



## Psychometric properties and predictive validity of a police version of a violence risk screen – A pilot study



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### ABSTRACT

The Violence Risk Screening – Police Version (V-RISK-POL) is a seven-item screening tool for use at police stations by police officers and law enforcement officials to assist in the process of decision making regarding release, restrictive measures or arrest for apprehended individuals where the risk of future violence must be considered. The screen is based on the V-RISK-10, originally developed for emergency psychiatry. We examined psychometric properties and the prospective predictive validity of future violent convictions for the V-RISK-POL in a sample of 111 persons arrested for suspicion of violent crimes. Seventeen persons were convicted for a new violent crime committed during the 24–40 months follow-up. The V-RISK-POL demonstrated good internal consistency; Cronbach's alpha = 0.81 (95% CI = 0.75–0.86) and moderate predictive validity; the area under the curve of the receiving operator characteristics (AUC) = 0.753 (95% CI = 0.644–0.843). Further research on larger and more heterogeneous samples is necessary to examine whether the screen may be useful in the police context.

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### 1. Introduction

The past three decades have seen a change from reactive responding to proactive approaches in the prevention of violence in society through community policing (Chappel & O'Brien, 2014). At the start of this process, Borum, Deane, Steadman, and Morrissey (1998) claimed that this change actually was a paradigm shift from traditional law enforcement to community-oriented models. Police officers who encounter potentially violent incidents are confronted with a series of different decisions they are required to make. First, they have to evaluate the likelihood of an imminent risk of violence. Second, they must make a judgment about what the future risk for violence may be. Finally, they need to decide on how to prevent future risk. Being a police officer requires taking urgent action to prevent *imminent* violence and making the necessary decisions involves demanding personal and professional challenges. Still, the issues involved in how to prevent *future* incidents may be even more complicated. Typically, this kind of decision will involve choosing between, for instance, release, prosecution, restrictive measures such as arrest or restraining orders, or recommendation for psychiatric treatment. For many years, police officers and officials have determined the risk levels of violent persons by intuition (Dayan, Fox, & Morag, 2013).

Up to the early 1980s, such unstructured and intuitive decisions also dominated violence risk assessment in mental health services. However, from that time on, actuarial and structured professional judgment (SPJ) approaches gradually replaced the dominant unstructured risk assessment paradigm. The most important factor in this change was the development and validation of structured assessment tools for a wide variety of subgroups of violence.

About a decade ago, a parallel process of replacing unstructured and intuitive violence risk assessment with structured tools started in policing. This process increased the demand for further development of efficient risk assessment tools, and the current use of such tools to inform efforts to prevent violence is steadily growing in police work (Belfrage et al., 2012). Still, this change has not produced a very large number of assessment tools adapted for use in policing. The great majority of these instruments have been created for identifying risk for intimate partner violence (IPV). Examples of such tools are the Brief Spousal Assault Form for the Evaluation of Risk (BSAFER) (Kropp, Hart, & Belfrage, 2010), the Spousal Assault Risk Assessment Guide (SARA) (Kropp, Hart, Webster, & Eaves, 1999), and the Ontario Domestic Assault Risk Assessment Guide (ODARA) (Hilton et al., 2004). Even though there are relatively few empirical studies on how these tools work in policing, a brief look at some findings may be informative.

As part of a multicenter study, Belfrage et al. (2012) tested the predictive validity of the 20-item Spousal Assault Risk Assessment Guide (SARA). Overall the results indicated that the association between

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SARA assessment and recidivism was small in magnitude. Results from testing of the predictive validity of summary risk ratings (low, moderate or high risk) were very weak.

The Brief Spousal Assault Form for the Evaluation of Risk (B-SAFER) comprises 10 perpetrator risk factors and 5 victim vulnerability factors. Storey, Kropp, Hart, Belfrage, and Strand (2014) examined the B-SAFER used by Swedish police officers in the assessment and management of IPV. Results were positive with total scores and overall risk ratings that predicted recidivism. However, validation of the use of police management plans based on the B-SAFER showed decreased recidivism in high-risk perpetrators but increased recidivism in low-risk perpetrators. The authors suggested that the B-SAFER may be better suited than the SARA for police work.

The Ontario Domestic Assault Risk Assessment Guide (ODARA) is a 13-item, cross-validated actuarial assessment tool designed to estimate the risk of spousal/partner assault recidivism. It comprises both static and dynamic risk factors and, in contrast to the SARA and B-SAFER, it was originally developed for use by police officers, service workers, courts, and so forth. Results from tests of predictive validity have varied from good to poor (Ulmer, 2015).

The magnitude of predictive validity estimates for SARA, B-SAFER and ODARA have varied within each tool in different investigations. Thus, although some recent publications have reported on tests of the predictive validity of risk assessment tools for IPV used by the police, no firm conclusions can be made concerning their efficiency (Belfrage et al., 2012; Dayan et al., 2013; Ulmer, 2015). Furthermore, these tools require training and are quite time-consuming because of the relatively high number of items (13–20) and because some of the necessary background information is not easy to get. Obtaining information from social networks and, in particular, from previous and potential future victims is necessary for scoring items such as “Recent relationship problems” (Item 4, SARA), “Victim concern about future assaults” (Item 7, ODARA), and “Intimate Relationship Problems” (Item 7, B-SAFER). It is not always easy to contact the relevant individuals, and some of them may be reluctant to provide any information at all. To rely only on perpetrator self-report is inadvisable.

The V-RISK-POL is a seven-item violence risk checklist developed for use at police stations by police officers and law enforcement officials. The checklist is based on the Violence Risk Checklist-10 (V-RISK-10) (Bjorkly, Hartvig, Heggen, Brauer, & Moger, 2009), an instrument that was developed for screening violence risk in inpatient settings and after discharge from emergency psychiatric units. The V-RISK-10 was developed in response to the need for a violence risk instrument that could easily be used in general and particularly in emergency psychiatric units. Such units are characterized by high turnover, high time pressure, often inexperienced professionals on duty, and being open around the clock all year round. The existing instruments at that time, such as the HCR-20 and others, were comprehensive, time-consuming and required qualified expertise. The V-RISK-10 was developed based on the results of a pilot project exploring 33 selected risk factors (Hartvig, Alfarnes, Østberg, Skjønberg, & Moger, 2006). It consists of 10 items: 5 historical items (previous or present physical violence, previous or present threats of violence, previous or present substance abuse, previous or present severe mental illness, and personality disorders), 3 clinical items (lack of insight, suspiciousness, and lack of empathy) and 2 future/risk management items (unrealistic plans and stress exposure).

Tests of interrater reliability have shown that the screen has good interrater reliability (intraclass correlation coefficient (ICC) = 0.87) (Bjorkly et al., 2009; Roaldset, Hartvig, & Bjorkly, 2011). Research has also shown that the tool has high predictive accuracy for inpatient violence (Area under the curve [AUC] of the receiver operator characteristics of 0.83) and of outpatient violence within 3 months (AUC = 0.80) and 12 months (AUC = 0.75) after discharge (Hartvig, Roaldset, Moger, Østberg, & Bjorkly, 2011; Roaldset et al., 2011). The checklist also significantly identified violent behavior within the first year after discharge from psychiatric hospital in persons without previously

known violent behavior and showed higher predictive accuracy for seriously violent acts compared with moderate or light violent acts and violent threats (Roaldset et al., 2011).

The V-RISK-10 was transformed into a seven-item police-version tool V-RISK-POL. This was done by combining the two items “physical violence” and “threats of violence” into one item (violence) and by excluding two items, “personality disorders” and “unrealistic plans”, from the original V-RISK-10 (Roaldset et al., 2011). There are some parallels between the use of V-RISK-POL in police work and the V-RISK-10 in acute psychiatry. Both services have a high turnover of service users, high time pressure for evaluation and assessment, and the obligation to be operative 24 h a day all year round. Furthermore, many arrested persons with violence issues show emotional instability or display conduct problems or psychiatric symptoms (Lamb, Weinberger, & DeCuir, 2002).

Still, there are also distinct differences between the competency of police officers and mental health professionals. Medical doctors and specialists in psychiatry and clinical psychology are qualified for diagnosing severe mental illness and personality disorders (V-RISK-POL, Item 3). They also have high competence in assessing dynamic factors, such as lack of insight (Item 4), suspiciousness (Item 5), and lack of empathy (Item 6). However, their information regarding previous violence (Item 1) from patients outside the treatment context is limited, and they often have to contact the police for further information. Because previous violence is the strongest predictor of future violence, this information is a cornerstone in risk assessment of violence. Police officers are clearly closer to this information than mental health professionals are. Another advantage for police officers is the availability of direct observations or information from colleagues concerning a given individual's behavior in very stressful interactions (Item 7) before, during, or after violent incidents. They can also often closely observe how the influence of substance abuse (Item 2) works on a person's cognitive, emotional and behavioral coping.

To our knowledge, validation research on violence risk judgment in policing has, so far, only used tools made for assessment of risk for IPV. The fact that police are confronted with other types of violence more often than they are with IPV was one of the main reasons for the development of the V-RISK-POL. We also wanted to create a screening instrument that is easy to use and time-efficient. The checklist does not require extensive training. The aims of this prospective, naturalistic investigation were to test the reliability and the predictive validity of the V-RISK-POL ratings for violent convictions during a follow-up period after initial arrest.

## 2. Methods

### 2.1. Design

This was an observational prospective study conducted in a naturalistic context. Violence risk was assessed at the time of arrest (baseline) and compared with convictions for violent crimes during the 24 to 40 months follow-up period.

### 2.2. Setting

From August 2012 to December 2013, persons who were arrested and suspected of violence were screened with the V-RISK-POL checklist by police officers and law enforcement officials at Sunnmøre police district. The police district consisted of four police stations and covered about 130,000 inhabitants in a semirural and small-town area on the west coast of Norway.

### 2.3. Sample

The target population consisted of all persons arrested for violence or threats of violence ( $N = 133$ ). Seven persons arrested as suspects

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