A bifactor model of the Polish version of the Hare Self-Report Psychopathy Scale

Agata Debowska [a,*], Daniel Boduszek [a], Susanna Kola [a], Philip Hyland [b]

[a] University of Huddersfield, UK
[b] National College of Ireland, Dublin, Ireland

ABSTRACT

The 64-item Hare Self-Report Psychopathy Scale was translated into Polish with the aim to test construct validity and dimensionality, incremental validity, and composite reliability of the measure in a sample of working adults ($N = 319$). Confirmatory factor analyses revealed that the best fitting model was the bifactor conceptualization containing six latent factors; two general factors of psychopathy and four grouping factors represented by interpersonal, affective, antisocial, and lifestyle latent variables (compared to a 2-factor, 4-factor, and 4-factor with 2 hierarchical factors). The scores of the Polish version of Hare SRP evidenced good composite reliability and incremental validity in terms of predicting scores on aggression scale. Implications for theory and future research are discussed.

1. Introduction

Psychopathy is often presented as a complex set of dimensions which makes the disorder extremely difficult to capture and define (Ogloff, 2006). Consequently there is much debate in the literature with regards the underlying factor structure of psychopathy.

The most prominent and widely-used measure of psychopathy is the Psychopathy Checklist-Revised (PCL-R; Hare, 1991; Hare, 2003). However, the PCL-R must be completed by a highly trained clinician, which requires extensive amounts of time and access to collateral records of the individual being assessed (Lilienfeld & Fowler, 2007). Furthermore, problems exist with the PCL-R in terms of establishing the latent structure of the construct. Although the scale consists of 20 items, only 18 items are identified as loading onto two factors: (1) Interpersonal/Affective and (2) Lifestyle/Antisocial.

With these limitations in mind, a number of self-report measures of psychopathy have been developed in recent years, one of them being the *Self-Report Psychopathy Scale* (SRP; Hare, 1985). The first version of the SRP consisted of 29 items however the scale possessed poor psychometric properties (Lilienfeld & Fowler, 2007). In order to address those issues, a revised version of the

measure was created (Hare, Harpur, & Hemphill, 1989; as cited in Williams & Paulhus, 2004). The SRP-II consisted of 60 items, 31 of which form the core of the scale and align with the two factors of the PCL-R (Williams & Paulhus, 2004). In a validation study of the SRP-II among a forensic sample, Hare (2003) reported a moderate correlation between the SRP-II and PCL-R ($r = .54$). Nevertheless, Williams and Paulhus' (2004) exploratory factor analysis of the SRP-II found the two-factor model upon which the PCL-R was developed did not represent a good explanation of the data. The SRP-II was instead best represented by an alternative two-factor model. The first factor combined antisocial behaviour, impulsivity and interpersonal manipulation subscales. The second factor included items pertaining to affective deficits.

The newest version of the SRP, the SRP-III (Paulhus, Neumann, & Hare, in press), consists of 64 items measured on a five-point Likert scale. The instrument was reported to be best captured by a four-factor solution, with 16 items loading on the four factors of *Interpersonal Manipulation*, *Callous Affect*, *Erratic Lifestyle*, and *Antisocial Behaviour*. Neal and Sellbom (2012) investigated the factor structure of the SRP-III among a sample of undergraduate students. The authors compared four alternative models and results indicated the four-factor model suggested by Paulhus et al. (in press) proved to be the most accurate representation of the data, however, none of the models met acceptable model fit criteria as measured by fit indices. The researchers suggested that the unsatisfactory results were likely due to the large indicator-to-factor ratio and hence a parcelling technique developed by Cattell and

* Corresponding author. Address: University of Huddersfield, Department of Behavioural and Social Sciences (Ramsden Building R2/23), Queensgate, Huddersfield HD1 3DH, UK. Tel.: +44 1484 471887.
E-mail address: agata.debowska@gmail.com (A. Debowska).

Burdsal (1975) was employed. Neal and Sellbom (2012) created 16 radical parcels, each containing indicators from the same hypothesised factor. The same alternative models were estimated for the transformed scale. The technique was successful in improving the fit indices. As hypothesised, the instrument was best captured by the same four-factor solution whose model fit criteria were found to be satisfactory.

The above studies reveal promising findings as to the usefulness of the SRP-III and provide evidence that psychopathy is best conceptualised as four factorial solution. However, based on work with the PCL-R, a variety of factorial solutions have been identified including correlated two- (Harpur, Hakstian, & Hare, 1988; Hare et al., 1990), three- (Cooke & Michie, 2001), and four- (Hare 2003; Hare & Neumann, 2006) factor models. More recently a number of authors have utilised an alternative model structure which may yield a theoretically and statistically satisfactory solution to the debate. This involved the application of bifactor modelling procedures.

Bifactor modelling provides an empirically and conceptually distinct alternative to traditional CFA model solutions. Bifactor modelling views covariation among observable indicators to be explained by both "general factors" and "grouping factors" which exist at the same conceptual level. Reise, Moore, and Haviland (2010) argue that the necessity of creating heterogeneous item sets to capture the complexities of a psychological construct can often produce spurious evidence of multidimensionality in instances where scales are actually capturing a smaller number of latent factors.

Initially, Patrick, Hicks, Nichol, and Krueger (2007) investigated a number of competing latent models of the PCL-R including a bifactorial conceptualisation. These researchers found that a bifactor model including a single general "psychopathy" factor and two grouping factors in-line with Hare's original two-factor model of psychopathy (interpersonal/affective and social deviance) was the best fit of the data. Flores-Mendoza, Alvarenga, Herrero, and Abad (2008) subsequently investigated the latent structure of psychopathy using the PCL-R, with the inclusion of the bifactor model suggested by Patrick, Hicks, Nichol, and Krueger (2007). This study was performed among 124 male prisoners, and results indicated that the bifactorial solution was a better representation of the data than any other tested model.

Although these studies suggest the utility of applying a bifactorial model solution, the results are difficult to interpret based on existing theoretical models of psychopathy. Psychopathy has never been theorised to reflect a single latent construct as reflected in models of Patrick et al. (2007) and Flores-Mendoza et al. (2008). Consequently, Boduszek, Dhingra, Hyland, and Debowska (in press) sought to examine the underlying structure of psychopathy using the Psychopathy Checklist-Screening Version (PCL-SV; Hart, Cox, & Hare, 1995). Boduszek et al. (in press) retained the use of a bifactorial procedure, however, they tested a model in-line with theoretical formulations. This bifactorial solution included two general factors of psychopathy (Interpersonal/Affective and Antisocial/Lifestyle), and four grouping or method factors (Interpersonal, Affective, Antisocial Behaviour, and Erratic Lifestyle) that were hypothesised to arise as a consequence of heterogeneous item content. This new bifactorial model was found to be statistically superior to all other tested models. It was also consistent with Hare's (1991) original model of psychopathy (two factors of Interpersonal/Affective and Antisocial/Lifestyle), while also accounting for previous results which have suggested a greater degree of multidimensionality; namely that the presence of these additional factors is simply a method effect.

The current study is carried out to further investigate the underlying factor structure of the SRP-III using both traditional CFA techniques and bifactor modelling procedures. The current study is performed on the Polish version of the SRP-III and will thus add valuable evidence as to the scale cross-cultural applicability. It is hypothesised that a bifactorial solution consistent with the findings of Boduszek et al. (in press) will represent the best fit of the data.

2. Method

2.1. Participants

The opportunistic sample consisted of 319 Polish working adults recruited at the University of Security in Poznan (Poland). Participants ranged in age from 19 to 51 years (M = 25.16, SD = 6.24). The sample consisted of 175 males and 144 females. Additionally, 77.4% of participants reported being unmarried (*n* = 247), 20.7% being married (*n* = 66), 1.6% being divorced (*n* = 5), and 0.3% being widowed (*n* = 1).

2.2. Measures

Hare Self-Report Psychopathy Scale (SRP-III; Paulhus et al., in press) is a self-report measure modelled on the Psychopathy Checklist-Revised (PCL-R; Hare, 2003). It is composed of 64-items which fall into four subcategories of psychopathy: Interpersonal Manipulation (IPM – 16 items; α = .83), Callous Affect (CA – 16 items; α = .76), Erratic Lifestyle (ELS – 16 items; α = .76), and Antisocial Behaviour (ASB – 16 items; α = .80). Responses are measured on a five-point Likert scale. The SRP-III used in the current study was translated to Polish by a professional translator. In order to ensure that the meaning has been retained, the Polish version was translated back to English. The two versions were then presented to three experts who suggested minor changes.

The Buss-Perry Aggression Questionnaire – Short Form (BPAQ) (Bryant & Smith, 2001; Buss & Perry, 1992). The original BPAQ consists of 29 items rated on a 5-point Likert scale. The measure was translated to Polish by the AMITY Institute (Instytut AMITY, n.d.). It contains all 29 items from the original version of the questionnaire, however, for the purpose of the present research, only 12 items composing the abbreviated version of the instrument have been used (α = .83).

2.3. Procedure

The measures were administered in groups of up to 40 individuals. Participants gave an informed consent to take part in the study. All participants completed an anonymous, paper and pencil questionnaire which was compiled into a booklet along with an instruction sheet and a consent form attached to the front of the booklet. The participation was voluntary without any form of reward. On completion, participants were debriefed on the purpose of the study.

2.4. Statistical analysis

Confirmatory factor analyses (CFA) along with the utilisation of a confirmatory bifactor modelling approach using MPlus version 6.12 were performed in order to test construct validity and dimensionality of the Polish version of the SRP-III. Four alternative models of the instrument were specified and estimated using robust maximum likelihood estimation. Data was missing completely at random (less than 1%) and full information maximum likelihood (FIML) option was selected. Goodness-of-fit indices were used to compare different theoretical models. The first model specified investigated psychopathy as a two-factor phenomenon (Interpersonal/Affective and Lifestyle/Antisocial – Fig. 1). The second model reflected four dimensions of the measure (Interpersonal, Affective,