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Screening for safety: predicting violence concerns among detained individuals in the Netherlands using the Risk Screener Violence (RS-V)

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Citation
Smeekens, M. V. (2025, June 11). *Screening for safety: predicting violence concerns among detained individuals in the Netherlands using the Risk Screener Violence (RS-V)*. Retrieved from https://hdl.handle.net/1887/4239080

Version:	Publisher's Version
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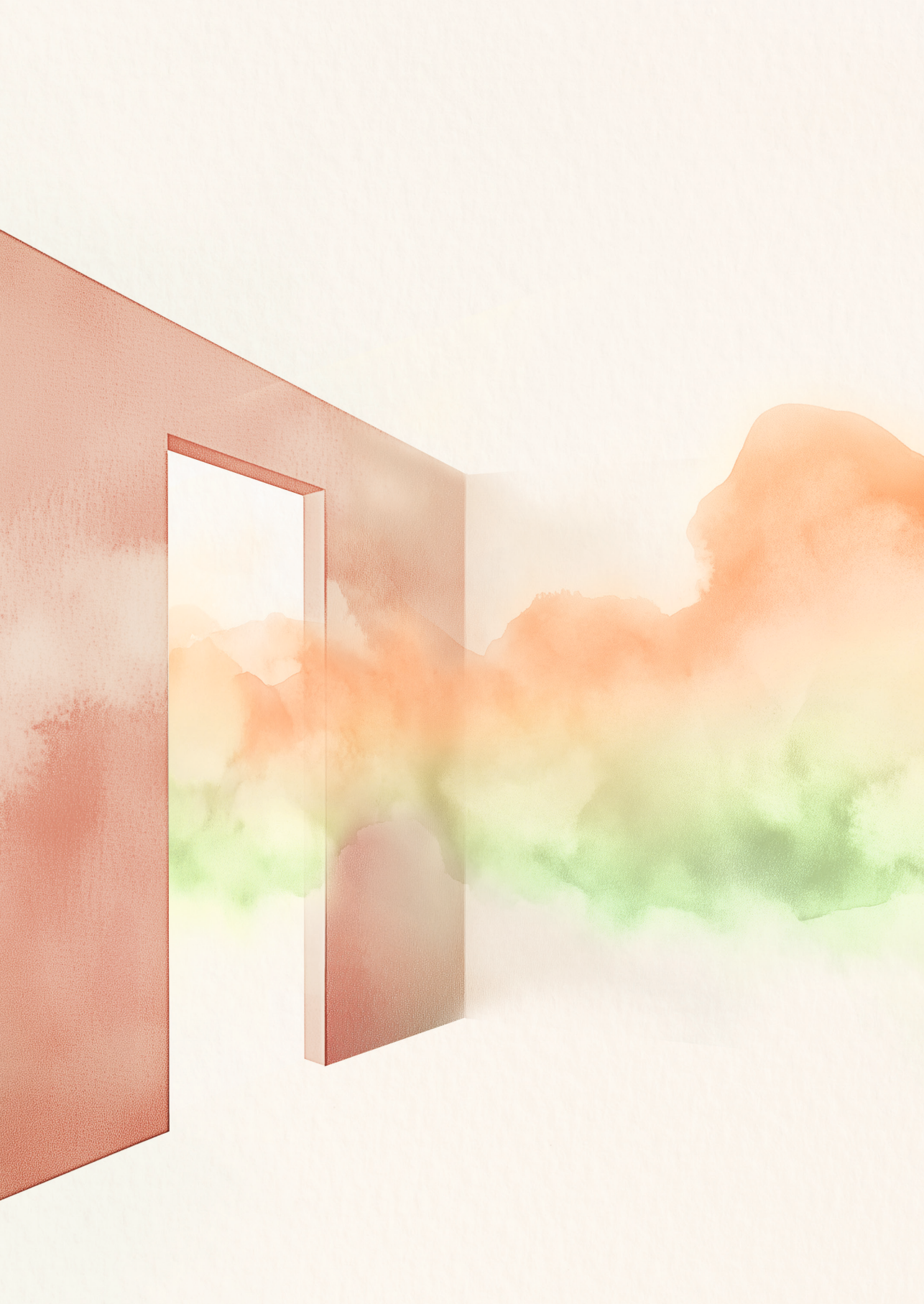
Downloaded from:	https://hdl.handle.net/1887/4239080

Note: To cite this publication please use the final published version (if applicable).



CHAPTER 4

Prospectively Predicting Violent and Aggressive Incidents in Prison Practice with the Risk Screener Violence (RS-V): Results from a Multisite Prison Study

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Published as:
Smeekens, M. V., De Vries Robbé, M., Popma, A., & Kempes, M. M. (2024). Prospectively predicting violent and aggressive incidents in prison practice with the Risk Screener Violence (RS-V): Results from a multisite prison study. *Psychological Assessment, 36*(11), 680-690. https://doi.org/10.1037/pas0001342

ABSTRACT

Preventing in-prison violence and maintaining a safe environment is an important goal within prison settings. Screening for violence risk may provide a valuable addition to reach this goal. Within the Dutch prison system, the Risk Screener Violence (RS-V) has become an important new element in overall risk management. Prior research shows that RS-V scores are a sound predictor of institutional violence and aggression of incarcerated persons. Whereas previous studies predominantly analyzed retrospective file-based data, the present study includes RS-Vs rated by prison employees in real-life prison practice shortly after implementation. The RS-Vs of 956 detained individuals from 25 Dutch prisons were analyzed. Disciplinary reports were consulted to measure violent and aggressive incidents during 4 months after the screening. In addition, detention duration (length of stay in prison before the screening) was included as an additional variable. Results of the present prison practice study show good predictive values of the RS-V ratings for violent and aggressive incidents during prison stay. The predictive validity was similar for prisoner-to-prisoner assault as well as prisoner-to- staff assault. In addition, the predictive validity of the RS-V scores did not differ between individuals with a longer detention duration versus individuals with a shorter detention duration. This multisite prison practice study is an important step in the further validation of the RS-V and shows that the RS-V is a valuable tool in determining who is more likely to show institutional violence. Nonetheless, it remains important to continually monitor the implementation and correct application of the RS-V in prison practice.

Keywords: prison, risk screening, violence, aggression, detention duration

INTRODUCTION

The prison setting can be an unpredictable environment for detained individuals. The (sudden) deprivation from freedom and autonomy, overcrowding, lack of privacy, and sometimes solitary confinement inherently foster the occurrence of stress and possible interpersonal conflicts. This phenomenon has been studied widely. Namely, individuals who are incarcerated have a higher probability of being exposed to violent behavior than individuals within the overall population (Wolff et al., 2009). In addition, being exposed to violence reinforces violence: detained individuals who witness violent behavior are more likely to act out violently themselves (McGrath et al., 2012). Consequently, preventing institutional violence and maintaining a safe environment is an important goal within prison settings. Specifically, because the violent behavior of incarcerated persons may have a major impact on the psychological well-being of other imprisoned individuals and prison employees (Boudoukha et al., 2013; Boxer et al., 2009; Hochstetler et al., 2004; Lerman et al., 2022; Wooldredge, 1991). The present study aims to contribute in preventing such violence by investigating whether ratings on a newly developed risk screening tool, the Risk Screener Violence (RS-V), are able to predict future violent and aggressive incidents of detained individuals during a 4-month follow-up period in prison. A previous study based on retrospective data demonstrated that RS-V scores are able to predict these types of incidents (Smeekens et al., 2024c). The present study intends to replicate these findings but instead focuses on RS-Vs completed by employees in real-life prison practice and includes prospective data on the occurrence of violence and aggression.

A prominent theory that attempts to explain the occurrence of violent behavior from a social-psychological perspective is the general strain theory (GST) of crime and delinquency (Agnew, 1992; Agnew & White, 1992). In this model, strains are referred to as 'negative or adverse relations with others'. The GST focuses on the individual and his or her (perspective of) negative social relationships with other individuals. The theory describes three major types of actual or anticipated strains: (a) failure to achieve positively valued goals; (b) removal of positively valued stimuli; and (c) the presentation of negatively valued stimuli. The negative emotions, such as anger or fear, which result from these strains, may pressure someone into delinquency or even violence. The GST also mentions that the degree to which an individual can or cannot cope with certain strains determines whether they will actually act out in delinquent behavior. The GST seems particularly applicable to the prison setting (Blevins et al., 2010). Earlier studies show that there is indeed an association between certain prison strains (e.g., victimization, hostile relationships with prison employees, and the proportion of incarcerated individuals convicted of a violent offense) and the occurrence of both institutional misconduct and community recidivism (Listwan et al., 2011; Morris et al., 2012).

Another possible strain is the time individuals spend in prison. Some researchers suggest that the length of the imposed prison sentence may increase feelings of conflict and hopelessness among incarcerated individuals (Dhami et al., 2007; Seeds, 2022; Thompson & Loper, 2005), possibly resulting in prison misconduct. Studies investigating variables that are associated with prison misconduct indeed found that individuals with a longer overall sentence length or time served thus far were more likely to show (violent) incidents than individuals with a shorter overall sentence length or time served thus far (Dhami et al., 2007; Marcum et al., 2014; Sorensen & Cunningham, 2007). These studies selected a (random) sample of incarcerated individuals from prison and investigated the number of disciplinary infractions thus far. On the contrary, other research reports indicate that individuals with a shorter overall detention duration had a higher incidence of disciplinary infractions and violence than individuals with a longer overall detention period (Flanagan, 1980; Jiang & Fisher-Giorlando, 2002; Zamble, 1992). The researchers of these studies looked at prison misconduct during, respectively, the whole prison sentence, a time period of 6 months, and a time period of 7 years. The third study also found that the number of disciplinary infractions was lower during the last period of detention compared to the start of detention (Zamble, 1992).

In an attempt to prevent future violent behavior of incarcerated individuals, prisons aim to evaluate individual violence risk levels by making use of risk assessment instruments and/or risk screening instruments. These instruments are designed to bring forth an estimation of the chance that an individual will show future (violent) criminal behavior (both during imprisonment and thereafter), based on several risk and/or protective factors. For instance, the risk factor 'history of violence' and the protective factor 'motivation for intervention'. Whereas extensive risk assessment instruments (e.g., the Historical-Clinical-Risk Management Version 3, HCR-20^{V3}; Douglas et al., 2013, and the Structured Assessment of Protective Factors for violence risk, SAPROF; De Vogel et al., 2012a) give a comprehensive analysis of the risk and/or protective factors of an individual, shorter screening instruments (e.g., the Level of Service Inventory-Revised: Short Version; Andrews & Bonta, 2001, and the Violence Risk Scale-Screening Version; Wong & Gordon, 2007) offer an initial global impression of the most important risks and/or strengths of an individual. Test scores on the majority of both types of instruments have shown to be able to predict future violent behavior of (previously) detained individuals, within prison and/or within the community (Campbell et al., 2009; Desmarais et al., 2018; Nqwaku et al., 2018). However, wide-scale use of these tools is not always attainable due to financial, personnel, or time constraints.

Within the Netherlands, a novel tool was developed in 2020 to make structural risk screening for violent behavior both inside and outside prison feasible for all individuals

within the prison context. This tool is called the Risk Screener Violence (RS-V) (De Vries Robbé & Van den End, 2020). The RS-V is a brief screening tool that consists of two historical risk factors, four dynamic risk factors, four dynamic protective factors, and three final conclusions regarding concerns about future violent behavior (inside and outside of prison). The final conclusions of the RS-V are discussed during a multidisciplinary team meeting, following a Structured Professional Judgment (SPJ) approach. If, following from this multidisciplinary discussion, there are moderate or high concerns regarding the occurrence of violence in the coming months, individually tailored risk management can be instated. The RS-V may serve as triage for the necessity to carry out more extensive risk assessment instruments such as the HCR-20^{V3} and the SAPROF. In this manner, the RS-V is complementary to more extensive risk tools. In addition, the RS-V aims to guide decision making regarding granting temporary leave from prison or the placement of individuals on specific wards, in a double or single cell. Moreover, the results of the screening may provide guidance to implement personalized interventions, such as aggression replacement training or treatment for addiction problems. Finally, the RS-V screening may promote risk communication and serves as a medium for transferring risk information between prison staff and with aftercare programs. This sharing of knowledge regarding risk profiles and subsequent personalized risk management is anticipated to contribute to prison and community safety. After a pilot study in seven Dutch prisons, the RS-V has been implemented within all Dutch prisons in 2021 (De Vries Robbé et al., 2021). For more information about the RS-V and the background regarding its development and intended use, see Smeekens et al. (2024b, 2024c).

Previous studies have shown that RS-V scores are able to predict both violent recidivism after release and violent and aggressive incidents during imprisonment (Smeekens et al., 2024b, 2024c). However, these initial validation studies analyzed retrospective data; they included RS-Vs rated by researchers based on file information of detained individuals (see Chapter 3 and Chapter 5). Since the RS-V has been implemented within the Dutch prison system and is now being conducted for every single new person who enters a Dutch prison, a large amount of data from prison practice is available for prospective research. Therefore, this study analyzes RS-Vs completed by prison employees in all 25 prisons within the Netherlands. The predictive validity of the ratings on these RS-Vs is tested for violent and aggressive incidents during a 4-month follow-up period in prison. More specifically, we investigate the predictive validity of the scores on the RS-V subscales, the RS-V total score, and the rating of final conclusion A (concerns regarding future violence inside prison) for both types of incidents. In prison practice, prison employees solely work with the qualitative labels of the individual RS-V factors and the final SPJ conclusions; the numerical subscale scores and total scores described in the present study are calculated

for research purposes only. Since this is a prospective study, including RS-Vs rated by prison employees in real-life prison practice, the results of the screening may have led to subsequent follow-up measures in order to prevent future violence. However, this study does not specifically look into which risk management strategies are instated based on the results of the RS-V and whether they were effective.

Based on findings in the before mentioned retrospective research on incidents during prison stay (Smeekens et al., 2024c), we expected that the RS-V ratings by prison employees would have sound predictive validity for violent and aggressive incidents occurring within the prison setting. Since a previous retrospective study found that test scores on the RS-V were specifically able to predict violent incidents directed at prison staff rather than incidents directed at other incarcerated individuals (Smeekens et al., 2024c), this prospective study aimed to further investigate whether the predictive validity of the RS-V scores varies between victim types in prison practice. Furthermore, previous research has been inconclusive regarding the association between the occurrence of violent behavior and detention duration. Therefore, this association is also included as an exploratory research question within the present study, by adding the length of stay in prison before the moment the screening took place as an additional variable. It was expected that the time individuals have spent in prison thus far would influence the predictive validity of the RS-V ratings for violent and aggressive incidents during confinement. More specifically, we anticipated that adding detention duration would improve the prediction accuracy of the final conclusion ratings of the RS-V in such a way that the predictive validity is stronger for individuals who have been incarcerated longer. First, this is expected because prison staff generally know an individual better if he or she has been incarcerated longer. Therefore, the information that is included into the RS-V will likely be more reliable. Second, incarcerated individuals may need some time to 'settle down' and get used to the (strains within) prison environment, making them less unpredictable over time.

METHOD

Transparency and openness

This study's design and its analyses were not preregistered. The analysis code for this study is available upon the reasonable request of the corresponding author.

Participants

The participants in this study were detained individuals from all 25 Dutch prisons. Within the Netherlands, roughly three prisons have a relatively small capacity of less

than 200 individuals, 18 prisons have a moderate capacity between 200 and 500 individuals, whereas four prisons are relatively large with a capacity of more than 500 individuals. Approximately 8,500 individuals (54 out of 100,000 Dutch inhabitants in 2022) reside within these prisons on a daily basis (Statista Research Department, 2023). The average detention duration within the Netherlands is 4 months (Dutch Custodial Institutions Agency, 2023a). The incarceration rates within the Netherlands are relatively small compared to the incarceration rates in countries such as England and Wales (159 – 100,00 inhabitants in 2023) or the United States (531 – 100,000 inhabitants; (Ann Carson & Kluckow, 2023; Sturge, 2023). In addition, within these countries, the prison capacity and the length of sentences of prison inhabitants are relatively large compared to Dutch prisons.

The detained individuals included in this study had RS-Vs that were completed during the first 6 months after implementation of the RS-V within the Dutch prison system, which is September 2021 up to and including February 2022. In one of the prisons, implementation of the RS-V commenced earlier. Hence, for this particular prison, RS-Vs from April 2021 onward were included. Participants could be included in the study if they adhered to several inclusion criteria. First, an individual was required to have a complete RS-V, consisting of a filled-in part one, part two, and part three (see the following paragraph), with not more than two factors scored as unknown. Second, regarding the follow-up period, a participant for whom the RS-V was completed needed to have remained in prison for at least 4 months (120 days) after the rating of the final conclusions, part three, of the RS-V. The final inclusion criterion concerned participants to have been formally convicted for the offense that led to the corresponding (current) prison sentence, as opposed to individuals still awaiting court decisions.

The final sample consisted of 850 male and 106 female detained individuals, 956 in total. At the start of their detention period, the included detainees were 40 years old on average (*SD* = 11.69, range = 19 – 78). The average number of days they spend in prison, from the start of their detention until the rating of the final conclusions of the RS-V (part three), was 525 days (*SD* = 967.83, range = 20 – 10,945). Approximately a quarter (25.5%) of the sample was a first-time detainee. Table 4.1 displays information about previous violent behavior among the included participants (see the following paragraphs for more information about factors H1 and H2).

Table 4.1 Previous violent behavior of the detained individuals included within this study (*n* =956)

	Historical risk factor	
Frequency of offense/incident	Historical risk factor 1 (H1) of the RS-V: Previous interpersonal violence (convictions) outside prison (*n, %)*	Historical risk factor 2 (H2) of the RS-V: Previous interpersonal violence (disciplinary reports) inside prison (*n, %)*
0	175 (18.3)	660 (69.0)
1	159 (16.6)	91 (9.5)
2 – 3	204 (21.3)	111 (11.6)
4 – 5	159 (16.6)	33 (3.5)
≥6	255 (26.7)	53 (5.5)

Note. Factors H1 and H2 contained 4 and 8 missing values, respectively

The RS-V and the administration process within Dutch prison practice

The RS-V is a screening instrument that facilitates the structured evaluation of violence risk of all adult prisoners (De Vries Robbé & Van den End, 2020). The aim of this instrument was to create more insight into the most relevant risk and protective factors for each individual and to subsequently draw conclusions regarding concerns about the future violent behavior of that individual. The definition of violence that is used within the RS-V is as follows: attempting, threatening with, or actual physical violence toward others (including sexual violence). The RS-V is rated based on SPJ assumptions and consists of three parts. Within Dutch prison practice, these three parts are rated by different assessors at different time points during the beginning of incarceration. Generally, employees who rate the RS-V subsequently remain continuously involved with this individual. After the initial assessment at the start of incarceration, the RS-V may be reassessed later on during prison stay. This is done to assist decision making when (longer term) leave from prison are proposed. In addition, reassessment may be carried out whenever deemed necessary by prison staff in order to monitor changes in violence risk concerns. For an overview of the content of the RS-V and the administration process within prisons in the Netherlands, see table 4.2.

Table 4.2 The content of the RS-V and an overview of the administration process of the RS-V within Dutch prison practice

Part	Content	Qualitative label and rating	Moment of evaluation	Assessor
1	Historical risk factors subscale H1. Previous interpersonal violence outside prison H2. Previous interpersonal violence inside prison	0x (0) 1x (1) 2 – 3x (2) 4 – 5x (3) ≥6x (4)	Within one or two days after admission	Back office employee
2	Dynamic risk factors subscale (past 6 months in prison) R1. Recent interpersonal violence R2. Substance use R3. Negative/defiant attitude R4. Impulsive behavior Dynamic protective factors subscale (past 6 months in prison) P1. Following rules and agreements P2. Coping with problems and frustrations P3. Positive influences from social network P4. Motivation for crime free future	Not or hardly present (0) Moderately present (1) Clearly present (2)	1. Within 6 weeks 2. Prior to proposed leave 3. When deemed necessary	Case manager
3	Final conclusions (coming 6 months). Concerns regarding future: A. Violence inside prison B. Violence outside prison after release C. Violence outside prison during leave	Low concerns (0) Moderate concerns (1) Serious concerns (2)	1. Within 6 weeks 2. Prior to proposed leave 3. When deemed necessary	Multidisciplinary

Part 1: Historical risk factors

Part one of the RS-V consists of two historical risk factors. These are 'previous interpersonal violence outside prison' and 'previous interpersonal violence inside prison'. Both factors are scored on a 5-point scale (see table 4.1). Previous interpersonal violence outside prison within factor H1 was defined as formal convictions (excluding dismissals and acquittals) for a violent offense within the community. Whether an offense is categorized as violent, is based on the penal code given to the offense as stated on the criminal record of a detainee. These violent convictions may include, for example, (attempted) manslaughter, (aggravated) assault, (attempted) sexual violent offenses, verbal violent threats, stalking, and arson with immediate danger for other persons. Harmful behaviors that do not concern interpersonal violence are not included in this study, such as hands-off sexual offenses, verbal abuse without a specific threat, the (deliberate) destruction of goods, or self-harm. Factor H2 was operationalized in the same manner as the violence outcome measure used within this study (see section 'Violent and aggressive incidents within prison').

The historical risk factors are rated by a back office employee as soon as possible after admission, usually within 1 or 2 days. Within Dutch prisons, back office employees perform administrative tasks regarding the admission process, possible transfers, reintegration, and eventually the release of a detainee. With regard to part one of the RS-V, the back office employee searches within the official criminal record and prison record of a new detainee whether they committed any previous violent offense(s) in the community or violent incident(s) during previous prison stays. Based on the information within these records, part one of the RS-V is completed. In case the individual has displayed previous violent behavior during prison stay, a message containing this information is sent to the head of the ward/department where this individual is currently being detained. By doing so, the employees of that ward immediately know whether a newly detained individual, for instance, might need extra attention or should be approached in a cautious manner. Part one of the RS-V is administered for all individuals who enter a Dutch prison.

Part 2: Dynamic factors

Part two of the RS-V entails four dynamic risk factors and four dynamic protective factors. These factors are rated on a 3-point scale, where a higher score indicates the presence of a problem when it concerns a risk factor or a strength when it concerns a protective factor. Namely, not or hardly present (rated as 0 in the present study), moderately present (rated as 1), or clearly present (rated as 2). The dynamic factors are assessed by the case manager. A case manager within the Dutch prison system has their own caseload and is responsible for the detention and resocialization process of a

small group of incarcerated persons. The case manager rates the eight dynamic factors based on their own behavioral observations of the detainee and on the behavioral reports within the digital file of a detainee since admission or the past 6 months of prison stay. These behavioral reports are filled in by different prison employees (e.g., administrator, prison officer, ward manager, work supervisor, or sports teacher). The case manager writes down arguments for each of the factors, based on which the ratings are selected. Besides assessing each of the eight dynamic factors, the case manager may include additional violence-related information if this is deemed relevant for the individual case. Since, naturally, it takes some time to gather information about an incarcerated person and observe their behavior within the prison, part two of the RS-V is generally completed within 6 weeks (some prisons 9 weeks) after admission. As a consequence, for individuals who have a detention duration of less than 6 weeks, only part one of the RS-V is rated.

Part 3: Final conclusions

The final part of the RS-V, part three, contains three final conclusions regarding concerns about future interpersonal violent behavior of a detained individual during the following 6 months: (A) within prison, (B) post-release, and (C) during leave. The final conclusions are rated on a 3-point scale: low concerns (in this study converted to 0), moderate concerns (1), or serious concerns (2). These conclusions are based on the ratings, argumentation, and possible additional violence-related information included in part one and part two of the RS-V. Consensus regarding the final conclusions of the RS-V between different prison workers (e.g., unit supervisors, case managers, prison officers, administrators) is reached through discussion during a multidisciplinary team meeting. Each individual is discussed at least every 4 weeks during these meetings. Final conclusion A (concerns regarding interpersonal violence inside prison) and final conclusion B (concerns regarding interpersonal violence outside prison after release) of the RS-V are rated during the second multidisciplinary team meeting after admission of a detainee, which occurs after 6 weeks (when part two of the RS-V is completed). In addition to final conclusions A and B, final conclusion C (concerns about interpersonal violence outside prison during leave) is completed in case (long-term) leave is proposed.

Naturally, all parts of the RS-V are updated whenever the RS-V is reassessed later during prison stay to maintain an accurate and up-to- date overview of the current risk and protective factors of an individual. Because the final conclusions are formed in a multidisciplinary manner, this offers an opportunity for prison employees to subsequently discuss follow-up measures regarding the findings from the RS-V. For instance, discussing what interventions would be beneficial to support an individual in targeting specific risk or protective factors, contemplating on what risk management

measures could be utilized to be able to grant (un)supervised leave to an individual for whom there are moderate or serious concerns, or considering whether more comprehensive violence risk assessment is needed to gain a better understanding of the serious concerns regarding violence in a specific case.

Violence and aggressive incidents within prison

The main goal of the RS-V is to predict and prevent future violent behavior. Hence, we included three main outcome measures of violent behavior and proxies thereof during prison stay: (a) violent incidents, (b) aggressive incidents, and (c) both categories of violent and aggressive incidents combined. The category of violent incidents was defined as actual physical violence and/or violent threats toward other people and was further divided into violence toward staff or violence toward other detained individuals. Aggressive incidents consisted of aggression toward objects (such as damaging property or severely slamming or kicking walls and doors) and verbal disruptive behavior (such as insulting others or verbally abusive behavior; without an explicit violent threat). The violent and aggressive incidents were measured during a 4-month (or 120-day) follow-up period within the prison setting, from the date of the rating of part three of the RS-V until 4 months later. The incidents were scored as 0 (no/not present) or 1 (yes/present) per outcome category for each individual. The frequency of the incidents within each category was not included within this study. For example, if an individual committed several incidents of physical assault during the follow-up period, these incidents were still counted as 1 (yes) for the outcome category of violent incidents and then automatically also as 1 (yes) for the combined outcome category of violent and/or aggressive incidents. Information regarding the occurrence of violent and aggressive incidents was based on individual detainee reports within the central digital prison archive of the Dutch Ministry of Justice and Security.

The reported incidence of violent or aggressive behavior among females was too low to run separate analyses for this group of incarcerated individuals. More specifically, only two (1.9%) females committed a violent incident, four (3.8%) showed an aggressive incident, and five (4.7%) females displayed any violent or aggressive incident during the 4-month follow-up period. On the contrary, among the males, 99 (11.6%) individuals committed a violent incident, 95 (11.2%) individuals showed an aggressive incident, and 138 (16.2%) individuals displayed at least one violent or aggressive incident during follow-up. Table 4.3 shows the occurrence rates of violent and aggressive incidents among the total sample, females included.

Table 4.3 The occurrence rates (yes/no) of the different types of incidents within prison during a 4-month follow-up period

Incident category	Number of detained individuals (*n* = 958)	%
Violent incidents	101	10.6
Toward staff	58	6.1
Physical violence	14	1.5
Violent threats	51	5.3
Toward other detained individuals	59	6.2
Physical violence	43	4.5
Violent threats	19	2.0
Aggressive incidents	99	10.4
Aggression toward objects	36	3.8
Verbal disruptive behavior	85	8.9
Any violent or aggressive incident	143	15.0

Note. Results between incident categories may overlap. Meaning that an individual could have committed incidents within different categories and that subcategories will not add up to the total

Detention duration

Following the implementation of the RS-V in September 2021, prison employees conduct an RS-V for each individual that enters a Dutch prison. As can be read in the previous section, the initial RS-V is completed at the start of incarceration, and reassessments can be done later on. However, at the beginning of the implementation process, all prisoners who were imprisoned at that moment received an RS-V rating, which means that for individuals who just started their detention period but also for individuals who were imprisoned for a longer time period, an RS-V was conducted. Therefore, it should be noted here that the current sample had a relatively lengthy average prison stay of 1.5 years at the time of screening. The benefit of this for the present study was that there was a wide distribution in length of prison stay, which made it possible to study the influence of length of stay on the predictive validity of RS-V ratings.

In the present study, detention duration is defined as the number of days an individual spends in prison until the moment the RS-V is conducted. Detention duration was operationalized as a dichotomous measure based on the median (see section 'Statistical design'). An imprisonment of 137 days or less represented a 'short' detention duration (n = 480), and an imprisonment of 138 days or more represented a 'long' detention duration (n = 476). Information regarding the detention duration of detained individuals was retrieved from the digital central archive of the Dutch Ministry of Justice and Security.

Procedure

This study protocol was approved by the ethics committee of the Institute of Pedagogical Science of the University of Leiden (Reference Number: ECPW-2021/33). The study design of the current research is similar to the study design of Smeekens et al. (2024c). This previous retrospective study included RS-Vs completed by researchers based on file information of detained individuals. These individuals were released from a Dutch prison between 2014 and 2017, thereby reflecting the retrospective nature of this study because during this time period, the RS-V was not yet developed nor implemented within the Dutch prison system, and individuals were already released from prison during data collection. On the contrary, the present study includes RS-Vs rated by prison employees in real-life prison practice shortly after implementation of the RS-V in 2021, and the concerned detained individuals were still imprisoned during data collection. However, within both studies, the same outcome measures regarding violence and aggression were included, a similar follow-up period of 4 months[10] was used, and the subscale scores and RS-V total scores were calculated in the same manner (see sections 'Violent and aggressive incidents within prison' and 'Statistical design').

The data collection for this multisite prison study occurred from January 2023 until June 2023, for all 25 Dutch prisons. The first step of data collection was to retrieve the RS-Vs of detained individuals, rated by prison employees, from the MetIS digital system. MetIS is the central data warehouse of the Dutch Custodial Institutions Agency, where information from different sources and systems is stored in a centralized manner. Researchers checked whether the detainees/RS-Vs adhered to the inclusion criteria (see section 'Participants'). Information about demographic variables and detention duration was also retrieved from MetIS.

The second step of data collection consisted of retrieving and rating the outcome measures based on incident reports within the digital detainee files. First, reports concerning the follow-up period were selected (from the date of rating part three of the RS-V until 4 months later). Second, information about violent and aggressive incidents was acquired by filling in a scoring form that contained the date, type of incident, and, if applicable, whether the violent incident was directed at personnel or fellow incarcerated persons. The outcome measures were scored by five different researchers in close collaboration. Frequent discussions took place regarding the inclusion of incidents,

10 According to the RS-V manual, the final conclusions of the RS-V concern the following six months. However, since the majority of prisoners in the Netherlands are already released within six months, Smeekens et al. (2024c) decided to use a 4-month follow up period in order to be able to detect in-prison violent and aggressive behavior, yet still ensuring a relatively large sample size. The current study uses the same 4-month follow-up period for replicability reasons.

leading to a final decision regarding the inclusion or exclusion of a certain incident, which enhanced the reliability of the outcome measures. Last, the data containing individual RS-Vs were matched with the data regarding violent and aggressive incidents during the 4-month follow-up period for each individual.

Statistical design

Data preparation and data analyses were conducted using IBM SPSS Statistics Version 28 and R Version 4.4.0. Within this study, numerical subscale scores and the numerical total score of the RS-V were calculated. These numerical scores were calculated for research purposes only (in order to gain insight into the average ratings and predictive validity of the different subscale scores and the RS-V total score). Within prison practice, these numerical ratings are not used, and prison employees solely work with the qualitative labels of the individual factors (not or hardly/moderately/clearly present) and the final conclusions (low/moderate/serious concerns), including sound argumentation. Following the SPJ methodology, these qualitative ratings and arguments are subsequently used to discuss follow-up measures.

The subscale scores concerned the historical risk factors, the dynamic risk factors, and the dynamic protective factors. Since the historical risk factors are scored on a 5-point scale and the dynamic factors are scored on a 3-point scale, we collapsed the historical risk factors into a 3-point scale in order to be able to compose an overall total score on the RS-V. The historical risk factors ratings of 1 – 2 were recoded into 1 and the ratings of 3 – 4 were recoded into 2. The total score of the RS-V is calculated by adding up the historical risk factors and the dynamic risk factors and subsequently subtracting the dynamic protective factors. Therefore, a negative total score of the RS-V indicates a greater presence of protective factors in comparison to risk factors and vice versa.

Out of the 10 RS-V factors, 0.58 factors were missing per individual on average. The majority of factors contained less than 5% missing values. Except for the factor P3 (positive influences from social network), which contained 24% missing values, and the factor P4 (motivation for crime-free future), which contained 22% missing values. To correct for these missing values, the method of pro-rating was used: each missing value received the mean score on the corresponding subscale for the individual case. The adjusted subscale scores and the adjusted RS-V total score were used in the predictive validity analyses. Descriptive statistics of the ratings on the unadjusted individual RS-V factors and final conclusion A and the adjusted subscale scores and RS-V total score were retrieved. In order to analyze the possible association between detention duration and violent/aggressive incidents within the prison, we included detention duration as a dichotomous variable. The dichotomous detention duration variable was created by

splitting the group of participants into two groups based on the median: one group with a shorter detention period (20 – 137 days) and one group with a longer detention period (138 – 10,945 days). Chi-square tests were used to test the difference between these two groups with regard to the occurrence of a violent, aggressive, or any violent/aggressive incident.

To investigate whether RS-V test scores are able to correctly identify/predict whether a detained individual will show violent or aggressive behavior during imprisonment, receiver operating curve (ROC) analyses were conducted. More specifically, we looked at the predictive validity of the subscale scores, the RS-V total score, and the final conclusion A rating (concerns regarding violence inside prison) for violent and aggressive incidents within prison during a 4-month follow-up period. Final conclusions B and C are reflecting concerns regarding violence outside the prison and are therefore not included as predictors within this prison practice study. ROC analyses result in area under the curve (AUC) values. These values may vary between 0 and 1, where a score of 0.5 means the instrument performs at the chance level and a value of 1 reflects a perfect prediction. Furthermore, AUC values can be classified as small (between .56 and .64), medium (between .64 and .71), or large (above .71; Rice & Harris, 2005). The AUC values of the subscale of dynamic protective factors were mirrored, meaning that a higher AUC demonstrates a protective effect against the incidence of violence and/or aggression. Separate ROC analyses were run for violent incidents, aggressive incidents, and both categories combined. Moreover, two additional separate ROC analyses were conducted for violent incidents toward staff and violent incidents toward other detained individuals.

Statistical differences between AUC values were tested using the DeLong test (DeLong et al, 1988). This was done for the AUC value of the RS-V total score versus the AUC value of final conclusion A for all three main outcome measures (violent incidents, aggressive incidents, or any incident). In addition, including the same outcome measures, the AUC values of all three subscale scores were compared with one another. Furthermore, the AUC values of all predictors (historical risk factors, dynamic risk factors, dynamic protective factors, RS-V total score, and final conclusion A) were statistically compared regarding the outcome measure violence toward staff versus the outcome measure violence toward other detained individuals.

Finally, three further additional ROC analyses were performed to find out whether there was a difference in the predictive validity of the RS-V scores (the subscale scores, the RS-V total score, and the final conclusion A rating) for violent incidents, aggressive

incidents, or any incident between the group of individuals with a short detention period and the group of individuals with a long detention period.

RESULTS

RS-V scores

Table 4.4 displays the mean and standard deviations of the included RS-Vs on the individual factors and the adjusted subscale scores of the RS-V. The dynamic risk factors are rated relatively low compared to the dynamic protective factors, which is reflected in the negative average RS-V total score. Meaning that, on average, there was a greater presence of protective factors in comparison to risk factors in the included sample and that, overall, detained individuals in the present sample behaved relatively well during their prison stay. Regarding final conclusion A, for 74.2% of the individuals, the prison employees had 'low concerns' regarding future violent behavior within the prison. While, for 15.8% and 10.0%, respectively, they had 'moderate concerns' and 'serious concerns'.

Violent incidents, aggressive incidents, and detention duration

The chi-square analyses showed that there was a significant association between detention duration and aggressive behavior ($\chi(1) = 3.892$, $p = .049$, std. residual min = 1.97, std. residual max = 1.97). More specifically, detained individuals within the short detention duration group (12.3%) were more likely to show an aggressive incident than the detained individuals within the long detention duration group (8.8%). For violent incidents or any incident, the differences between the two groups were not statistically different (respectively: $\chi(1) = 3.042$, $p = .081$, std. residual min = 1.74, std. residual max = 1.74; $\chi(1) = 3.423$, $p = .064$, std. residual min = 1.85, std. residual max = 1.85).

Table 4.4 The mean and standard deviations of the included RS-Vs on the unadjusted individual factors and final conclusion A, and the adjusted subscales and RS-V total score.

Statistic	**Historical risk factor subscale**		**Dynamic risk factor subscale**		**Dynamic protective factor subscale**		**RS-V total score**		**Final conclusion A: Concerns regarding violence inside prison**	
M	1.70		1.07		6.18		-3.41		.36	
SD	1.35		1.60		2.11		4.04		.84	
Min. -Max.	0 – 4.80		0 – 8.00		0 – 8.00		-8.00 – 12.20		0 – 2	
Individual factors	Factor H1: Previous interpersonal violence inside prison	Factor H2: Previous interpersonal violence inside prison	Factor R1: Recent interpersonal violence	Factor R2: Substance use	Factor R3: Negative/ defiant attitude	Factor R4: Impulsive behavior	Factor P1: Following rules and agreements	Factor P2: Coping with problems and frustrations	Factor P3: Positive influences from social network	Factor P4: Motivation for crime free future
M	2.17	.66	.14	.42	.30	.22	1.61	1.58	1.47	1.54
SD	1.45	1.16	.43	.69	.62	.54	.67	.67	.73	.68
Min. -Max.	0 – 4	0 – 4	0 – 2	0 – 2	0 – 2	0 – 2	0 – 2	0 – 2	0 – 2	0 – 2

Note. The historical risk factors were recoded into a 3-point scale in the calculation of the total score.

Table 4.5 The Area Under the Curve (AUC) and 95% Confidence Intervals (CI) of the RS-V regarding violent and aggressive incidents within prison

	Historical risk factor subscale		**Dynamic risk factor subscale**		**Dynamic protective factor subscale**		**RS-V total score**		**Final conclusion A: Concerns regarding violence inside prison**	
Incident	AUC	95% CI	AUC	95% CI	AUC	95% CI	AUC	95% CI	AUC	95% CI
Violent incidents (prevalence = 11%)	.746	(.70, .79)	.756	(.70, .81)	.729	(.67, .79)	.805	(.76, .85)	.734	(.68, .79)
Toward staff (prevalence = 6%)	.744	(.68, .80)	.792	(.73, .86)	.770	(.70, .84)	.836	(.79, .89)	.734	(.66, .81)
Toward other detained individuals (prevalence = 6%)	.738	(.68, .80)	.741	(.67, .81)	.710	(.64, .78)	.783	(.72, .85)	.739	(.67, .81)
Aggressive incidents (prevalence = 10%)	.736	(.69, .79)	.775	(.72, .83)	.736	(.68, .79)	.816	(.78, .86)	.694	(.63, .75)
Violent incidents and aggressive incidents (prevalence = 15%)	.731	(.69, .78)	.743	(.70, .79)	.724	(.68, .77)	.795	(.76, .83)	.695	(.64, .75)

Note. All p-values were <.001.

Predictive validity of RS-V ratings for violent and aggressive incidents within prison

The AUC values reflecting the predictive validity of the subscales scores, the total score, and the rating on final conclusion A of the RS-V for violent and aggressive incidents are displayed in table 4.5. All AUC values were statistically significant ($p < .05$), and the majority was large, ranging from .694 to .836. The AUC value of the RS-V total score was significantly higher than the AUC value of the final conclusion A score (concerns regarding interpersonal violence within the prison) for violent incidents, aggressive incidents, and any incident, respectively: $Z = 2.99$ ($p = .003$, 95% CI [0.024, 0.117]); $Z = 5.29$ ($p < .001$, 95% CI [0.077, 0.167]); and $Z = 4.89$ ($p < .001$, 95% CI [0.060, 0.140]). On the contrary, the AUC values of the subscale scores did not significantly differ from each other. In addition, there was no statistical difference between the AUC values of each subscale score, the RS-V total score, and final conclusion A regarding violence toward staff versus violence toward other detained individuals. Finally, there were no significant differences in the predictive validity of the subscale scores, the RS-V total score, and the final conclusion A score (concerns regarding violence inside prison) for violent incidents, aggressive incidents, or any incident between the group of individuals with a shorter detention period and the group of individuals with a longer detention period.

DISCUSSION

This study investigated whether test scores on the novel RS-V are able to predict future violent and aggressive incidents of incarcerated individuals during a 4-month follow-up period within prison. Whereas previous studies included RS-Vs rated by researchers based on digital prison reports retrospectively (Smeekens et al., 2024b, 2024c), this study analyzed RS-Vs from real-life prison practice (i.e., completed by prison employees)[11] and prospective data on violent and aggressive incidents. The results show that the subscale scores, the RS-V total score, and the final conclusion A rating (concerns regarding violence inside the prison) have good to excellent predictive validity for violent incidents, aggressive incidents, and both categories combined. In addition, RS-V scores are predictive of violence and aggression toward staff members as well as violence and aggression toward other incarcerated individuals. Moreover, we found no difference in the predictive validity of RS-V ratings between the group of detained

11 Within the Discussion section, the results of the present prison practice study are compared to the results of two previously conducted retrospective file-based studies. One study investigated the predictive validity of RS-V scores for violent recidivism after release (Smeekens et al., 2024b). The other study had a study protocol similar to that of the present study (Smeekens et al., 2024c), thus analyzing the predictive validity of the RS-V scores for violent and aggressive incidents within prison.

individuals with a short detention duration versus the group of detained individuals with a long detention duration.

The predictive values within this prison practice study were somewhat higher compared to the predictive values within a similar retrospective file-based study (Smeekens et al., 2024c). This suggests that prison employees (without formal training as behavioral experts) who work with detained individuals on a daily basis are able to (more) accurately rate the RS-V based on information available in prison practice. The good predictive validity of RS-V ratings by prison staff may in part be due to their firsthand observations and hands-on experience working with incarcerated individuals in prison practice. This differed from the previous retrospective study, as RS-Vs in that study were completed by researchers who work remotely and rated the RS-Vs based on file information alone. As such, the present study indicates that the RS-V can be completed successfully by general prison staff without specific behavioral expertise.

The predictive validity of the RS-V total score and the final conclusion A rating are both large. However, the discriminant ability of the final conclusion A score is statistically smaller than the discriminant ability of the RS-V total score. A possible explanation for this difference could be that the multidisciplinary discussion of the final conclusions by prison workers is in need of further improvements. Actively discussing possible concerns regarding individual violence risk during multidisciplinary team meetings is a relatively new process within Dutch prison practice, and the implementation process of a new risk screening tool is not a quick and easy endeavor. Instead, it is a process that takes time and requires ongoing attention, user support, and guidance (e.g., regular evaluations). Further monitoring and improving the discussion of the final conclusions by prison workers during the multidisciplinary meetings is an important implication for prison practice. Applying this SPJ-based method for the final conclusions is still preferred above an actuarial method in order to, among others, incorporate the professional judgment and expertise of multidisciplinary prison personnel, to provide the opportunity to include additional personal risk-related information, to further individualize the risk screening, and to facilitate subsequent multidisciplinary discussions regarding follow-up measures. Future studies may offer insight into whether the predictive validity of the final conclusion A rating improves over time as team discussions become more in-depth. Notably, one would expect the predictive validity of the RS-V scores to become lower over time since, if applied correctly, based on the RS-V findings tailored risk management follow-up measures are taken in order to prevent future institutional violence. The good predictive validities of the RS-V test scores, found in the present prospective study, may indicate that risk management was not (yet) fully executed properly during the first months after implementation.

Whereas the previous retrospective file study found that RS-V ratings were only significantly predictive of violence toward staff rather than violence toward fellow incarcerated persons (Smeekens et al., 2024c), the present study found the RS-V scores to be significantly predictive of violence toward both types of victims. These results show that the RS-V can be used to predict individual violent and aggressive incidents, regardless of at whom this behavior is directed (staff or fellow detainees).

Analyses revealed that individuals with a shorter detention duration (until the moment of the screening) were more likely to act out aggressively during the 4-month follow-up than individuals with a longer detention period. This result contradicts previous studies regarding prison misconduct, which found that the incident rate increased with detention duration (Dhami et al., 2007; Marcum et al., 2014; Sorensen & Cunningham, 2007), but supports prior research that found similar results (Flanagan, 1980; Jiang & Fisher-Giorlando, 2002; Zamble, 1992). The finding that a shorter detention period is associated with relatively more aggressive incidents could be explained by the GST. Namely, as individuals spend more time within prison, they may adapt to the prison environment, which makes them better able to cope with the strains that are part of this environment. This improved coping with prison strains over time, may in turn lead to a reduction of aggressive incidents toward others. Research by Zamble, (1992) supports this hypothesis; incarcerated individuals showed improved adaptation during the course of 7 years of imprisonment, which was accompanied by a decrease in disciplinary incidents.

Against our hypothesis, we found no significant differences regarding the predictive validity of the RS-V scores between the group of individuals with a longer detention duration and the group of individuals with a shorter detention duration. More specifically, it seems that the sentence length until the moment of the screening does not influence the predictive validity of the RS-V test scores. This result indicates that the RS-V may be conducted at different time points during incarceration while providing equally reliable and predictive results regarding future institutional violence.

This study showed similar results with the file-based study regarding the occurrence rates of violent incidents, aggressive incidents, and both categories combined (Smeekens et al., 2024c), making these results more robust. Like this file-based study, the present study found rather low base rates of physical violence and violent threats toward other detained individuals (see section 'Limitations and constraints on generality').

This study also looked at the RS-V scores of the included individuals. First, similar to the studies by Smeekens et al. (2024b, 2024c), the results show that the dynamic risk factors are scored relatively low compared to the dynamic protective factors. Second, the two protective factors P3 (positive influences social network) and P4 (motivation crime-free future) contained the most missing values. The number of missing values of the current prison practice study is substantially lower compared to the previous retrospective studies (Smeekens et al., 2024b 2024c). However, it still seems that prison employees sometimes lack information of detained individuals regarding their supportive social network and their motivation to stay out of prison in the future. Therefore, an exploration within Dutch prison practice on how to improve prison workers' knowledge about the social network and motivation for a crime-free future of incarcerated individuals would be useful. For instance, by actively discussing these matters with the detained individual. Enhancing the richness of information used to rate the RS-V will likely further improve its predictive accuracy as the final conclusions are derived from more comprehensive information.

Limitations and constrains on generality

This study has some limitations that should be mentioned. For replicability reasons, based on the study protocol by Smeekens et al. (2024c), the same follow-up period of 4 months regarding violent and aggressive incidents was used. Future studies could include longer follow-up periods (e.g., 6 months, 1 year, or longer) in order to find out whether the RS-V is also able to predict institutional violence on the long term.

A second limitation relates to the included sample of incarcerated persons. In the Netherlands, 69% of the incarcerated persons are released within 3 months (Custodial Institutions Agency, 2022), and the average overall detention duration of Dutch detainees is 4 months (Dutch Custodial Institutions Agency, 2023a). On the contrary, the included sample within this study had an average detention duration of 17 months (until the moment of the screening), which is substantially longer. This is due to the applied inclusion criteria within this study. In order to measure violent and aggressive incidents occurring within prison, we merely included individuals who were still in prison 4 months after the screening. In addition, part three of the RS-V is completed during the second multidisciplinary team meeting (usually within 6 weeks after admission), and we only included fully completed RS-Vs. Furthermore, many of the RS-Vs that were included in this study stem from a period shortly after implementation of the RS-V in prison practice (see section 'Method'). At the time of the implementation, it was agreed that screening with the RS-V would be carried out for all individuals incarcerated at that moment, meaning that these RS-Vs concerned a relatively high number of longer stay individuals that had previously never been screened before. Therefore, the participants

in this study have a relatively long detention period. As a consequence, the findings of this study generalize well to detained individuals who are in need of longer term risk management, but the results may not generalize as well to those with shorter detention stays.

A third limitation that should be mentioned is related to the occurrence rates of the incidents that were retrieved from the digital detainee files. We were not able to run separate analyses for the group of females due to the low base rates of violence and aggression within this subgroup. Furthermore, within U.S. prisons, approximately 21% of the males and females reported prisoner-to- prisoner physical violence during a time frame of 6 months (Wolff et al., 2007), and in England, 33% of the incarcerated individuals indicated that they had received a violent threat at some time during their prison stay (King & McDermott, 1995, as cited in Bottoms, 1999). As can be seen in table 4.3, relatively low base rates of physical violence and violent threats are found within this study. It may be the case that this is an underrepresentation of the actual violence base rates, especially for women, or perhaps violent behavior is less common in general in Dutch prisons. What is more, the results of the screening could have subsequently led to individual differences in personalized risk management strategies in order to prevent future violent behavior. These strategies may have been of possible confounding influence on our violence base rates and may in fact have had a dampening effect on the predictive validity findings in this study. For whatever reason, the differences in violence base rates between settings may dampen the transferability of the current findings. Further empirical validation studies in other settings and countries are therefore recommended. In addition, future research could look into which follow-up measures are instated based on the findings of the RS-V and how these may have had a preventive effect on violent incidents occurring.

Conclusion

This multisite prison practice study regarding the predictive validity of the RS-V test scores for violent and aggressive incidents of incarcerated individuals is an important step in the further validation of this tool for use within prison practice. It can be concluded that, both retrospectively and prospectively, RS-V scores are able to predict the occurrence of future violent and aggressive behavior of individuals within the prison. In addition, this study reveals that RS-V ratings are able to predict inmate-on-inmate physical assault as well as inmate-on-staff physical assault. Finally, the RS-V may be administered at different time points during incarceration without the predictive validity of its scores being affected. Therefore, together with the previous retrospective studies, the present study provides further evidence that the RS-V, as a relatively new risk screening instrument, is able to be utilized as a valuable support tool in overall

risk management (provided that follow-up measures are taken when concerns about future violence are serious).

This study explained the specific administration process of the RS-V within Dutch prison practice. This description may be a useful example for other prison settings who wish to implement the RS-V in their work processes. The RS-V may serve as a relevant initial evaluation of the most important risk and protective factors, which aims to enhance prison safety and improve personalized intervention efforts. It could also provide triage on the basis of which more extensive risk assessment instruments or the involvement of behavioral experts is recommended. To ensure proper use of the tool and maximize its value for prison practice, continually monitoring the correct application of the RS-V and providing ongoing user/implementation support in Dutch prison practice remains important. Since the RS-V also aims to address concerns regarding future violent behavior in the community after release (final conclusion B), an important next step is to find out whether RS-Vs completed prospectively by prison employees are also predictive of future violent recidivism after release from prison.