ns | - | | |
| UPPS-total | 98.0 [12.4] | 94.0 [14.4] | 74.50 | ns | - | | |
| Lack of premeditation | 20.1 [7.0] | 20.9 [6.1] | 89.00 | ns | - | | |
| Lack of perseverance | 18.1 [5.3] | 17.4 [3.8] | 87.50 | ns | - | | |
| Urgency | 31.6 [5.4] | 27.7 [7.5] | 55.00 | ns | - | | |
| Sensation seeking | 28.1 [5.1] | 28.0 [6.0] | 94.00 | ns | - | | |
| Bumby rape (total) | 60.7 [14.0] | 52.2 [9.1] | 84.50 | ns | - | | |
| Bumby molest (total) | 62.7 [15.8] | 65.3 [15.7] | 172.00 | ns | - | | |
| BES total | 50.1 [35.0] | 70.2 [21.7] | 81.00 | * | Cl.1 < Cl.2 | | |
| Emotional empathy | 26.5 [18.5] | 36.8 [12.2] | 89.50 | ns (0.07) | - | | |
| Cognitive empathy | 23.6 [16.6] | 33.3 [10.1] | 82.50 | * | Cl.1 < Cl.2 | | |
| SDS-17 | 10.7 [2.5] | 10.7 [2.9] | 92.50 | ns | - | | |

Note. ns: non-significant; *p < .05; **p < .01; ***p < .001; Cl.: Cluster; BFI: Big Five Inventory; UPPS: Impulsive Behavior Scale; BES: Basic Empathy Scale; SDS-17: Social Desirability Scale-17.

Table 3. Comparison of the two clusters according to psychiatric characteristics.

| Psychiatric characteristics | Higher Criminogenic Needs | | Lower Criminogenic Needs | | χ^2 | <i>p</i> | Ranking |
|---|---------------------------|-------|--------------------------|-------|----------|----------|-------------|
| | n | % | n | % | | | |
| Presence of past psychiatric pathology | 31 | 96.9% | 41 | 78.8% | 7.56 | ** | Cl.2 < Cl.1 |
| Presence of current psychiatric pathology | 30 | 96.8% | 34 | 65.4% | 10.84 | *** | Cl.2 < Cl.1 |
| Current mood disorders | 18 | 56.3% | 13 | 24.1% | 9.02 | ** | Cl.2 < Cl.1 |
| Past mood disorders | 26 | 81.3% | 30 | 55.6% | 5.84 | ** | Cl.2 < Cl.1 |
| Suicidal risk | 7 | 22.6% | 8 | 15.4% | 21.10 | *** | - |
| | Low | | 0 | 0% | | | Cl.2 < Cl.1 |
| | Medium | | 5 | 9.6% | | | Cl.2 < Cl.1 |
| | High | | 11 | 35.5% | | * | Cl.2 < Cl.1 |
| Current anxiety, obsessive and phobic disorders | 16 | 50% | 15 | 27.8% | 4.31 | * | - |
| Past anxiety, obsessive and phobic disorders | 19 | 59.4% | 28 | 51.9% | 0.46 | ns | - |
| Current dependency | 7 | 21.9% | 0 | 0% | 12.86 | *** | Cl.2 < Cl.1 |
| Past dependency | 21 | 65.6% | 13 | 24.1% | 14.51 | *** | Cl.2 < Cl.1 |
| Psychotic disorders | 6 | 18.8% | 3 | 0.6% | 3.73 | ns | - |
| Presence of antisocial personality disorder | 18 | 58.1 | 7 | 13.7% | 17.89 | *** | Cl.2 < Cl.1 |

Note. ns: non-significant; **p* < .05; ***p* < .01; ****p* < .001.
PTSD: Post-Traumatic Stress Disorder.

profiles emerged, with a “Higher needs” group representing approximately a third of the participants, and a “Lower needs” group representing 2/3 of the sample, differing significantly on almost all the risk factors for recidivism; the participants in the “Higher needs” group were younger and less educated, had lower levels of Conscientiousness, more Neuroticism, less general (and particularly cognitive) empathy, and more past and present psychiatric disorders.

This study yielded a dichotomous classification of men sentenced for sexual violence, unlike the previously mentioned studies. In the present study, we used three risk scales, increasing the number of risk indicator variables, which may explain the more clear-cut nature of our results. The “Higher needs” cluster comprised one third of our sample, which means that one third of the participants were at higher risk of recidivism in general. This finding can be compared with the actual general recidivism rate reported among men sentenced for sexual violence (Hanson & Morton-Bourgon, 2005).

Participants in the two clusters differed significantly in terms of their general violent and criminal history, but not in terms of their history of sexual violence. The “Sexual violence history” subdomain of the RSVP has five items that describe past, present and future sexual offences. In our study, this factor does not differentiate the “Higher needs” from the “Lower needs” group, indicating that the participants’ past and present sexual offences were relatively similar. Although the history of sexual violence and the type of the current act are strong risk factors (Hanson & Bussiere, 1998), they alone do not indicate whether or not there is a risk. It is rather the concomitance of specific and general risk factors that seems to potentiate the risk, which underlines the need to assess all the risk factors with precision, with the help of the latest generation of structured tools, and to adapt the choice of tools to the type of recidivism that one wishes to assess, understand and prevent. No difference was observed in the “Companions” sub-domain of the LS/CMI either, which can be explained by the fact that all the participants were incarcerated at the time of the tests, and consequently they all only associated with other incarcerated people.

Participants in the “Higher needs” cluster were younger, had more adult and extra-familial victims and were less educated. These results are consistent with established data on risk variables. Age and education are known risk factors for both sexual and non-sexual recidivism among men who have committed sexual violence (Eisenberg, 1997; Ennis et al., 2014; Hanson, 2002).

Finally, men who had abused adults and extra-familial victims more often belonged to the “Higher needs” cluster. This result is consistent with certain epidemiological studies that show higher sexual, violent and general recidivism rates for men who have sexually abused adults (e.g., for sexual recidivism: 13% of men who have sexually molested child vs. 21.2% who have

sexually abused women over a 5-year period; Proulx et al., 1997). Finally, men who have sexually molested intra-familial children often have low levels of recidivism risk (Hanson, 2002).

Psychologically, certain personality dimensions and the presence of empathy seem to distinguish the two profiles. Participants in the “Higher needs” cluster had higher scores on Neuroticism and lower scores on Conscientiousness. Neuroticism involves a tendency to experience negative emotions, such as anxiety and depression (John et al., 1991), which in turn are linked to recidivism. In particular, negative feelings over time (non-pathological) are likely to be heightened at the time of offending (Hudson et al., 1993). Experiencing negative emotions is considered an indicator of lack of self-control (Hanson et al., 2007) and therefore an indicator of delinquency, a factor common to sexual, violent and general recidivism risks (Brouillette-Alarie et al., 2018). Although Neuroticism is more common in men who have sexually molested children because it is linked to pedophilic disorder (Gingrich & Campbell, 1995), it is also linked to personality disorders (De Fruyt et al., 2008), which are mostly found in men who have sexually abused adults (Eher et al., 2019) and who often have few ties with their victims. The Conscientiousness trait refers to control and achievement of a set goal, and attachment to ethical or moral principles (John et al., 1991). Lack of Conscientiousness therefore refers to a tendency towards impulsivity (Dennison et al., 2001), short-term goal-seeking and an inability to consider the consequences of one’s actions (Lange et al., 2017). There are well-established links between impulsivity and sexual (Prentky & Knight, 1991), violent (Hanson et al., 2007), and general anti-social behavior (Miller & Lynam, 2001). Furthermore, impulsivity is more often found in men who sexually abuse extra-familial adult victims, and who show more antisocial and externalizing behaviours (Martorell, 2001). The lower level of Conscientiousness (which reflects a higher level of impulsivity) differentiates the two groups, whereas the level of impulsivity, as assessed by the UPPS, was similar. This result may be explained by the fact that Conscientiousness is a personality dimension that results from a general and lasting functioning, whereas impulsivity as assessed by the UPPS reflects primarily a behavioral reaction to experiences (see its “Sensation seeking” and “Urgency” subscales). Mao et al. (2018) showed that self-control was an important mediator between low Conscientiousness and impulsivity. High-risk participants have lower Conscientiousness but probably more self-control, which induces less impulsivity and thus no difference in the impulsivity scale. The prison setting could reinforce self-control through fear of the consequences of impulsivity (placement in the disciplinary ward, reduction in sentence remission, etc.).

Finally, participants in the “Higher needs” cluster showed a lack of general empathy and particularly cognitive empathy. Although the links between empathy and recidivism are unclear, a study with a sample of male students

found that high empathy skills were linked to lower frequency of sexual assault of adult women (Hudson-Flege & Thompson, 2017). Lack of cognitive empathy is thought to be linked to a “disconnection” with others, in other words, a feeling of non-support from others, or even persecution (Koeogl, 2021). The meta-analysis by Jolliffe and Farrington (2004) showed that cognitive empathy in particular is more strongly and negatively related to delinquency. Furthermore, moral judgment (the basis of empathy), and in particular its cognitive valence, is correlated with the recidivism of violent offenders (Van Vugt et al., 2011).

Psychiatrically, participants in the “Higher needs” cluster had more past and current mood disorders, current anxiety, obsessive and phobic disorders and past and current dependency disorders. The links between psychiatric disorders and the risk of recidivism remain poorly understood. Some studies report no association (e.g., Langström et al., 2004), others show a moderate association (e.g., Mann et al., 2010), and still others a highly significant association (e.g., Singer et al., 2013). More specifically, some disorders are more directly related to risk, like alcohol and drug-related disorders, personality disorders (especially cluster B) and psychosis, and increase the risk of sexual recidivism (Langström et al., 2004). These results vary according to (i) the age of the perpetrator (the younger the sexual offender, the stronger the link between the disorder and recidivism), and (ii) the age of the victim (Langström et al., 2004). Contrary to some research findings (Singer et al., 2013), severe psychiatric disorders (such as psychotic disorders) did not differ between groups in the present study, which may be explained by their underrepresentation in our sample. However, this also means that a significant proportion of the high-risk participants in our study did not have psychotic disorders, contrary to certain preconceived ideas (Corrigan & Watson, 2005). Here, other disorders, considered less severe, were associated with a high risk of recidivism, such as past and present mood, and current anxiety, obsessive and phobic disorders. Depression, anxiety and suicidal risk are not in themselves a criminogenic need, but rather an acute risk factor, in other words, a factor or state activated by specific situations (Craissati & Beech, 2003). These factors precipitate a pre-existing risk. These disorders may be reinforced by the presence of higher Neuroticism (trait), which constitutes a pre-existing base of sensitivity to negative emotions, which potentiates the development of mood and anxiety disorders. The lack of a significant difference between risk and current alcohol dependence may be directly related to the prison environment, in which alcohol consumption is made more difficult and therefore fosters more systematic withdrawal.

Several limitations of this study should be noted. First, the small sample size, due to difficult access to the prison population, may have limited the analyses and their statistical power (in particular cluster analysis which requires large samples). The participants were all detainees and represent only

the proportion of men committing sexual violence who have been sent for trial (e.g., [Bajos et al., 2008](#)). Nevertheless, compared to other studies, the current sample had higher mean total scores for sexual recidivism risk ($M=26.47$ for [Vargen et al., 2020](#); $M=27.30$ for [Sea & Hart, 2020](#)) but lower mean total scores for violent ($M=23.30$ for [Claix & Pham, 2004](#); $M=16.76$ for ([Douglas & Webster, 1999](#)) and general risk ($M=21.1$ for [Guay, 2016](#); $M=19.75$ for [Gordon et al., 2015](#)). It is possible that men with low sexual risk are only marginally represented in this study. This limits the identification of clusters of low sexual risk and/or high violent and general risk populations. The participants were all assessed in a prison setting, which (i) limits the assessment of recidivism risk (as certain risk factors cannot be observed; [Beech & Ward, 2004](#)), and (ii) may have an impact on their current psychological state with higher rates of psychiatric disorders ([Kumar & Daria, 2013](#)). Although the RSVP could be a valuable tool in the recognition and management of sexual recidivism risk for therapists working in forensic and therapeutic settings, its internal consistency has not been examined. In addition, psychological factors were assessed with self-report questionnaires, reflecting the offenders' subjective perception of themselves. Self-report assessments may have some biases, due for example, to poor comprehension of the items, which would have required checking the participants' intellectual abilities. Finally, as with any study of a cross-sectional nature, inferences of direction of effect and causality are limited and therefore restrict our ability to understand the mechanisms underlying the pathway from psychological factors and vulnerabilities to recidivism risk.

Clinical Implications

The results of this study show that criminogenic needs coexist with psychiatric disorders and non-criminogenic needs. The latter should be considered when assessing individuals with high recidivism risk levels in order to optimize management. Past and present psychiatric disorders should be considered as they can be acute risk factors, increasing risk (through their catalytic effect on criminogenic needs; [Langström et al., 2004](#)), hindering or enhancing management (e.g., non-compliance with treatment or, on the contrary, confidence in therapy due to effective previous management; [Lee & Hanson, 2016](#)). Finally, psychological factors (non-criminogenic needs) may not have a direct influence on recidivism but a significant influence on responsivity to intervention. This is the case for the effectiveness of the proposed treatment ([Barnett et al., 2013](#); [Toop et al., 2019](#)). For example, therapy can be personalized by taking personality traits into consideration, in accordance with the RNR model (e.g., cognitive and behavioral therapies would be the most suitable for patients with a higher level of neuroticism because they will preferentially treat the irrational thoughts that are very present in these patients; [Center & Kemp, 2003](#)).

The issue of risk classification is not new. Some risk scales classify individuals according to level of risk (e.g., the HCR-20 proposes three levels of violent risk: low, moderate, and high; the LS/CMI proposes five levels of general risk: very low, low, moderate, high and very high). However, the present study proposes a factor-based classification of three types of risk: sexual, violent, and general. It would then be possible, in a first evaluation phase, to identify globally the high and low risk individuals, in order to respect the Risk principle of the RNR model. For high-risk individuals, a second assessment phase would allow (i) to identify the specific type of risk to be feared (sexual, violent, and/or general) and (ii) to identify their criminogenic needs (with the help of already existing standardized risk tools) and non-criminogenic needs, in order to respond to the RNR model's principles of Needs and Responsivity (adapting the treatment to the individual's non-criminogenic needs, such as a psychiatric disorder or certain personality traits).

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