The four-factor model of the Psychopathy Checklist—Revised: Validation in a Dutch forensic inpatient sample

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ARTICLE INFO

ABSTRACT

In The Netherlands, the Ministry of Security and Justice requires the assessment of the Psychopathy Checklist—Revised (PCL-R; Hare, 1991; Hare, 2003) in all forensic psychiatric inpatients. To examine the four-factor structure of the Psychopathy Checklist—Revised, confirmatory factor analysis (CFA) was conducted using a Dutch sample of forensic psychiatric inpatients ($N = 411$) and the results indicated acceptable fit. Also, using multiple group CFA, the four-factor model provided an acceptable fit in both patients with a personality disorder and patients with a psychotic disorder, and there was reasonably good evidence of measurement invariance between these two subgroups. Furthermore, correlations with external measures of aggression and personality traits provided additional support for the validity of the four-factor model in patients with a personality disorder. In patients with a psychotic disorder fewer significant correlations with external measures were found. Taken together, the results support the use of the four-factor structure in Dutch offenders who are detained under hospital order.

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1. Introduction

In Dutch forensic psychiatric settings, the Psychopathy Checklist—Revised (PCL-R; Hare, 1991, 2003) is required to be administered according to the Ministry of Security and Justice, given its ability to predict recidivism and disruptive institutional behavior (Hare & Neumann, 2009). A number of studies have indeed demonstrated that the PCL-R is a predictor of violent and non-violent recidivism (Douglas, Vincent, & Edens, 2006; Hare & Neumann, 2008; Hildebrand, Hesper, Spreen, & Nijman, 2005; Mokros, Vohs, & Habermeyer, 2013). For example, the study by Hildebrand et al. (2005) demonstrated that the PCL-R (Hare, 1991) may be a better predictor of recidivism than the Historical Clinical Risk management 20 (HCR-20; Webster, Douglas, Eaves, & Hart, 1997) and Historisch Klinisch Toekomst—30 (HKT-30; Dienst Justitiële Inrichtingen, 2002). As a result of these studies, the PCL-R has important criminal justice implications in The Netherlands as it is often used as a tool in decision-making about leave or discharge.

The link between PCL-R scores and different forms of aggressive behavior has been the topic of multiple studies. Several authors have demonstrated that violent patients with a relatively low score on psychopathy mainly show reactive aggression, whereas those with a relatively high score tend to be both reactively and proactively aggressive (Cima & Raine, 2009; Cornell et al., 1996; Woodworth & Porter, 2002). These two forms of aggression seem to be related to different dynamic criminogenic needs and consequently require a different treatment approach (Andrews & Bonta, 2003). Therefore, whether a patient exhibits mainly reactive aggression or both reactive and proactive aggression requires a thorough assessment of the determinants of violent behavior, including the degree of psychopathy.

The Dutch Ministry of Security and Justice broadly distinguishes two groups in forensic psychiatric inpatients: patients with a (chronic) psychotic disorder and patients with a personality disorder as their primary diagnosis. Although these two groups have unique features which might lead to criminal behavior, like threat/control-override symptoms in the case of patients with a chronic psychosis (Link & Stueve, 1994; Nederlof, Muris, & Hovens, 2011), they also seem to share common risk factors such as psychopathy (Hill, Neumann, & Rogers, 2004; Neumann, Hare, & Newman, 2007; Tengström, Grann, Langström, & Kullgren, 2000; Vitacco, Neumann, & Jackson, 2005). However, until now, no study that examined the factor structure of the PCL-R and its relation to external measures while distinguishing between chronic

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psychotic and personality disordered patients can be found. As discussed below, research has generally relied on studying combined subsamples of heterogeneous groups of forensic psychiatric patients.

1.1. Factor structure of the PCL-R

The underlying factor structure of the PCL-R has been a research topic for the last two decades. However, depending on the analytic approach that has been used (cf. Neumann, Kosson, & Salekin, 2007), studies about the factor structure have often resulted in a variety of somewhat divergent conclusions. Initial studies with a 22-item version and the definitive PCL-R with 20 items yielded evidence for a two-factor structure (Hare, 1991; Harpur, Hakstian, & Hare, 1988; Harpur, Hare, & Hakstian, 1989). Although this two-factor structure was confirmed in several studies (e.g., Hobson & Shine, 1998; Pham, 1998), other researchers could not always find an adequate fit in samples of North American minimum-security inmates (McDermott et al., 2000), sex offenders (Weaver, Meyer, Van Nort, & Tristan, 2006), and Dutch violent forensic psychiatric inpatients (Hildebrand, De Ruiter, de Vogel, & van der Wolf, 2002).

In 2001, Cooke and Michie noted that the available research "does not provide compelling evidence for the adequacy of a two-factor model for psychopathy" (p. 172). Consequently, they proposed an alternative model that was more focused on psychopathy as a personality construct and less on criminality. Using item-response theory, confirmatory factor analysis, cluster analysis, and various rational proposals for their analysis of 1389 North American prisoners and forensic psychiatric inpatients, they suggested that a hierarchical three-factor model provided a better fit than the original two-factor model. In this three-factor model, the first factor of Hare's two-factor model was divided into two separate factors, whereas the third factor consisted of only five items. Other remaining items which they believed only measured criminal behavior were discarded, because criminal behavior was in their opinion best viewed as a secondary feature of psychopathy (Cooke, Michie, Hart, & Clark, 2004). This three-factor model was disputed by Hare (2003) and colleagues (Hare & Neumann, 2008, 2010; Neumann, Vitacco, Hare, & Wupperman, 2005; Vitacco, Rogers et al., 2005). Based on factor analysis, item response theory and multidimensional scaling, Hare and Neumann (2005, 2006) proposed a model with four correlated factors, namely Interpersonal (glib/superficial charm, grandiose self-worth, pathological lying, conning/manipulative), Affective (lack of remorse or guilt, shallow affect, callous/lack of empathy, failure to accept responsibility for actions), Lifestyle (need for stimulation/proneness to boredom, impulsivity, irresponsibility, parasitic lifestyle, lack of realistic long-term goals), and Antisocial (poor behavior controls, early behavior problems, juvenile delinquency, revocation of conditional release, criminal versatility). This four-factor model is highly comparable to the traditional two-factor model (Hare & Neumann, 2008), given that each factor of this two-factor model is split up into two separate factors (factor 1 into an Interpersonal factor and an Affective factor; Factor 2 into a Lifestyle factor and an Antisocial factor). Based on an extensive review of the literature, Hare and Neumann (2008) proposed that "the presence of early and persistent antisocial behavior is an important feature of the psychopathy construct" (p. 62). Relatedly, these authors suggested that psychopathy and its specific features could also be viewed in terms of extreme variants of normal personality traits and behaviors.

Hare's four-factor model has been confirmed in several large PCL-based studies, including forensic psychiatric inpatients (Hill et al., 2004), a combined sample of offenders and forensic psychiatric inpatients, which included both males and females (Neumann, Hare, & Newman, 2007), civil psychiatric patients (Vitacco, Neumann et al., 2005), mentally disordered offenders (Vitacco, Rogers et al., 2005), and adolescents (Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002; Neumann, Kosson, Forth, & Hare, 2006). Recent research with Canadian (Olver, Neumann, Wong, & Hare, 2012)

and Swedish offenders (Neumann, Hare, & Johansson, 2012) has further confirmed the validity of the four-factor PCL-R model. Furthermore, the four-factor model has been examined for invariance of model parameters across a wide range of samples and methodologies, including male and female offenders and psychiatric patients (Bolt, Hare, Vitale, & Newman, 2004), North American and German offenders (Mokros et al., 2011), male civil psychiatric patients (Jackson, Neumann & Vitacco, 2007), and adolescents (Kosson et al., 2012; Neumann et al., 2006), as well as a mega-world general population sample using the Self-Report Psychopathy (SRP) scale (Neumann, Schmitt, Carter, Embley and Hare, 2012). In all these studies the evidence for invariance across diverse groups has generally been good, as well as providing further support for the four-factor model.

1.2. PCL-R factors in relation to external measures

To provide a better understanding of the PCL factors, a number of studies have addressed their relation to external correlates of psychopathy, including mental disorders (e.g., Hildebrand & De Ruiter, 2004), criminality (Blackburn & Coid, 1998), normal-range personality traits (Lynam & Derefinko, 2006), different forms of aggression (Cima & Raine, 2009; Cornell et al., 1996; Woodworth & Porter, 2002), violence in the community (Vitacco, Neumann et al., 2005), and institutional aggression (Guy, Edens, Anthony, & Douglas, 2005; Hildebrand, De Ruiter, & Nijman, 2004; Hill et al., 2004). The relation between the original two PCL-R factors (Hare, 1991) and "institutional adjustment" was examined by Walters (2003b) by means of a meta-analysis of 41 studies in different populations such as maximum adult security forensic psychiatric patients and juvenile security state school inmates. Institutional adjustment had been operationalized as "verbal infractions" or "physical aggression". The original factor 2 of the PCL-R appeared to have a moderately well positive correlation with institutional adjustment, whereas the original factor 1 showed less robust associations. Guy et al. (2005) refined this analysis and found less evidence for divergent relationships between the two original PCL-R factors and various types of aggressive and violent behavior. In their study, the relation between PCL-R total, factor 1, and factor 2 scores on the one hand, and "General aggression" on the other hand, yielded low mean weighted effect sizes.

Most of the research has also indicated that in particular the original factor 2, which primarily refers to socially deviant behavior, is a good predictor of problem behaviors such as alcohol abuse (e.g., Reardon, Lang, & Patrick, 2002), drug abuse (e.g., Lammers, 2009), aggressive behavior (e.g., Walters, 2003a), and even violent recidivism (e.g., Douglas et al., 2006; Hildebrand et al., 2005). Relations between the original factor 1 and these forms of problem behavior are often modest or even absent. However, given the emerging evidence that the four PCL-R factors may have differential links to various external correlates (Hare & Neumann, 2008), studies based on the older two-factor conception of the PCL may have missed the opportunity to uncover such a pattern of findings. Some studies employing the four-factor model of the PCL-R have shown similar results as the relation between the Lifestyle factor and the Antisocial factor with (violent) recidivism is often confirmed (e.g., Olver et al., 2012), while others have documented a more nuanced pattern of differential associations with violent (Vitacco, Neumann et al., 2005) or aggressive behavior (Hill et al., 2004).

1.3. PCL-R in forensic patients with a psychotic disorder

Several studies have specifically investigated the PCL-R in patients with a psychotic disorder. However, studies that focused on the applicability of the four-factor model are limited in this subgroup of patients. Hill et al. (2004) applied a confirmatory factor analysis to investigate the two-, three-, and four-factor model of the PCL-R Screening Version (PCL-R:SV; Hart, Cox, & Hare, 1995) in a sample of 149 male forensic psychiatric inpatients with mainly psychotic disorders. Results showed