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THE PREDICTIVE VALIDITY OF THE RISK SCREENER VIOLENCE (RS-V) FOR ADULTS IN PRISON REGARDING POSTRELEASE VIOLENT RECIDIVISM: A FILE-BASED STUDY

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Within the prison system, it is often not feasible to administer comprehensive risk assessment for all incarcerated persons because of limited time and resources. To enhance prison safety and facilitate the structured evaluation of concerns about violence risk for all individuals, the Risk Screener Violence (RS-V) was developed. The goal of this study was to evaluate whether the RS-V ($N = 571$) is able to retrospectively predict postrelease violent (re)offending for males (81%) and females (19%). The RS-V was scored with excellent interrater reliability and demonstrated medium to large predictive validity for all follow-up periods. Surprisingly, the predictive validity for females was even stronger than for males. This study demonstrates that the RS-V offers a promising new method for the efficient screening of concerns regarding violent behavior among incarcerated males and females. Further prospective studies in prison practice will have to consolidate these findings.

Keywords: violence risk assessment; prison; recidivism; gender differences; predictive validity

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INTRODUCTION

The reoccurrence of criminal behavior is a widely known problem within society as well as within the prison system. Worldwide, reconviction rates range from 20% to 63% within 2 years after release from prison (Yukhnenko et al., 2020). Within the Netherlands, almost half (47%) of the ex-detainees is reconvicted for criminal activity within 2 years postrelease, while 27% is also reincarcerated (Dutch Custodial Institutions Agency, 2022). The prevention of reoffending by ex-detainees requires ongoing attention from governmental institutions and the criminal justice system, especially when it comes to violent crimes, as these types of crimes have a great impact on victims and society at large. The goal of the current study is to investigate the extent to which a newly developed risk screening tool is able to predict actual violent (re)offending. If this is the case, application of the tool could offer improved insight regarding violence risk and contribute to violence prevention.

RISK ASSESSMENT WITHIN THE PRISON SETTING

To counteract and prevent future (violent) criminal behavior, custodial settings use risk assessment instruments to estimate the likelihood of an individual committing a new offense. These instruments generally contain risk factors that are known to be associated with the occurrence of criminal behavior, and in particular violent behavior (Bonta & Andrews, 2016). Risk assessment instruments are often composed of static risk factors, historical vulnerabilities unchangeable through intervention such as past offenses and age at first offense, and dynamic risk factors, changeable through intervention such as substance misuse and impulsivity (Plaisier & Van Ditzhuijzen, 2008). Commonly used risk assessment instruments within prisons are, for example, the Level of Service/Case Management Inventory (LS/CMI; Andrews et al., 2004), aimed at general recidivism, and the Historical, Clinical, Risk Management Version 3 (HCR-20^{V3}; Douglas et al., 2013), which is specifically aimed at determining the risk of violence. Other comprehensive tools frequently used in the prison system that exclusively focus on predicting violence are the Violence Risk Scale (VRS; Wong & Gordon, 2006), and the Violence Risk Appraisal Guide (VRAG; Harris et al., 1993).

Besides risk factors, protective factors have become widely used for gaining a more complete overview of the risk level of an offender. Protective factors are assumed to be associated with a decrease of offending (De Vogel et al., 2012) and are deemed vital for an accurate evaluation of risk (De Vries Robbé & Willis, 2017). An increasingly commonly used risk assessment instrument, both in forensic psychiatry and within prison settings, that exclusively focuses on measuring protective factors is the Structured Assessment of Protective Factors for violence risk (SAPROF; De Vogel et al., 2012). A recent meta-analysis showed that its protective factors have incremental predictive validity when used in combination with a risk-focused tool (Burghart et al., 2023). Therefore, the SAPROF is often administered in conjunction with the HCR-20^{V3} or the LS/CMI, to create a comprehensive assessment of risks and strengths for each individual. Another example of an integrated focus on risks and strengths is the Short-Term Assessment of Risk and Treatability (START; Webster et al., 2004), which is applied for short-term risk evaluations in forensic psychiatry.

Conducting risk evaluation, on one hand, increases insight into underlying and sometimes persistent criminogenic factors of an individual and, on the other hand, contributes to

the prediction of future offending. For risk evaluation tools to be useful for violence prevention, a sound predictive validity is required. If this is the case, practitioners are able to make more accurate and reliable judgments regarding the potential risk of future offending. Subsequently, they are able to make suitable decisions regarding the implementation of individually tailored interventions to prevent recidivism. Structured risk evaluation is, therefore, an important tool in achieving one of the main goals of imprisonment, reducing recidivism, because it aims to differentiate between high-risk offenders and low-risk offenders (Bonta & Andrews, 2016). Most of the comprehensive risk assessment instruments used within prison settings are validated and are able to predict both community violence and institutional violence (Campbell et al., 2009).

Risk assessment tools are an important element of risk management. However, within the Dutch prison system, it is often not feasible to administer comprehensive risk assessment for all individuals because of limited time and resources (Russo et al., 2020). For instance, 69% of the individuals incarcerated in a Dutch prison are released within 3 months, which makes time-consuming risk assessment difficult (Dutch Custodial Institutions Agency, 2022). In addition, risk assessment instruments need to be conducted by a trained behavioral professional (i.e., a psychiatrist or psychologist), while most employees within prisons are not equipped with the required behavioral expertise (Russo et al., 2020). As a result, comprehensive risk assessment is rarely carried out within the Dutch prison system. In-depth risk assessment is only applied for the relatively small group of individuals who reside within specialized units for psychiatrically disordered individuals, and for individuals who are transferred to forensic psychiatric care after their prison stay. In addition, extensive risk assessment might be conducted when leaves are proposed and/or serious concerns exist regarding internal or external safety. However, for most individuals within the prison setting, conducting comprehensive risk assessment is simply not realistic. Besides not being feasible, gaining in-depth knowledge into a wide variety of possible risk and protective factors may not always be necessary and efficient for each detained person.

RISK SCREENING INSTRUMENTS

Nonetheless, regardless of the detention duration, the time individuals spend in prison offers a window of opportunity to intervene and offer support to diminish the likelihood of future violent incidents and recidivism. To achieve the safe rehabilitation of ex-detainees, it is highly beneficial to gain insight into the most important risk and protective factors for each individual. Given the mentioned challenges regarding the use of comprehensive risk assessment, conducting simplified risk screening instruments may provide a more suitable alternative to realistically accomplish this for all individuals in prison practice.

Screening instruments are designed to give a first general indication of the presence of a certain condition or problem and they do not necessarily underperform compared with more extensive instruments (Gray et al., 2007; Nicholls et al., 2004; Roaldset et al., 2012). Screening instruments that have been specifically developed for screening prison populations are, for instance, the Jail Screening Assessment Tool (JSAT; Grisso, 2006), aimed at screening for mental illness, and the UNCOPE, which screens for alcohol and drug dependencies (Campbell et al., 2005). In addition, there are some recidivism risk screening instruments available for use within correctional facilities. For example, the Level of Service Inventory–Revised risk assessment instrument also has an actuarial purely risk screening

version for general criminality (LSI-R:SV; Andrews & Bonta, 2001), the actuarial Dynamic Appraisal of Situational Aggression (DASA) can be applied for screening the acute risk of imminent violence (Ogloff & Daffern, 2006), and the VRS–Screener Version (VRS-SV; Wong & Gordon, 2007), and a later suggested even more compact version thereof (Ogloff et al., 2018), comprise short variations of the more elaborate actuarial risk-focused VRS for the assessment of violent reoffending. However, after careful consideration, these instruments were not deemed suitable for widespread use within the Dutch prison system for the purpose of initial risk screening for violence.

The mentioned risk screening instruments each have their own specific features, advantages, and shortcomings, which have been considered carefully in light of the Dutch prison context. An important consideration in this regard is that the prison setting within the Netherlands is currently attempting to establish a culture shift toward a more recovery and rehabilitation focused approach. Therefore, a focus on strengths as well as risks is deemed important for risk evaluations within this context. In addition, in an attempt to improve shared decision-making and a common understanding of important risk and protective factors among Dutch prison workers, risk screening should ideally incorporate a Structured Professional Judgment (SPJ) approach, where consensus regarding the final conclusions of the screening is drawn in a multidisciplinary way. For more information on the assumptions of SPJ and the grounds for these assumptions, see the study by Hart and colleagues (2017). Moreover, as most Dutch prisons are large institutions that employ few behavioral experts, risk screening should be fairly simple and, therefore, feasible to administer by general prison workers. Finally, because the prevention of future violent offending is one of the primary aims in achieving a safe prison ward climate and safe societal reintegration, using a risk screening instrument that specifically focuses on the prediction and prevention of violent behavior is deemed important within the prison population. None of the existing risk screeners complies with all of these requirements. Therefore, it was decided to develop a new violence risk screener for this specific purpose.

THE RISK SCREENER VIOLENCE

To facilitate the structured initial and periodic evaluation of violence risk for all Dutch adult incarcerated individuals, a new and easy-to-administer risk screening tool was developed in the Netherlands in 2020 (De Vries Robbé & Van den End, 2020). This instrument, the Risk Screener Violence (RS-V), which includes both risks and strengths, is administered based on the SPJ approach. The SPJ approach allows assessors (i.e., prison workers), based on their own professional expertise and gathered knowledge about the case at hand, to evaluate which specific factors are most important for the individual and subsequently draw conclusions about concerns regarding violent behavior (including sexual violence; De Vries Robbé & Van den End, 2020). This means that for some individuals certain factors may weigh more heavily or moderately than for other individuals. This process of drawing conclusions regarding concerns about future violence is carried out in a multidisciplinary consensus manner during periodic evaluation meetings.

Importantly, the RS-V is not an extensive risk assessment instrument, but a brief risk screening tool, which offers a first impression of the most important risk factors (e.g., Previous interpersonal violence outside prison and Substance use) and protective factors (e.g., Following rules and agreements and Motivation crime free future). As the RS-V can

be conducted for all incarcerated persons, it aims to promote internal safety within prison as well as external societal safety during leaves and after discharge. In addition, the results of the RS-V may guide decision-making regarding granting temporary leave or the placement of individuals within the prison system (e.g., lower vs. higher security). Furthermore, by flagging up individuals with serious concerns about future violent behavior, the RS-V may serve as triage to indicate whether an individual is in need of extensive risk assessment. Finally, the RS-V aims to improve the application of personalized interventions, facilitate the communication about risk levels with collaborating agencies (e.g., probation services) or aftercare facilities, and promote the conversation with detained individuals regarding interventions to improve their personal risk and protective factors. By discussing the results of the screening during a multidisciplinary team meeting, prison workers are also able to discuss individual risk management and follow-up measures.

The results of a pilot study that ran within seven Dutch prisons were promising. Namely, the total score of the RS-V pilot version was rated by regular prison workers with an excellent interrater reliability (intraclass correlation coefficient [ICC] = .80), and showed a medium predictive validity for violent (re)offending within 6 months after release (area under the curve [AUC] = .68) in a retrospective study, and large predictive validity for violent incidents during a 4-month follow-up within prison (AUC = .82) in a prospective study (De Vries Robbé et al., 2021). After these positive results, it was decided to implement the RS-V nationally across all Dutch prisons. As the tool is now being used widely, ongoing large-scale evaluation of the tool is deemed important. The current study is part of this larger validation project, which aims to examine the validity of the final version of the RS-V for both males and females incarcerated in prison.

The majority of validation research regarding risk assessment instruments focuses on male populations. This is problematic, as the number of women in prison worldwide is increasing (De Vogel & Nicholls, 2016; Walmsley, 2006), and previous research is inconclusive about the question whether risk assessment instruments are sufficiently able to predict (violent) recidivism among women (De Vogel et al., 2019; Geraghty & Woodhams, 2015). These studies highlight the importance of including female populations in research regarding risk assessment instruments, to find out whether existing approaches are equally applicable for women or if gender-specific versions are needed to successfully estimate the risk level of females.

THE CURRENT STUDY

The current study is the first validation study regarding the official published version of the RS-V, as implemented across all 25 Dutch prisons in 2021. Data were gathered in a retrospective file-based study, which means that the RS-Vs included in this study were rated by researchers based on file information of incarcerated individuals (both male and female) available in the prison records at the time of discharge. The current study will focus on the psychometric properties of the RS-V, in particular the degree of agreement among independent assessors that rate the RS-V (the interrater reliability) and the extent to which the RS-V is able to accurately predict future violent behavior, defined as postrelease violent (re)offending[1] (the predictive validity). Regardless of the sometimes limited file information present in prison records, based on the positive results of the pilot study (De Vries Robbé et al., 2021), an excellent interrater reliability is expected. Moreover, as screening instruments are not

necessarily less predictive than extensive risk assessment instruments, we expect the RS-V to show good predictive validity regarding future violent offending. Especially for violent offenses 6 months after release, sound predictive validity is expected because the final conclusions of the RS-V make predictions about the following 6 months. As the pilot study showed promising preliminary results with regard to gender differences, we anticipate that the RS-V has sufficient predictive validity for violent (re)offending for males as well as females. Considering this is the first validation study that examines the psychometric properties of the RS-V, an overview of the subscale scores, the total score (both solely calculated for research purposes), and the final conclusion regarding concerns about future violence (postrelease) will be included. Finally, implications of the findings for international prison practice and beyond will be discussed.

METHOD

PARTICIPANTS

The participants included in this study were incarcerated persons from 25 Dutch prisons. Participants were selected by means of a personal identification number, which is used within the Dutch prison system. A systematic sampling approach was used to select the male participants. For comparability reasons, and to include a sufficient number of females, we actively searched for females within the prison database. In contrast to the male sample, the female sample was, therefore, not completely randomly selected.

In total 1,925 detainee files (1,557 males, 368 females) were checked using the following inclusion criteria: The selected individuals needed to (a) be released from a Dutch prison between September 2014 and September 2017, (b) be formally convicted of the crime for which they received the corresponding prison sentence, and (c) have had a prison stay of at least 28 days, to have sufficient file information to complete the RS-V. With regard to the follow-up period and to be able to track whether ex-detainees reoffended or not, the following additional inclusion criteria applied: Participants needed to (d) remain in the Netherlands after being released; (e) not have passed away during the follow-up period; and (f) stay out of prison or a forensic clinic for at least half of the follow-up period (unless rearrested for a violent crime), so-called time-at-risk. Finally, if participants had more than two factors rated as "unknown" on the RS-V, they were excluded afterward.

The time-at-risk, as defined within this study, is the number of days an individual is at risk of committing a (new) violent crime within the community. Participants were excluded from participation if their time-at-risk was insufficient, that is, if they were reincarcerated for a nonviolent crime during the follow-up period and the corresponding prison sentence(s) lasted for more than half of the actual follow-up time. Separate incarcerations for nonviolent offenses during follow-up were added up to calculate the total time spent in prison during follow-up. This means that participants were excluded if they had a total detention time for committing a nonviolent crime of at least 3 months during the 6 months follow-up period, 6 months during the 12 months follow-up period, and 12 months during the 24 months follow-up period (see "Postrelease Violent (Re)offending" section).

The files of 571 detainees adhered to the inclusion criteria for analyzing violent (re) offending 6 months after release, of which 461 were male and 110 were female. For the follow-up periods of 12 and 24 months, respectively, a total of 559 (male = 451, female = 108) and 547 (male = 442, female = 105) incarcerated individuals adhered to the inclusion

criteria. The following characteristics apply for the group of ex-detainees included within the 6 months follow-up period: 76.9% committed a violent offense prior to detention (male = 85.0%, female = 42.7%), and 21.2% was a first-time detainee (male = 16.1%, female = 42.7%). The mean age upon release for the total group was 36 (*SD* = 10.85, range = 19–76) years old, for males 35 (*SD* = 10.67, range = 19–76) years old, and for females 37 (*SD* = 11.43, range = 19–67) years old. Participants had an average detention duration of 246 (*SD* = 300.70, range = 32–3,563) days. For males, this was 251 (*SD* = 322.40, range = 32–3,563) days, and for females 225 (*SD* = 183.41, range = 40–899) days.

THE RISK SCREENER VIOLENCE

The RS-V gathers information regarding the most relevant risk factors and protective factors of an individual incarcerated in prison, which subsequently leads to conclusions regarding the concerns about future violent behavior. Using the term "concerns" for the final conclusions rather than "risk" was explicitly chosen for semantic reasons. Although risk inherently also refers to uncertainty, concerns indicate even more clearly that the results from the screening assessment form an initial indication regarding the possibility of future violent behavior, based on the observed risk and protective factors at the time of screening. The RS-V uses the following definition of violence: attempting, threatening with, or actual physical violence toward others (including sexual violence). The RS-V has been developed for use within the entire prison population and may be implemented within different custody levels, for males as well as females. Within prison practice, the RS-V is conducted for each individual at the beginning of the detention period. In addition, it is advised to reassess the RS-V every 6 months and to conduct the RS-V when (longer-term) leaves during prison stay are proposed.

The RS-V consists of three parts, including 10 factors and three final conclusions (De Vries Robbé & Van den End, 2020). For an overview of all the factors that are included within the RS-V, see Table 1. The first part contains two historical risk factors, which are scored based on information about the entire past of an individual. The first historical factor is "previous interpersonal violence outside prison" (H1), which looks at all convictions for violent offenses (including sexual violence) that took place before the current prison sentence (including the index-offense). The second historical risk factor concerns "previous interpersonal violence inside prison" (H2) and contains information about all violent incidents that occurred within previous or current prison sentences. Both historical risk factors are rated on a 5-point scale: 0 = *no violent offense/incident*, 1 = *1 violent offense/incident*, 2 = *2 or 3 violent offenses/incidents*, 3 = *4 or 5 violent offenses/incidents*, or 4 = *6 or more violent offenses/incidents*. For the analyses in this study, the 5-point scale was collapsed into a 3-point rating scale (see "Statistical Design" section).

The second part of the RS-V consists of four dynamic risk factors (R1 to R4) and four dynamic protective factors (P1 to P4). These dynamic factors are scored based on behavioral observations of prison staff within the past 6 months. Within the RS-V, the dynamic factors are viewed as more stable dynamic factors rather than acute dynamic factors (Hanson & Harris, 2000). Both the dynamic risk factors and the dynamic protective factors are rated on a 3-point scale, where a higher score indicates the presence of a problem (risk factor) or the presence of a strength (protective factor). The first two dynamic risk factors are rated based on the frequency of the observations in the past 6 months (0 = "not observed," 1 = "observed once," and 2 = "observed twice or more"). The other dynamic risk factors and protective factors are scored using the following scale: 0 = *not or hardly present*, 1 = *moderately*

TABLE 1: The Historical Risk Factors, Dynamic Risk Factors, Dynamic Protective Factors, and Final Conclusions Included in the Risk Screener Violence

Part 1. Historical risk factors
H1. Previous interpersonal violence outside prison
H2. Previous interpersonal violence inside prison
Part 2. Dynamic factors (past 6 months in prison)
Risk factors
R1. Recent interpersonal violence
R2. Substance use
R3. Negative/defiant attitude
R4. Impulsive behavior
Protective factors
P1. Following rules and agreements
P2. Coping with problems and frustrations
P3. Positive influences from social network
P4. Motivation for crime free future
Part 3. Final conclusions (coming 6 months)
Concerns regarding future
A. Violence inside prison
B. Violence outside prison after release
C. Violence outside prison during leaves

present, or 2 = *clearly present*. Naturally, the rating of each factor is supported by sound argumentation, described by the assessor on the rating form. Additional violence related historic and dynamic information might be added if this is deemed relevant for the specific case. If there is not enough information available about an individual to score a certain historical or dynamic factor, this factor is indicated as "unknown." When more than two factors are rated as unknown, the RS-V is considered not valid and the third part (the final conclusions) cannot be completed (see the exclusion criteria in "Participants" section).

Within the third part of the RS-V, three conclusions are drawn regarding the final concerns about interpersonal violence during the following 6 months. This means that the RS-V is initially valid for a period of 6 months.[2] The final SPJ conclusions are based on the ratings and underlying arguments of the historical factors (Part 1) and dynamic factors (Part 2). The three final conclusions consider the risk of (A) in-prison violence, (B) postrelease violence, and (C) violence during leaves from prison (only rated in case of proposed leaves during prison stay). They are rated as 0 = "low concerned," 1 = "moderate concerned," or 2 = "serious concerned" about interpersonal violence in that specific context. Within the prison setting, consensus regarding the rating of the three final conclusions follows from a multidisciplinary team meeting including different prison workers (e.g., unit supervisors, case managers, prison officers, and administrators). In the current study, the final conclusions were drawn by researchers, individually or in consensus (for double rated cases, see "Procedure" section).

POSTRELEASE VIOLENT (RE)OFFENDING

The outcome measure used in this study is violent recidivism, defined as postrelease violent (re)offending within 6, 12, and 24 months after release from prison. The RS-V is

initially valid for 6 months. However, to be able to also investigate predictive validities for violent (re)offending at longer follow-up times, we decided to also include violent (re) offending within 12 and 24 months after release from prison. Data regarding postrelease violent (re)offending were gathered by using official criminal records, obtained from the judicial information service, part of the Dutch Ministry of Justice and Safety. Postrelease violent (re)offending is defined as at least one (new) conviction for a violent offense during follow-up (attempting to, threatening with, or actual physical violence toward others; including sexual violence). An offense was classified as "violent" based on the penal code section assigned to this offense within the detainee's criminal record. Only formal convictions were included; dismissals and acquittals were excluded.

The group of incarcerated females had a very low base rate for violent (re)offending at 6 months follow-up after discharge. As analyzing data with a low base rate may lead to inaccurate and unreliable predictions (Elwood, 1993), we could only include the follow-up periods of 12 and 24 months for the female group. The prevalence rates of violent (re) offending for respectively 6 ($n = 571$), 12 ($n = 559$), and 24 months ($n = 547$) were for (a) the total group: 7%, 15%, and 21%; (b) the male discharged detainees: 7%, 17%, and 24%; and (c) the female discharged detainees: 3%, 6%, and 9%.

PROCEDURE

The ethics committee of the Institute of Pedagogical Science of the University of Leiden gave approval for this study protocol (Reference Number: ECPW-2021/33). Data for this retrospective file-based study were collected between July 2020 and September 2022. The files of the detainees were studied within the central digital archive of the Dutch Ministry of Justice and Safety. The researchers ($n = 19$) involved in the data collection of this study were graduate students extensively trained in using the RS-V and analyzing outcome data.

In the current study, the RS-Vs were completed based on file information upon discharge. To prevent bias, analyzing the file information of an individual was conducted in two phases by two different researchers. The first phase of data collection consisted of four steps: (a) check whether a participant adhered to the inclusion criteria, (b) collect the demographic information, (c) map out the criminal history and recidivism (respectively, the offenses a participant committed before and after the prison stay that was examined in this study), and (d) score item H1 of the RS-V (based on official criminal records). The second phase of data collection was done by a different researcher. This was important in order for the rater to be blind to (re)offending outcomes. The second phase consisted of rating items H2, R1 to R4, P1 to P4, possibly additional relevant historic and dynamic information (such as psychological trauma or financial debt), and the final conclusions of the RS-V. The dynamic items were completed based on reports within the prison records regarding the last 6 months of the detention period (or less for detainees with a shorter detention stay). The reports included incidents that had taken place during prison stay, outcomes of substance use tests, and descriptions by prison staff regarding behavioral observations of the participant over the past 6 months. In prison practice, the three final conclusions follow from a multidisciplinary team meeting. Within the current study, the second researcher rated the final conclusions based on the collected file information (ratings and arguments for each of the RS-V factors, including H1, and possible additional relevant information). In the current study, only final conclusion B (concerns regarding violence after discharge) was included in the data analyses, as the outcome measure is postrelease violent (re)offending.

To assess the interrater reliability, a total of 89 (approximately 15% of the total sample) randomly selected RS-Vs were rated twice by a set of two researchers (14 independent researchers in total). Subsequently, a discussion between the two researchers led to a consensus rating for each factor and final conclusion for every case. The individual ratings were used for analyzing the interrater reliability and the consensus ratings were used in analyses regarding descriptive statistics and predictive validity.

STATISTICAL DESIGN

The data were analyzed using IBM SPSS Statistics version 27. Missing values were replaced through pro-rating: each missing value received the mean score on the corresponding subscales for the individual case. On average, 1 factor was missing per case. Most factors received less than 8% missing values. Only protective factor P3 (Positive influences social network) received a large number of missing values (78.5%), due to the file-based nature of the study, which often did not include sufficient information regarding the detainee's social network.

Within prison practice, only the final conclusions of the screening are used. However, for the purpose of the current empirical study, the subscale scores and total score of the RS-V were also calculated. These include the subscale score of the historical risk factors, the dynamic risk factors, the dynamic protective factors, and the total RS-V score. The historical risk factors were collapsed from a 5-point rating scale into a 3-point rating scale, to make them comparable with the dynamic factors. The ratings 1 to 2 were transformed into a score of 1 and ratings 3 to 4 into a score of 2. Subsequently, the historical and dynamic risk factors were added up while subtracting the dynamic protective factors, to arrive at an overall combined total score in which risk is corrected for protection. Thus, a more negative total score on the RS-V indicates a greater presence of protective factors in comparison with risk factors, while a more positive total score implies the opposite. The adjusted subscale scores and adjusted integrated total score were used in further analyses.

Descriptive statistics for the total group, males, and females were retrieved to gain insight into the distribution of the scores on the individual factors, subscales, total score, and final conclusion B of the RS-V. Spearman correlations were calculated to determine the strength and direction of the association between these scales. According to Cohen (1988), a correlation of .10 is considered small, .30 is medium, and above .50 is large. Mann–Whitney *U* tests were conducted to test the differences between males and females regarding the subscale ratings, RS-V total score, and final conclusion B. This nonparametric test was chosen because the final conclusion B was an ordinal variable and the data of the subscale scores and the total score were not normally distributed for each separate group (males and females). The descriptive statistics, correlations, and Mann–Whitney *U* statistics were retrieved for the group of individuals that were included for analyzing postrelease violent (re)offending 6 months after release.

To determine the interrater reliability of the RS-V, intraclass correlation coefficients (ICCs) were calculated, using a two-way random effect model and absolute agreement, single measure. ICCs were analyzed for the total group and for males and females separately. For the historical factors, we did not calculate ICCs, as H1 was already rated in Phase 1 of the study (see "Procedure" section). The critical values of ICCs are ICC $<$ .40 = poor, .40 $\geq$ ICC $\leq$ .75 = fair to good, and ICC $>$ .75 = excellent (Fleiss, 1986).

TABLE 2: Descriptive Statistics of the Unadjusted Scores on the Individual Factors of the Risk Screener Violence for the Total Group of Incarcerated Individuals, Males and Females (Included Within the 6 Months Follow-Up Period)

	Historical risk factors		Dynamic risk factors				Dynamic protective factors			
Statistics	H1	H2	R1	R2	R3	R4	P1	P2	P3	P4
Total group (n = 571)										
M	2.17	0.72	0.16	0.62	0.39	0.39	1.40	1.45	1.25	1.16
SD	1.56	1.13	0.45	0.79	0.63	0.69	0.72	0.76	0.85	0.79
Males (n = 461)										
M	2.47	0.84	0.18	0.68	0.44	0.42	1.34	1.42	1.26	1.11
SD	1.47	1.20	0.48	0.81	0.65	0.70	0.72	0.77	0.84	0.79
Females (n = 110)										
M	0.93	0.23	0.09	0.35	0.21	0.29	1.70	1.58	1.23	1.40
SD	1.30	0.59	0.29	0.65	0.51	0.63	0.60	0.68	0.88	0.72

The predictive validity of the RS-V was analyzed by conducting receiver operating characteristic (ROC) analyses for all groups with the subscale scores, total score, and final conclusion B as predictors of 6, 12, and 24 months postrelease violent (re)offending. Gender differences regarding the predictive validity of the RS-V for 12 and 24 months were investigated by conducting an additional ROC analysis. ROC analyses result in Area Under the Curve (AUC) values that vary between 0 and 1 and indicate the predictive validity of an instrument. AUC values can be classified as small (between .56 and .64), medium (between .64 and .71), or large (above .71; Rice & Harris, 2005). For example, an AUC value of .70 indicates a probability of 70% that a randomly selected recidivist will have a higher score than a randomly selected nonrecidivist. In addition, an AUC value of .50 indicates that an instrument operates at chance level, while an AUC value of 1 would imply perfect prediction. AUC values are relatively insensitive to base rates; however, when base rates become as low as a few percent, even AUC values become unreliable. For this reason the predictive validity for the female sample could not be analyzed for the 6 months follow-up time, (re)offending prevalence = 3%. For the dynamic protective factors, the AUC values were reversed. This means that a higher AUC value indicates a protective effect against the occurrence of violent (re)offending after release.

RESULTS

DESCRIPTIVE STATISTICS

Table 2 displays the descriptive statistics of the participants on the individual historical risk factors, dynamic risk factors, and dynamic protective factors. Overall, the dynamic risk factors are rated quite low and the dynamic protective factors relatively high.

In addition, Table 3 displays the descriptive statistics and the correlations for the incarcerated persons on the subscale scores, total score, and final conclusion B of the RS-V. The subscale scores, total score, and final conclusion B of the RS-V are all positively correlated (medium to large effects), except for the dynamic protective factors which are negatively correlated (medium effect) with the other variables. Additional results regarding the ratings of final conclusion B of the RS-V for each group are shown in Figure 1.

TABLE 3: Descriptive Statistics and Correlation Coefficients of the Adjusted Subscale Scores, Adjusted Total Score, and Final Conclusion B of the RS-V for the Total Group of Incarcerated Individuals, Males and Females (Included Within the 6 Months Follow-Up Period)

Variable	*M*	*SD*	*Min.–Max.*	1	2	3	4	5
Total group ($N = 571$)								
1. Historical risk factors	1.74	1.38	0 to 4.80	—				
2. Dynamic risk factors	1.55	1.90	0 to 8.00	.433	—			
3. Dynamic protective factors	5.33	2.33	0 to 8.00	−.412	−.643	—		
4. RS-V total score	−2.05	4.71	−8.00 to 12.80	.700	.832	−.880	—	
5. Final conclusion B: Concerns regarding violence after release	1.03	0.79	0 to 2.00	.746	.507	−.580	.727	—
Males ($n = 461$)								
1. Historical risk factors	1.99	1.34	0 to 4.80	—				
2. Dynamic risk factors	1.69	1.95	0 to 8.00	.375	—			
3. Dynamic protective factors	5.14	2.35	0 to 8.00	−.378	−.661	—		
4. RS-V total score	−1.46	4.72	−8.00 to 12.80	.659	.836	−.887	—	
5. Final conclusion B: Concerns regarding violence after release	1.16	0.75	0 to 2.00	.677	.472	−.587	.701	—
Females ($n = 110$)								
1. Historical risk factors	0.69	1.01	0 to 4.20	—				
2. Dynamic risk factors	0.93	1.51	0 to 6.00	.492	—			
3. Dynamic protective factors	6.14	2.04	0 to 8.00	−.340	−.497	—		
4. RS-V total score	−4.51	3.80	−8.00 to 9.60	.616	.791	−.862	—	
5. Final conclusion B: Concerns regarding violence after release	0.48	0.74	0 to 2.00	.732	.545	−.449	.637	—

Note. All p values were $< .001$. RS-V = Risk Screener Violence.

Regarding gender differences, detained males received significantly higher ratings on the historical risk factors ($U = 10{,}990.50$, $p < .001$), the dynamic risk factors ($U = 19{,}127.00$, $p < .001$), and the total score ($U = 14{,}626.50$, $p < .001$) compared with detained females. In addition, females scored significantly higher on the dynamic protective factors ($U = 18{,}738.00$, $p < .001$) compared with males. Moreover, males were rated higher on the final conclusion B ($U = 13{,}612.00$, $p < .001$) and thus, on average, higher concerns were raised regarding future violent behavior after release for males than females based on the RS-V (see also Figure 1).

INTERRATER RELIABILITY

The results regarding the interrater reliability are shown in Table 4 for the total group, and for men and women separately. The ICCs were all significant and varied from .815 to .979, which is considered excellent.

PREDICTIVE VALIDITY OF THE RS-V FOR POSTRELEASE VIOLENT (RE)OFFENDING

Table 5 displays the results of the ROC analyses. The AUC values of females for 6 months violent (re)offending were excluded due to a low base rate (3%). Within the total group and for the males, the different subscale scores, the total score, and the final conclusion B were all significant predictors of violent (re)offending for 6, 12, and 24 months postrelease. The females demonstrated similar results, albeit the protective factors were not

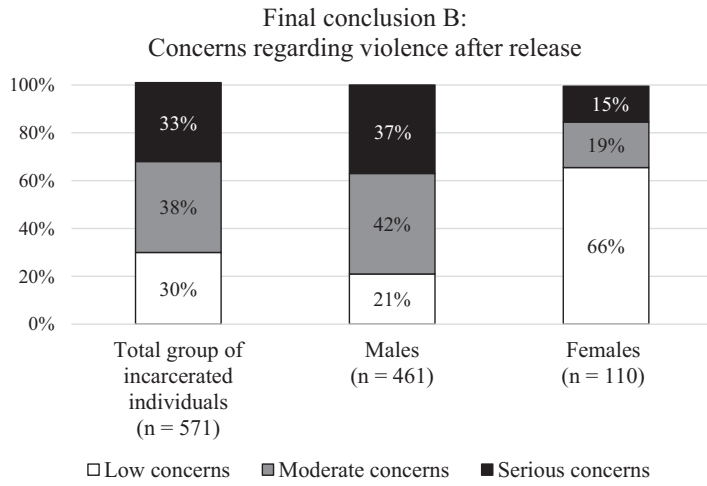

Figure 1: Overview of the Final Conclusion B of the RS-V Regarding Concerns About Violence After Release. The Results Are Displayed Per Group: The Total Group of Incarcerated Individuals, Males and Females (Included Within the 6 Months Follow-Up Period)

Note. RS-V = Risk Screener Violence.

TABLE 4: The ICCs of the Subscale Scores, Total Score and Final Conclusion B of the RS-V Per Group of Incarcerated Individuals, Males and Females

	ICC		
Variable	Total group (N = 89)	Males (n = 63)	Females (n = 26)
Dynamic risk factors	.920	.917	.930
Dynamic protective factors	.918	.931	.874
RS-V total score	.976	.979	.963
Final conclusion B: Concerns regarding violence after release	.866	.866	.815

Note. All p values were $< .001$. ICC = intraclass correlation coefficient; RS-V = Risk Screener Violence.

significantly predictive at 12 months follow-up, possibly due to the low (re)offending base rate (6%) and relatively small sample size. Table 5 shows that most AUC values were moderate to large for the total group, males and females. Overall, the historical risk factors showed the strongest predictive values for violent (re)offending. For the total group and for the incarcerated males, predictive values appeared slightly stronger for the follow-up period of 6 months, in comparison with 12 or 24 months.

Finally, the RS-V overall demonstrated a significantly higher predictive validity for the group of females in comparison with the group of males. This is the case for, respectively 12 and 24 months follow-up, the historical risk factors ($z = -5.164$, $p < .001$; $z = -7.967$, $p < .001$), the dynamic risk factors ($z = -5.324$, $p < .001$; $z = -7.966$, $p < .001$), and the RS-V total score ($z = -4.593$, $p < .001$; $z = -7.112$, $p < .001$; although comparison is complicated by the difference in (re)offending base rates between men and women). The predictive validity of final conclusion B ($z = -2.960$, $p = .003$) was only significantly

TABLE 5: The AUC and CIs of the Subscale Scores, RS-V Total Score, and Final Conclusion B of the RS-V for 6, 12, and 24 Months Postrelease Violent (Re) Offending per Group of Incarcerated Individuals

Violent (re) offending	Prevalence	Historical risk factors		Dynamic risk factors		Dynamic protective factors		RS-V total score		Final conclusion B: Concerns regarding violence after release	
		AUC	95% CI	AUC	95% CI	AUC	95% CI	AUC	95% CI	AUC	95% CI
Total group											
6 months	37/571 (7[a])	.779***	[.70, .85]	.669***	[.57, .77]	.717***	[.62, .82]	.755***	[.67, .84]	.719***	[.64, .80]
12 months	82/559 (15)	.772***	[.72, .83]	.662***	[.60, .73]	.646***	[.58, .72]	.715***	[.66, .77]	.701***	[.64, .76]
24 months	114/547 (21)	.769***	[.72, .82]	.682***	[.63, .74]	.661***	[.60, .72]	.736***	[.69, .79]	.694***	[.64, .74]
Males											
6 months	34/461 (7)	.738***	[.65, .83]	.627*	[.52, .73]	.705***	[.60, .81]	.720***	[.63, .82]	.684**	[.59, .78]
12 months	76/451 (17)	.729***	[.67, .79]	.626***	[.56, .70]	.628***	[.55, .70]	.675***	[.61, .74]	.666***	[.60, .73]
24 months	105/442 (24)	.716***	[.66, .77]	.637***	[.58, .70]	.631***	[.57, .70]	.685***	[.63, .74]	.642***	[.59, .70]
Females											
12 months	6/108 (6)	.956***	[.90, 1.00]	.895***	[.83, .96]	.694	[.47, .92]	.902***	[.83, .97]	.794*	[.61, .98]
24 months	9/105 (9)	.980***	[.95, 1.00]	.946***	[.90, .99]	.795**	[.62, .97]	.950***	[.91, 1.00]	.864***	[.73, 1.00]

Note. AUC = area under the curve; CI = confidence interval; RS-V = Risk Screener Violence.
[a]The numbers between the parentheses represent the prevalence of violent (re)offending in percentages.
*$p < .05$. **$p < .01$. ***$p < .001$.

higher for females compared with males for the 24 months follow-up period, but not for the 12 months follow-up period. There was no significant difference in the predictive validity of the dynamic protective factors for violent (re)offending between males and females, for both follow-up periods.

DISCUSSION

The goal of this retrospective file-based study was to gain insight into the psychometric properties of the RS-V, a newly developed risk screening instrument for violent behavior among adult incarcerated individuals. This study demonstrates that the RS-V is a valid and promising new method for the efficient assessment of concerns regarding postrelease violent offending among ex-detainees, for males as well as females. The results show that the RS-V was scored with excellent interrater reliability, which is in line with the results of the pilot study (De Vries Robbé et al., 2021). In addition, detained males showed higher concerns for future violent behavior after release from prison than detained females. Furthermore, the predictive validity of the RS-V was medium to large for 6, 12, and 24 months postrelease violent offending. Finally, for female offenders, the predictive validity of the RS-V was overall higher than for male offenders.

RISK AND PROTECTIVE RATINGS

With regard to the descriptive statistics, the dynamic risk factors are, overall, rated relatively low and dynamic protective factors relatively high. This means most participants behaved reasonably well during prison stay. A possible explanation for this result could be that being detained may result in a diminished presence of potential risk factors (e.g., less availability of alcohol/drugs) and an increase in protective factors (e.g., imprisonment may increase the motivation for a crime free future). Future studies could potentially investigate alterations in the presence of dynamic factors over time during prison stay.

The historical risk factors, dynamic risk factors, RS-V total score, and final conclusion B are mutually positively correlated, while the protective factors are negatively correlated with the other subscales. This is in line with the expectation that protective factors are associated with a decrease of (the risk of) (re)offending, while the opposite is the case for risk factors.

PREDICTIVE VALIDITY

The results regarding the predictive validity highlight that the RS-V has sound predictive values regarding postrelease violent (re)offending for the total group of incarcerated individuals. The RS-V, as a screening instrument, is thus able to sufficiently identify persons with an increased likelihood of future violent offending. This is in line with findings regarding other (risk) screening instruments, used within prison practice, that also show promising results for identifying certain problems/needs within the prison population (Desmarais et al., 2016; Gray et al., 2007; Nicholls et al., 2004; Roaldset et al., 2012). In particular, the two historical risk factors regarding previous violent behavior showed strong predictive validity on their own. This is valuable because in prison practice these historical factors can be rated on the first day of admission for every detainee. In further prospective studies regarding violence within and outside prison, the specific contribution of the different subscales of the RS-V will be studied in more detail.

With regard to the follow-up period, the total score and the final conclusion B of the RS-V overall show the strongest predictive values for shorter follow-up times. This corresponds with the hypothesis that the RS-V has good predictive validity for violence in particular for 6 months after release, because the final conclusions of the RS-V make predictions about the following 6 months. Nevertheless, the predictive validity of the RS-V for 12 months and 24 months violent (re)offending can still be classified as sufficient to large. Thus, even though the final conclusions of the RS-V make predictions about the following 6 months, aftercare facilities may potentially benefit from the outcome of the RS-V for their case-management planning for a longer time period.

GENDER DIFFERENCES

This study additionally looked at the difference in predictive validity of the RS-V between males and females. For both incarcerated males and females, the RS-V overall has good predictive validity. When developing and formulating the individual factors of the RS-V, gender differences were not specifically taken into account. Nevertheless, it seems the RS-V is able to accurately predict future violent behavior among female and male offenders alike. Surprisingly, the RS-V shows even higher predictive values for females compared with males. A potential explanation for this gender difference in predictive validity could be found in the base rates: The base rate of previous violence as well as violent (re)offending among females is substantially lower than among males. Thus, violent (re)offending seems more exceptional for women. It could be that the RS-V is better able to filter out individuals with a particularly high risk of violent (re)offending in samples where this type of offending is less common, leading to a relatively high predictive accuracy for detained females.

Previous research found a great variability in the predictive validity of risk assessment instruments for (re)offending outcomes among females, especially when it comes to predicting violence (De Vogel et al., 2019; Geraghty & Woodhams, 2015). Thus, including women in violence risk research and monitoring the need for female-specific instruments remains important. The results of this particular study show that it is not (yet) necessary to develop a gender-sensitive version of the RS-V. Although, future research analyzing RS-V's completed by prison employees in practice is needed to further support this conclusion. In this study, it appears that for females the dynamic risk factors were stronger predictors than the dynamic protective factors, while for males at short-term follow-up the protective factors performed stronger. Further research on protective factors specifically for females is deemed valuable.

As for gender differences regarding risk and protective ratings, incarcerated males scored higher on the historical risk factors, the dynamic risk factors, the total score, and the final conclusion B, compared with incarcerated females. On the contrary, females had higher ratings on the dynamic protective factors compared with males. These results highlight that, based on the RS-V, detained males show higher concerns for future violent behavior after release from prison than detained females. This result corresponds partially with a previous study where males demonstrated significantly higher mean scores on some (subscales of) risk assessment instruments, but not all (Coid et al., 2009).

LIMITATIONS

This study has some limitations. First, the data used in this study concern retrospective file information, which means that the RS-Vs were rated by researchers based on indirect

file information instead of direct behavioral observations of prison staff. The researchers who rated the RS-V were dependent on the amount and quality of the reports within the file of each detainee, while employees working in prison practice have more insight into the daily life of an incarcerated person. Probably not all of these insights are reported in detail. Therefore, researchers who rate the RS-V based on files may potentially lack important information that could be relevant for rating the individual factors or for formulating the final conclusions. This may be particularly true for the protective factors, as demonstrated by the ratings of factor P3 (Positive influences social network), which was omitted for most of the sample due to a lack of information in this regard. Because of the retrospective nature of this study, older prison files were studied. It seems that these older prison records contained little positive information in comparison with negative information. The recent shift from a risk-focused approach toward a more recovery-focused approach within Dutch prisons will likely lead to an increasingly balanced view of risks and strengths of each incarcerated person and therefore also the documentation of positive behavior or circumstances. Future prospective studies, using data from prison practice, will give more insight into the generalizability of the results found within the current study.

Another limitation is that this study only included offenses for which participants were actually convicted. The so-called "dark number" of all offending behavior could be approached more realistically in future studies by combining actual convictions with arrests, charges, and/or self-report data. Moreover, the relatively low base rate of violent (re)offending among females makes it difficult to draw firm conclusions regarding the predictive validity for (re)offending, particularly at 6 months follow-up for women.

A third limitation of this study is that the dynamic factors of the RS-V largely focus on behavior during imprisonment. For some incarcerated persons, it may be the case that behavior during imprisonment differs from behavior outside in the community after discharge. It is, therefore, a positive finding that regardless of this potential behavioral difference, the predictive validity of the RS-V is moderate to large for violent behavior after discharge to the community. In further studies, the predictive validity of the RS-V for in-prison violent behavior will be investigated.

CONCLUSION

In conclusion, the results of this retrospective file study indicate that the RS-V is a promising new method for the efficient screening of concerns regarding future violent offending among incarcerated individuals upon release from detention. Despite the fact that the RS-V is a brief and compact instrument, the RS-V demonstrates to be able to predict actual postrelease violent offending of Dutch incarcerated persons. The RS-V, as a risk screening instrument, therefore offers a good first impression of the concerns for future violent offending among all detained individuals. In correspondence with this, and to implement effective prevention strategies, the results of the screening should actively be discussed within the prison setting and shared with aftercare facilities. Moreover, the screening could serve as a triage tool for determining the need for further in-depth assessment with more extensive tools to further inform personalized risk management. More specifically, for individuals who show moderate or serious concerns regarding violent (re)offending based on the screening, it could be useful to conduct comprehensive violence risk assessment (such as the VRS/HCR-20^{V3} in combination with the SAPROF).

Taking into account the often understaffing and relatively limited presence of behavioral experts within the prison system, using a brief and simple risk screening instrument, such as the RS-V, offers an opportunity to increase prison staff knowledge about the importance of specific risk and protective factors for ex-detainee rehabilitation, and to subsequently intervene to improve these factors at an early stage of imprisonment. As such, the RS-V may offer potential for violence risk screening in prison systems worldwide. Furthermore, it could possibly also be used outside of the prison setting, meaning in other contexts where comprehensive risk assessment is simply not feasible and/or efficient for all individuals. Because the RS-V has already been implemented in all 25 Dutch prisons, an important step for future research is to investigate whether RS-Vs completed in prison practice are also able to predict actual future violent behavior of detained individuals, both during imprisonment and after release.

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NOTES

1. Within this study, we included individuals who have been incarcerated for different types of offenses (violent as well as nonviolent). Committing a violent offense after release concerns violent recidivism for some individuals, but for other individuals a violent offense after discharge from prison may be their first violent conviction. Therefore, we refer to violence after discharge as "violent (re)offending."

2. A time frame of 6 months was chosen to ensure an updated evaluation of the changeable dynamic risk and protective factors.

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