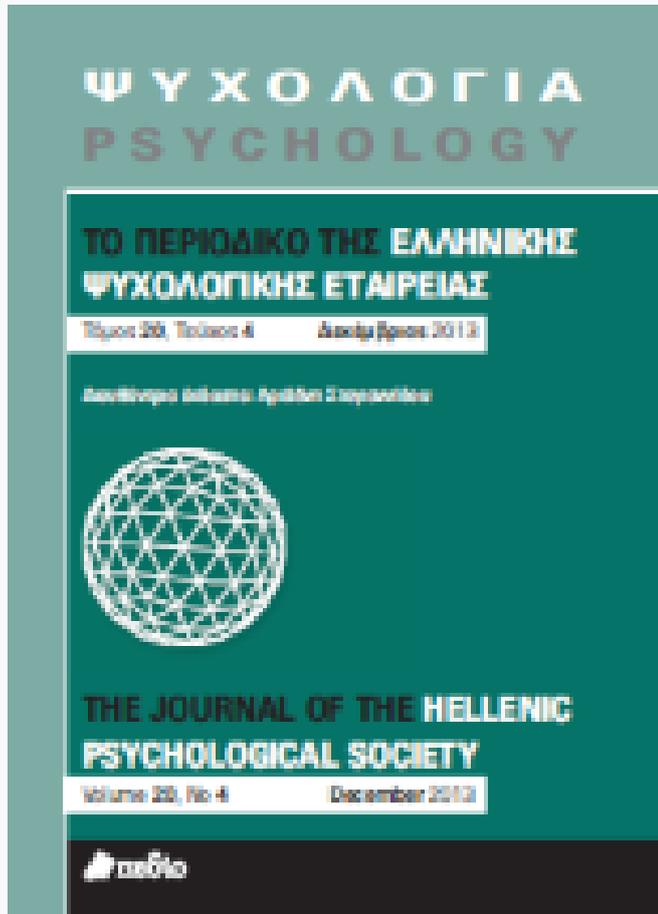# Psychology: the Journal of the Hellenic Psychological Society

Description of the basic psychometric characteristics and the factor structure of the Greek version of the Pathological Narcissism Inventory

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Description of the basic psychometric characteristics and the factor structure of the Greek version of the Pathological Narcissism Inventory

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ABSTRACT

The aim of this study was to examine the basic psychometric properties of the Greek version of the Pathological Narcissism Inventory (PNI; Pincus, Ansell, Pimentel, Cain, Wright & Levy, 2009). The PNI is a self-report scale recently developed to measure both narcissistic grandiosity (Exploitativeness, Grandiose Fantasy, Self-sacrificing Self-enhancement) and narcissistic vulnerability (Contingent Self-esteem, Hiding the Self, Devaluing, Entitlement rage). The English version of the PNI was translated to Greek and administered to 283 University students. Confirmatory factor analysis was used to investigate its factor structure in the Greek sample. Several models were evaluated: a. the initial seven-factor first-order model, b. three second-order models with two second-order latent factors (Grandiosity, Vulnerability), c. three second-order models with three higher order latent factors (Grandiosity, Vulnerability, Malignancy). Goodness-of-fit indices showed better fit for the seven-factor structure, however, acceptable fit was also achieved for most of the second-order models as well. Reliability coefficients were within the acceptable standards for all subscales. The models are evaluated theoretically and the advantages of assessing narcissism in Greece with the PNI are discussed.

Keywords: Pathological narcissism, Vulnerability, Grandiosity, Confirmatory factor analysis, PNI.

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1. Introduction

Narcissism as a theoretical construct has been widely used in the psychological literature across time and theories. With regard to psychoanalytical theories, Freud's elaboration on narcissism (1914), and his differentiation between primary and secondary narcissism, initiated an ongoing debate on its manifestations and theoretical and clinical implications (Kernberg, 1970,1975;Kohut, 1968, 1971,1972). The term has been employed ever since to depict both adaptive personality traits arising along the lines of normal psychosexual development and dysfunctional patterns of relating to the self and significant others. Pincus et al. (2009) describe normal narcissism as "one's capacity to maintain a relatively positive self-image through a variety of self, affect-, and field-regulatory processes" (p. 365). Moreover, they associate it with people's needs for validation and achievement motivation. Pathological narcissism, on the other hand, can be best conceptualized as a pattern of regulatory deficits and maladaptive strategies employed in order to preserve a positive, or even inflated, self-image in the face of disappointment (Pincus et al., 2009). The authors view normal and pathological narcissism as two distinct dimensions of personality.

Regarding pathological narcissism, clinical theories have described variations in its expression and manifestations that either focus on grandiosity or vulnerability (Cain, Pincus, & Ansell, 2008). Narcissistic grandiosity refers to a grandiose sense of self that does not originate from actual accomplishments. It is characterized by a sense of entitlement, fantasies of unlimited power and superiority, exploitativeness, exhibitionism, aggre-ssion, and lack of empathy. All or many of these characteristics are sometimes present with what appear to be contradictory tendencies, such as attempts to help or even save others, which actually serve self-enhancement needs. Narcissistic vulnerability consists of a devalued sense of self, helplessness, emptiness, shame, avoidance tactics defending against rejection, envy, and an underlying insatiable need for

admiration (Krizan & Johar, in press; Pincus et al., 2009; Pincus & Roche, 2011; Wright, Lukowitsky, Pincus & Conroy, 2010). However, viewing grandiosity and vulnerability as two distinct and mutually exclusive categories is theoretically and epistemologically inaccurate in that there is a dynamic relationship between the two dimensions; grandiose and vulnerable self-states can alternate or even co-occur (Wright et al., 2010). Many psychoanalytic experts have noted that 'in every vain and grandiose narcissist hides a self-conscious, shame-faced child and in every depressed and self-critical narcissist lurks a grandiose vision of what that person should or could be" (McWilliams, 1994, p.171). The "*relative*" levels of vulnerability and grandiosity is what distinguishes them from each other (Wright et al., 2010).

Despite the accumulation of clinical data on grandiose and vulnerable expressions of pathological narcissism, the DSM-IV-TR criteria for Narcissistic Personality Disorder (APA, 2000) emphasizes the grandiosity, impeding the recognition of the narcissistic vulnerability in diagnostic settings (Pincus & Roche, 2011). The emphasis on grandiose content is prominent for most measures assessing NPD and trait narcissism as they are commonly based on the DSM criteria for NPD. The Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979) is used in most of empirical research focusing on narcissism, although it aims to assess subclinical narcissism. However, the NPI has an unstable factor structure and also presents with a confusing mix of adaptive and maladaptive content (Ackerman et al., 2011; Cain et al 2008), and predominantly assesses non-distressed expressions of narcissism (Miller & Campbell, 2008; Pincus et al., 2009). Moreover, it does not include any vulnerability related items, and, thus, fails to assess the full realm of pathological narcissism (Roche, Pincus, Lukowitsky, Ménard, & Conroy, 2012). The NPI is the only self-report instrument for the assessment of narcissism that has been adapted for the Greek population (Kokkosi, Vaslamatzis, Anagnostopoulos & Markidis, 1998) and, therefore, research on patho-

logical narcissism in Greece is limited due to the lack of empirically validated instruments for its assessment.

To date, there are a small number of measures assessing expressions of narcissistic vulnerability. The Hypersensitive Narcissism Scale (HNS; Hendin& Cheek, 1997) addresses the facet of narcissistic vulnerability; however multidimensionality may be of interest as indicated by the literature (Wright et al., 2010). The Narcissistic Vulnerability Scale (NVS; Bachar, Hadar, & Shalev, 2005) assesses both dimensions of the construct through two grandiose traits (grandiosity, exploitativeness) and one vulnerable trait (poor self-esteem regulation). However, according to Pincus and Roche (2011), NVS addresses a rather limited spectrum of narcissism's possible expressions.

More recently, Pincus et al. (2009) developed the Pathological Narcissism Inventory (PNI), a 52-item, multidimensional instrument measuring both overt and covert expressions of grandiose and vulnerable pathological narcissism. Principal components analysis revealed a 7-dimensional solution, namely: Entitlement Rage (ER), Exploitativeness (EXP), Grandiose Fantasy (GF), Self- sacrificing Self-enhancement (SSSE), Contingent Self-esteem (CSE), Hiding the Self (HS), and Devaluing (DEV), which was later replicated by confirmatory factor analysis. Pincus et al. (2009), also, suggested that a second-order factor structure be investigated due to substantial subscale correlations. Wright et al. (2010) later examined three second-order factor structures, one with a single second-order factor and two more with two second-order factors, reasoning that a two factor second-order model could take many forms. In the second model, CSE, SSSE, DEV and HS served as indicators for the second-order factor of vulnerability and EXP, ER and GF as indicators of grandiosity. In the third model, an alternative two second-order structure was estimated, with EXP, SSSE and GF as indicators of grandiosity and CSE, DEV, HS and ER as indicators of vulnerability. The authors (Wright et al., 2010) argue than the latter model is

"theoretically more appealing, as it exchanges the locations of SSSE and ER scales, reflecting the grandiose motivation of SSSE and the vulnerability to negative affect associated with ER" (p. 470). Therefore, they anticipated the third model to exhibit better fit. CFA demonstrated that all three models were a good fit, however, the third model presented with slightly better indices and was in accordance with a-priori theoretical assumptions. The authors concluded that, although the two second-order factors are correlated, they are best modeled as separate, with grandiosity reflecting motivations to seek out self-enhancement and aggrandizement, and vulnerability reflecting self and emotional dysregulation (see also Pincus, in press), thus, model three was retained as the second-order structure of PNI.

This factor structure was also detected in English-speaking Canadian students (Tritt, Ryder, Ring and Pincus, 2010) and confirmed in Chinese-speaking Hong Kong students (You, Leung, Lai, & Fu, in press). Tritt et al. (2010) conducted three principal component analyses of the PNI. First, they analyzed the PNI items and yielded seven dimensions that corresponded to the seven subscales of the PNI. Next, they analyzed both the seven subscales and the individual items, anticipating two second-order factors, narcissistic vulnerability and narcissistic grandiosity. Indeed, analysis of the scree plot revealed two superordinate components, in which all items had primary loadings > .40. Component 1 reflecting vulnerability (CSE, DEV, HS, ER) and component 2 reflecting grandiosity (SSSE, GF, EXP) were positively correlated (r =.16). You et al. (in press) used confirmatory factor analysis to validate both the first and second-order factor structures of the PNI. They initially replicated the exact first-order CFA model confirmed by Pincus et al. (2009), with all 52 items allocated to their corresponding factor, but model fit was poor (NNFI=.56, CFI=.59, RMSEA=.71). The authors (You et al., in press) attributed poor fit to the non normal distribution of most items, and the opposite skewness of some of them defining the same factor, and they proceeded by employing the item parceling

technique to achieve a stable and estimable model given the ratio of parameters to participants (N= 831). Within each factor, items with the highest and lowest item–factor correlations were combined and items with intermediate level item–factor correlations were combined. The first-order model achieved acceptable fit, after adding four error covariances to the model. Also, the authors tested all three second-order model previously examined by Wright et al. (2010), and all three were found to marginally fit the data. The third model was retained, as it presented with somewhat better fit indices.

Furthermore, Wright et al. (2010), using a sample of college students (*N*=983, males=488, females=495), tested all PNI scales for measurement invariance across genders. They found that all PNI scales possess strong measurement invariance (i.e. configural, factorial of first- and second-order variances and covariances, and intercept) across genders. Moreover, PNI was validated in normal and clinical samples (Pincus, in press), and demonstrates satisfactory validity (Maxwell, Donnellan, Hopwood, & Ackerman, 2011; Miller et al., 2010; Pincus et al., 2009; Tritt et al., 2010) and clinical utility (Thomas, Wright, Lukowitsky, Donnellan, & Hopwood, 2012). Therefore it is currently "the only multi-faceted self-report inventory assessing clinically identified characteristics spanning the full range of pathological narcissism" (Pincus & Roche, 2011, p.37).

The aim of this study was to evaluate the factor structure of the PNI in a sample from the Greek population. We conducted Confirmatory Factor Analysis to test the factor structures already hypothesized and evaluated for the original PNI (Pincus et al., 2009; Tritt et al., 2010; You et al., in press; Wright et al., 2010), and, also, we evaluated additional possible factor structures, based on empirical and theoretical literature.

Specifically, aggression has been empirically related to both grandiosity (Bushman, Baumeister, Thomaes, Begeer, & West, 2009;Wink, 1991), assessed with the NPI (Raskin & Hall, 1979), and vulnerability (Okada, 2010), assessed with the

Hypersensitive-Grandiose Narcissism Scale (Naka-yama & Nakaya, 2006). Additionally, psychoanalytic conceptualizations of narcissistic rage have related it to grandiose narcissism (Kernberg, 1975), as well as vulnerable narcissism (Kohut, 1972). Therefore, we decided to test factor structures linking ER to vulnerability and grandiosity, alternatively, as described further below.

Moreover, a third narcissistic type has been recently empirically identified by Houlcroft, Bore & Munro (2012) and earlier by Russ, Shedler, Bradley & Westen (2008). Russ, Shedler, Bradley & Westen (2008) applied Q-factor analysis on Shedler-Westen Assessment Procedure–II clinicians' descriptions of narcissistic patients (diagnosed by both DSM and construct ratings) and identified a third malignant/ grandiose factor, along with other two, fragile and high functioning/ exhibitionistic. Houlcroft, Bore & Munro (2012) conducted exploratory factor analysis and correlational analysis of the PNI, along with other assessment measures of narcissism and personality, and identified a third markedly aggressive and antisocial type. Both studies are in line with what psychoanalytic literature has identified as "psychopathic narcissism" (Ronningstam, 2005) or, as earlier defined by Kernberg (1975, 1992) "malignant narcissism". Consequently, we decided to evaluate three-factor second-order models to test for a possible third factor in the construct of pathological narcissism, characterized by manipulative and aggressive interpersonal attitudes. These models are also described in detail further below.

2. Method

Measures

The PNI is a 52-item self-report measure assessing seven dimensions of pathological narcissism. The first subscale, named Contingent Self Esteem (CSE), reflects a fluctuating experience of self-worth dependent on expressions of admirations or acceptance provided by others (e.g. "When people don't

notice me, I start to feel bad about myself"). The second one, named Exploitativeness (EXP), reflects a manipulative interpersonal style (e.g. "I can make anyone believe anything I want them to"). The third subscale, Self Sacrificing Self Enhancement (SSSE), reflects the use of seemingly altruistic acts to sustain an inflated sense of self worth (e.g. "I feel important when others rely on me"). The fourth subscale, Hiding the Self (HS), describes the reluctance to disclose needs and weaknesses (e.g. "When others get a glimpse of my needs, I feel anxious and ashamed"). The fifth subscale, named Grandiose Fantasy (GF), reflects a preoccupation with compensatory fantasies of gaining admiration or success (e.g. "I often fantasize about performing heroic deeds"). The sixth one, named Devaluing (DEV), describes an avoidance of others in fear that they will not live up to expectations, and shame over investing in disappointing others (e.g. "Sometimes I avoid people because I'm concerned that they'll disappoint me"). The last subscale, Entitlement Rage (ER), reflects affects of anger when not acquiring what one feels is entitled to (e.g. "I can get pretty angry when others disagree with me"). Each item is scored on a six-point Likert scale from 0 (Not at all like me) to 5 (Very much like me). Principal component analyses and confirmatory factor analytic results support a seven factor structure and coefficient alphas for all scales range from .78 to .93 (total PNI a .95) supporting its reliability (Pincus et al., 2009; Wright et al., 2010).

Translation

The PNI was translated into Greek by the first two authors separately and the two versions were compared and minor irregularities were smoothed out. Back translation was assigned to a bilingual English-to-Greek professional translator. Both the initial Greek and English back translation were then compared by a panel consisting of a bilingual clinical psychologist, a researcher with previous experience in the translation of psychological instruments into Greek and an experienced professional translator. The expert panel made decisions concerning the appropriateness of words and phrases in the Greek language that best fit the English language version of the scale. The final translation was administered to a small number of students examining whether there were words they did not understand and /or found awkward.

Participants and procedures

Our sample was a convenience one. Participants included undergraduate and postgraduate students from various faculties at two Greek-speaking universities who provided written informed consent. The questionnaire was administered in groups in the presence of one of the researchers. Overall, 283 students (85% female; mean age = 21.5 (SD=4.43) years; 15 postgraduate students) participated in the study. Four participants were dropped due to extensive missing data. Valid N consisted of the remaining 279 participants. According to Kline (2005), a sample size greater than 200 is considered acceptable for most models in CFA. Also, Bentler (1989) suggested as an over-simplified rule that a 5:1 ratio of participants to parameters to be estimated is needed. In our data, the ratio of participants to parameters to be estimated was 5:1 after parceling and 4.4:1, when items were used.

Data analysis

The remaining missing data (45 out of 14,508 data points; < 1%) were scattered randomly throughout the sample. Missing values were replaced with the mean of the individual participant's item endorsements for the items on that specific scale. We also examined whether the assumption of univariate and multivariate normality of the data were satisfied. Finney and Di Stefano (2006) suggest that values close to 0 for univariate skewness and kurtosis indicate a normal distribution. Unfortunately, there is no clear consensus regarding an "acceptable" degree of non-normality. Studies examining the impact of univariate normality on ML-based results suggest

that problems may occur when univariate skewness and univariate kurtosis approach values of 2 and 7 respectively, and that skewness > 2 and kurtosis > 7 indicate a severely non-normal distribution (e.g., Bentler, 2005; Muthén & Kaplan, 1985). In addition, data associated with a value of Mardia's normalized multivariate kurtosis greater than 10 could produce inaccurate results when used with ML estimation (Muthén & Kaplan, 1985).

As demonstrated by both the Kolmogorov-Smirnov and Shapiro-Wilk tests for normality, distributions for all items in the scale were significantly skewed and kurtotic (p<.01), whereas review of the histograms for each item, also, revealed many (mainly positive) asymmetries. Furthermore, the total Mardia's coefficient for multivariate normality was 377.85 This value supports the presence of multivariate non-normality in the distribution of the PNI in this sample. Therefore, based on recommendations of Bollen and Stine (1992), we used ML estimation with bootstrapping techniques. According to Bollen and Stine (1992), bootstrapping techniques may represent an ideal means to tackle problems in situations where the assumptions of adequate sample size, and/or data of a continuous scale and with multivariate normal distribution, are not met. Finally, in order to identify possible outliers which could affect the results of the analysis, we used the Mahalanobis distance (D^2) statistic. This index is the standard method for multivariate outlier detection (Filzmoser, 2004), and represents the squared distance from the centroid of a data set (Tabachnick & Fidell, 2013). The higher the D^2 distance for a case, the more likely to be a multivariate outlier under assumptions of normality. The method can also be used when multivariate outliers are considered a special group as has been previously applied to Greek data (Gari, Kalantzi-Azizi & Mylonas, 2000; Mylonas & Gari, 2010) towards identification of gifted students. From the inspection of the values, no multivariate outliers were detected.

Although our aim was to use parcels instead of items as units for the confirmatory factor analysis, as explained right below in detail, we also tested the seven-factor (item) model proposed by Pincus et al. (2009) and assigned all 52 items to their corresponding factors. As expected, the model fit was rather poor, SRMR = .075, CFI = .76, RMSEA = .062, 90% CI [0.059, 0.065], probably due to the ratio of parameters to participants, thus further supporting our decision to use parcels.

Parceling

The units of analysis used in this study were not the original items included in the scale; instead we preferred to use parcels of items by combining items into small groups of items within the PNI scales (Bandalos & Finney, 2001). Compared with item-level data, models based on parceled data (a) are more parsimonious (i.e., have fewer estimated parameters both locally in defining a construct and globally in representing an entire model), (b) have fewer chances for residuals to be correlated or dual loadings to emerge (both because fewer indicators are used and because unique variances are smaller), and (c) lead to reductions in various sources of sampling error (MacCallum, Widaman, Zhang, & Hong 1999). Furthermore, item parcels may be used to overcome the inadequacies presented by the assumption that the observed variables are continuously measured interval-level data (Panter, Swygert, Dahlstrom& Tanaka, 1997). We parceled together items from the same subscale. As all subscales have acceptable internal consistency, the unidimensionality condition concerning parcels was met (Bandalos & Finney, 2009). We grouped items in a fashion that each subscale would consist of 3 parcels. Consequently, each parcel was comprised of 2 to 4 items, depending on the total number of items in each subscale. To decide which items would be allocated to the same parcel, we conducted an exploratory factor analysis[4] (principal axis factor-

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4. According to Bryant & Yarnold (1995), a ratio 5:1 for participants to items is acceptable for conducting exploratory factor analysis, which stood for our sample.

ing, varimax rotation with Kaiser normalization) to review the factor loadings for all items in each factor/ subscale. We allocated each item so as each parcel would have an equal-weight factor loading[5]. That is, within each factor, items with the highest and lowest item–factor correlations were combined and items with intermediate level item–factor correlations were combined. We resulted in 21 parcels that served as observed variables in the CFA models we evaluated.

As far as the assumption for univariate and multivariate normality is concerned, our data distribution continued to be non-normal after parceling the items, both at the univariate and multivariate level. Using the SPSS macro developed by De Carlo (1997), we found that almost all the skewness and the majority of the kurtosis values were significant (p<.05). Also, Kolmogorov–Smirnov and Shapiro–Wilk tests demonstrated that for the majority of our parcels skewness and kurtosis were significant at p < .01, and for the rest of parcels skewness and kurtosis were significant at p<.05. Review of the histograms revealed many asymmetries. Furthermore, the total Mardia's coefficient for multivariate normality was 63.62 for the parcels, indicating again a significant departure from normality. Therefore, we used the ML estimation method with bootstrapping techniques with the models.

3. Results

Descriptive statistics and internal consistency

To evaluate internal consistency of the Greek version of the PNI we calculated the Cronbach's α index, with an acceptable standard of >.70, and the mean inter-item correlations to estimate item-to-scale homogeneity, with an acceptable value range between 0.20 and 0.40. According to Briggs and Cheek (1986), when mean inter-item coeffi-

cients lay within this range, a single total score adequately represents the complexity of the items without being overly redundant. Cronbach's α was 0.94 for the 52-item total scale, and ranged from 0.68 to 0.88 for the seven subscales. (Table 2). The relatively low alpha coefficient for the EXP subscale (0.68) was attributed to the small number of items comprising the scale (5 items). Lower alpha coefficient for this subscale was also found in the You et al. (in press) study (.72). The mean inter-item correlation (MIC) coefficients for the PNI Greek version was 0.35 for the total scale, and ranged between 0.29 (EXP) and 0.39 (CSE and SSSE) for the seven subscales. Scales' intercorrelations can be found in Table 1.

Confirmatory Factor Analyses

We conducted confirmatory factor analyses using AMOS 19 (Arbuckle, 2009). The following criteria were used in evaluating overall goodness of fit for the measurement models: (a) the robust Comparative Fit Index (CFI); (b) the RootMean-Square Error of Approximation (RMSEA) with 90% confidence intervals; and (c) the Standardized Root Mean- Square Residual (SRMR). These indices take sample size into consideration and specify the amount of covariation in the data, which is accounted for by the hypothesized model relative to a null model that assumes independence among variables. For the CFI, where 1.0 indicates a perfect fit, a value in the range of .95 is generally accepted as indicating a good fit (Hu & Bentler, 1999). For the RMSEA (Browne & Cudeck, 1993), an adequately fitting model will have a value between .00 and .06, with 90% confidence intervals between .00 and .10. Finally, regarding SRMR, a value less than .08 is considered a good fit (Hu & Bentler, 1999). To compare the models, the Akaike information criterion (AIC) was used. In general, smaller AIC values indicate better fit when models are compared.

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5. The items of the EXP subscale (5 items), also, grouped 3 parcels. Two of them consisted of 2 items and the third of one item, the one with the higher factor loading, an equal loading with the other parcels' loadings.

Table 1
PNI (Greek version) scale intercorrelations and descriptive statistics (N=279).

PNI scale	1	2	3	4	5	6	7	8	Items Scale	Mean	SD	Sem	MIC
1. CSE	(.88)								12	2.45	.99	.059	.39
2. EXP	.01	(.68)							5	2.66	.87	.052	.29
3. SSSE	.57**	.19**	(.80)						6	2.70	1.00	.060	.39
4. HS	54**	.07	.32**	(.76)					7	2.48	.96	.057	.31
5. GF	.50**	.23**	.57**	.44**	(.81)				7	2.45	1.02	.061	.38
6. DEV	.60**	.03	.41*	.52**	.42**	(.78)			7	2.06	.95	.057	.34
7. ER	.63**	.22**	.57**	.41**	.50**	.58**	(.81)		8	2.61	.95	.057	.35
8. TOTAL	.85**	.26**	.73**	.68**	.74**	.75**	.80**	(.94)	52	2.48	.70	.042	.35

Note. Cronbach's α appears on the diagonal. CSE = Contingent Self-esteem; EXP = Exploitativeness; SSSE = Self-sacrificing Self-enhancement; HS = Hiding the Self; ER = Entitlement Rage; GF = Grandiose Fantasy; DEV = Devaluing; ER = Entitlement Rage; MIC = Mean inter-item correlations; SEm = Standard Error of Mean ** $p < .01$

Overall, various models were tested. Initially, we tested a model with all parcels loading on a single factor, in order to make sure that the scale is not unifactorial (Model 1). Second, we tested a seven-factor first-order model (Model 2), where the 21 parcels served as indicators for the seven hypothesized factors (CSE, SSSE, ER, GF, DEV, HS, and EXP). The seven factors were allowed to freely correlate. Then, we tested a second-order single factor model, where the seven first-order factors served as indicators of one second-order factor, pathological narcissism (Model 3). Next, we examined three second-order two-factor models, where the seven first-order factors served as indicators for the two second-order factors, namely vulnerability and grandiosity, as mentioned earlier. These second-order factors were also freely correlated. Specifically, in Model 4 vulnerability was indicated by CSE, DEV, HS, ER and grandiosity by SSSE, EXP, GF, in Model 5 ER was exchanged by

SSSE, and in Model 6 both ER and SSSE were serving as indicators of grandiosity, whereas CSE, DEV and HS were indicating vulnerability. Models 4 and 5 were previously confirmed by Wright et al. (2010), and You et al. (in press), whereas Model 6 was based on studies linking aggression to grandiosity (Bushman, Baumeister, Thomaes, Begeer, & West, 2009; Wink, 1991). Lastly, we examined possible second-order three-factor structures, as suggested by literature (Houlcroft, Bore & Munro, 2012; Ronningstam, 2005), where the third latent factor (malignant or aggressive narcissism) was indicated by ER and EXP in Model 7, by EXP alone and ER indicating vulnerability in Model 8 and by EXP alone and ER indicating grandiosity in Model 9. The latent factors were allowed to freely correlate.

As shown in Table 2[6], most models tested provided acceptable fit to the data, with the exception of Model 1 (CFI=.68, SRMR=.10,

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6. Model 1 and Model 7 are not included in Table 2, because the first did not have acceptable indices and the second could not reach an admissible solution.

Table 2
Summary of Fit Statistics for the PNI - Greek version (N = 279).

Model No	χ^2	*df*	CFI	SRMR	RMSEA	RMSEA 90% CI	AIC
Model 2	284.121*	168	.960	.050	.050	.040, .060	410.121
Model 3	371.683*	182	.935	.067	.061	.052, .070	469.683
Model 4	349.908*	181	.942	.058	.062	.049,.067	449.908
Model 5	371.654*	181	.935	.067	.062	.053, .070	471.654
Model 6	350.807*	181	.942	.064	.058	.049, .067	450.807
Model 8	343.017*	180	.944	.060	.057	.048, .066	445.017
Model 9	327.401*	180	.950	.057	.054	.045, .064	429.401

Note. PNI= Pathological Narcissism Inventory; CFI = Comparative Fit Index; SRMR = Standardized Root Mean-square Residual; RMSEA = Root Mean-square Error of Approximation; CI= Confidence Intervals; AIC= Akaike Information Criterion;Model 2=first-order seven-factor model; Model 3= single-factor second-order model; Model 4= second-order two-factor model with ER indicating vulnerability; Model 5=second-order two-factor Model with SSSE indicating vulnerability; Model 6= second-order two-factor model with ER and SSSE both indicating grandiosity; Model 8= second-order three-factor model with ER indicating vulnerability; Model 9= second-order three-factor model with ER indicating grandiosity; * *p* < .001.

RMSEA=.133 [90% CI=.126,.141], AIC=1207.964), suggesting that the scale is not unifactorial. Model 2 seems to provide significantly improved fit indices and exhibits a lower AIC value than all the rest. With regard to the two factor second-order models, we found that Model 4 better fits our data than Model 5, a finding in line with the results presented by Wright et al. (2010) and You et al. (in press). However, almost all Model's 4 fit indices are only slightly improved compared to Model 6, except for RMSEA, which is improved in Model 6. Referring to the AIC for models comparison, Model 4 provides marginally better fit to the data than Model 6. Regarding the three-factor second-order models, Model 7, with ER and EXP as indicators of malignancy could not reach an admissible solution, due to a significant negative variance in the residual weight of parcel 7. Models 8 and 9, initially, could not be identified, until we added an additional constrain. We fixed the error variance of EXP to 0, as indicated by the estimates for the model, resulting in a good fit for both models. Actually, both Models 8 and 9 better fit our data

than the two factor second-order models (Models 4, 5, 6), with Model 9 (with ER indicating grandiosity instead of vulnerability) fitting significantly better than all second-order models.

At this point, we calculated internal consistency indices for the three second-order factors (as constituted in Model 9 that achieved better fit), additionally to the indices for the seven subscales presented in Table 1. Cronbach's α indices were .91 for vulnerability (CSE, HS, DEV), .90 for grandiosity (SSSE, GF, ER) and .68 for malignancy (EXP). Mean inter-item correlations were .35 for vulnerability, .37 for grandiosity and .29 for malignancy. Factor inter-correlations were .68 between vulnerability and grandiosity, .26 between grandiosity and malignancy, and .05 between vulnerability and malignancy, with the first two being statistically significant (*p*<.01). Factor correlations with the total PNI were .26 for malignancy, and .91 for both grandiosity and vulnerability. Finally, the seven subscales correlations to the three factors ranged from .01 (CSE and malignancy) to .86 (SSSE and grandiosity).

Based on the aforementioned CFA results, we conclude that the seven-factor first-order model was found to be better than all second-order factor models in capturing the structure of the Greek version of the PNI. Yet, the rest of the models, especially Model 4 and Models 8 and 9, also fit our data, dictating that further research is needed to study the construct validity of the second-order factors, especially since they are all theoretically meaningful. Also, factor invariance across countries should be pursued, if PNI is to be safely employed cross-culturally.

4. Discussion

The aim of this study was to evaluate the factor structure and basic psychometric properties of the PNI in a sample from the Greek population. With regard to reliability, both Cronbach's alphas and mean inter-item coefficients for the seven subscales support the Greek version's internal consistency. In terms of its factor structure evaluation, it is clear that the seven-factor first-order model better fits our data. Nevertheless, acceptable fit indices for many second-order models tested and only marginal differences between these models' indices suggest that construct validity studies into the second-order factors are essential. At this point, however, differences in model fit should be evaluated theoretically.

The fact that the second-order single-factor model fit our data, as did some second-order models with more than one second-order factors, should be addressed first. This finding is in line with psychoanalytic theory that has identified and surmised that pathological narcissism is one construct, a construct that is constituted by three dimensions: narcissistic grandiosity, narcissistic vulnerability, and narcissistic malignancy (eg. Kernberg, 1975, 1992; Kohut, 1968, 1971; Ronningstam, 2005). We agree with Wright et al. (2010) that the two second-order factors, although correlated, are best modeled as separate, with grandiosity reflecting motivations to seek out self-enhancement and aggrandizement and vulnerability reflecting self and emotional dysregulation. The results of this study suggest a third factor exists and is construed as malignancy, which reflects a tendency to exploit and manipulate others, who are seen as a means for the malignant narcissist to access what is "rightfully" theirs.

Second, with reference to the two-factor second-order models, our finding, that both the model with ER assigned to grandiosity and the one with ER assigned to vulnerability fit our data, is in line with previous research that linked aggression to both facets of narcissism, grandiosity (Bushman, Baumeister, Thomaes, Begeer, & West, 2009; Wink, 1991), and vulnerability (Okada, 2010). Okada (2010), also, found that individuals with higher scores on vulnerability tend to be more aggressive *indirectly*, when subjected to an experimental condition of social rejection, and draws on the distinction between forms of aggression to suggest that grandiose narcissists engage in physical and verbal aggression, as well as anger, when provoked, while vulnerable narcissists usually demonstrate cognitive and affectional components of aggression, that is anger and hostility. The author (Okada, 2010) elaborates theoretically that vulnerable narcissists do not express their aggression openly, as they are too anxious not to be rejected, and they usually express it in an indirect manner, resulting in interpersonal difficulties that make them prone to depression, as they have been described in psychoanalytic literature (McWilliams, 1994). A careful review of the items on the ER subscale shows that they are mostly verbalizations of how one feels or thinks when frustrated and angry, and, thus, they may be more fittingly assigned to vulnerability. However, grandiose narcissists who tend to engage in open aggression, may experience anger as well and may also be hostile. However, since there are no items assessing the more direct aspects of aggressiveness, grandiosity's relation to aggression is not clear. Moreover, regarding grandiosity and aggression, Okada (2010) reports that findings vary as measures vary, and displaced aggression still

needs to be taken into consideration and tested empirically. Studies using various measures of the narcissistic subtypes and, also, measures of aggression and its manifestations could facilitate further understanding of the relationship between aggression and narcissism.

Third, as far as the three-factor second-order structure is concerned, results support a third factor, reflecting the malignant tendency to exploit others in order to achieve what the grandiose self "deserves". This is in accord with previous research findings (Russ, Shedler, Bradley & Westen 2008; Houlcroft, Bore & Munro, 2012). It seems that this third factor corresponds to the construct of malignant or psychopathic narcissism, discussed in the psychoanalytic literature by Kernberg (1975, 1992) and Ronningstam (2005), respectively. Ronningstam (2005) identifies three types, the Arrogant, the Shy, corresponding to the grandiose and vulnerable types in the PNI, and the Psychopathic, who is characterized by aggression, malignant attitudes and antisocial behaviors. Kernberg (1975, 1992) identified malignant narcissism as a subtype of narcissistic pathology and differentiated it from the psychopathic (antisocial) personality, based on clinical observations suggesting that malignant narcissists, as opposed to antisocial patients, may be capable of feeling remorse and have the capacity to internalize aggressive and idealized superego precursors, and to identify with powerful others. Although, theoretically, this type is characterized by distinctive aggressive tendencies, our model with ER assigned to malignancy, could not fit the data, perhaps due to its emphasis on feelings of frustration that lead to anger, and not on actual aggressive action. Indeed, Ronningstam (2005) notes that the relationship between affects and actions of aggression is complex, in that aggressive actions may come about without one feeling angry or frustrated. This could be the case with regard to psychopathic narcissists, who engage in violence as a means to control or gain something, and not as a response to frustration. Taking into consideration the aforementioned theoretical implications, we believe that the exploration of various second-order models and the finding that several fit our data is an important first step in understanding the structure of pathological narcissism. As already mentioned elsewhere, construct validity studies should be the next step in the research process regarding this much discussed construct in personality psychology.

The Greek PNI's internal consistency and factor structure (at least at the first-order level) has been established in this preliminary study and we believe that employing the Greek version of PNI for the assessment of pathological narcissism in Greece has a number of advantages. First, it assesses both grandiose and vulnerable facets of pathological narcissism, and, to our knowledge, there is no other measure available in Greece that could serve to avoid misdiagnosis of narcissistic vulnerability.

Second, the Greek version of PNI assesses *pathological* narcissism alone. It does not assess both pathological and healthier expressions of the construct narcissism, as it is negatively correlated with normal expressions of positive emotionality, thus, enhancing its clinical utility (Thomas et al, 2012). Third, it provides subscale scores, as well, which allow for a dimensional assessment of persons' narcissistic pathology. Thomas et al. (2012, p. 142) in their discussion on the importance of subscale scores for expert and non-expert clinicians state that "if a clinician is privy to an individual's PNI grandiosity and vulnerability scores, she or he can infer more than just grandiose and vulnerable tendencies". Such inference is far more enriched, when a clinician has seven subscale scores at his or her disposal. Consequently, we argue that, as far as scoring procedures with the Greek PNI are concerned, perhaps all seven subscale scores should be reported, in order for clinicians to have a dimensional assessment of an individual's narcissistic difficulties.

Lastly and more importantly, the translation and use of an instrument that *dimensionally* assesses the *full* scope of pathological narcissism can counterweight the emphasis on categorical diagnosis. This is of particular importance in face

of the substantial changes PD diagnosis are about to undergo in the upcoming DSM 5. That is, DSM 5 has finally adopted a dimensional rationale in PD diagnosis, however this dimensional understanding is embodied in a hybrid dimensional – categorical model. In particular, PD diagnosis requires meeting Criteria A, which assesses impairments of self (identity, self direction) and interpersonal (empathy, intimacy) functioning in a severity scale, and is, thus, dimensional, and Criteria B, which assesses pathological personality traits, understood as categories. As far as NPD diagnosis is concerned, it was initially set for deletion in DSM 5 (Miller, Gentile, Wilson & Campbell, in press), but has been reinstated due to critiques articulated on its deletion (Pincus, 2011). Regarding the representation of both grandiose and vulnerable subtypes of pathological narcissism, the specific Criteria A for NPD indeed reflects vulnerable and grandiose impairments of self and interpersonal functioning, however, Criteria B, the pathological traits, is limited to grandiosity (antagonism, characterized by grandiosity and attention seeking). This compromise solution may disarrange the diagnostic process and muddle the understanding of the full spectrum of narcissistic pathology.

In conclusion, we consider the construction and validation of the PNI, which allows for the assessment of and research in both narcissistic grandiosity and vulnerability, an important enhancement for clinical science and practice. We believe that its translation and adaptation in other languages will broaden the study of narcissism and enhance understanding its complex symptomatology in diverse contexts.

Limitations of the study

This study has a number of limitations. First of all, our sample was not random but one of convenience, consisted of students, predominantly female (85%) and, thus, is not representative of the Greek population. Second, although our sample size is considered adequate for CFA (Kline, 2005),

there are more stringent approaches, according to which a sample size of at least 1500 participants would be necessary to conduct CFA in a 52-item scale. Third, in order to measure the participants' narcissistic traits, we relied on self-report, which can be limited when personality pathology is assessed in the absence of peer reports and interviews. The latter methods would have also helped in evaluating the scale's convergent validity.

Directions for future research

The findings of this preliminary study need to be replicated in larger and more representative community samples and clinical populations. Moreover, the scale's convergent and divergent validity with other personality assessment measures available in Greece, therapists' reports, interviews and projective assessment techniques should be further explored. Further research should also focus on invariance across cultures and construct validity for the second-order factors. Finally, factor equivalence testing is necessary for the Greek version's of the PNI scores to safeguard for construct comparability with those found in the international literature before the Greek PNI can be implemented by clinicians in their everyday practice.

References

Ackerman, R.A., Witt, E.A., Donnellan, M.B., Trzesniewski, K.H., Robins, R.W., &Kashy, D.A. (2011). What does the Narcissistic Personality Inventory Really Measure? *Assessment,18,* 67-87.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., rev.). Washington, DC: Author.

Arbuckle, J. L. (2009). *Amos 19 User's Guide*. Chicago, IL: SPSS Inc.

Bandalos, D. L. & Finney S. J. (2001).Item parceling issues in structural equation modeling. In G. A. Marcoulides & R. E. Schumacker (Eds.), *New developments and techniques in structural equation modeling* (pp. 269-296). Mahwah, NJ: Erlbaum.

Bentler, P.M. (1989), *EQS, Structural Equations, Program Manual*, Program Version 3.0. Los Angeles: BMDP Statistical Software, Inc.

Bentler, P. M. (2005). *EQS for Windows 6.1*[Computer software]. Encino, CA: Multivariate Software.

Bollen, K. A., & Stine, R. (1992). Bootstrapping Goodness of Fit Measures in Structural Equation Models. *Sociological Methods & Research, 21,* 205-229.

Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In I. K. A. Bollen& J. S. Long (Eds.).*Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.

Briggs, S.R., & Cheek, J.M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality, 54*, 106-148.

Bryant, F. B., & Yarnold, P. R. (1995). Principal components analysis and exploratory and confirmatory factor analysis. In L. G. Grimm & R R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 99-136). Washington, DC: American Psychological Association.

Bushman, B. J., Baumeister, R. F., Thomaes, S., Begeer, S., & West, S. G. (2009). Looking again, and harder, for a link between low self-esteem and aggression. *Journal of Personality*, 77, 427-446.

Cain, N. M., Pincus, A. L., & Ansell, E. B. (2008). Narcissism at the crossroads: Phenotypic description of pathological narcissism across clinical theory, social/personality psychology, and psychiatric diagnosis. *Clinical Psychology Review, 28*, 638-656.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233-255.

De Carlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods 2*, 292-307.

Finney, S. J. & DiStefano, C. (2006). Nonnormal and categorical data in structural equation models. In G.R. Hancock & R.O. Mueller (Eds.). *A second course in structural equation modeling* (pp. 269-314). Greenwich, CT: Information Age

Freud, S. (1914). *On narcissism: an introduction*. Freud Complete Works. Ivan Smith 2000. Ηλεκτρονική έκδοση, 2931-2954.

Filzmoser, P. (2004). *A multivariate outlier detection method*. Proceedings of the Seventh International Conference on Computer Data Analysis and Modeling, Belarusian State University, 18-22.

Gari, A., Kalantzi-Azizi, A. & Mylonas, K. (2000). Adaptation and motivation of Greek gifted pupils: exploring some influences of primary schooling. High Ability Studies, 11(1), 55-68.

Hendin, H.M., & Cheek, J.M. (1997). Assessing Hypersensitive Narcissism: A Re-examination of Murray's Narcissism Scale. *Journal of Research in Personality*, *31*, 588-599.

Houlcroft, L., Bore, M. & Munro, D. (2012). Three faces of narcissism. *Personality and individual differences*, 53, 274-278.

Hu, L. & Bentler, P.M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Kernberg, O.F. (1970). Factors in the psychoanalytic treatment of narcissistic personalities. *Journal of the American Psychoanalytic Association,* 18, 51-85.

Kernberg, O.F. (1975). *Borderline conditions and pathological narcissism*. New York: Aronson.

Kernberg, O.F. (1992). *Aggression in personality disorders and perversions.* New Haven, CT: Yale University Press.

Kline, R.B. (2005). *Principles and practice of structural equation modeling.* Guilford Publications, Incorporated.

Kohut, H. (1968). The psychoanalytic treatment of narcissistic personality disorders. *Psychoanalytic Study of the child,* 23, 86-113.

Kohut, H. (1971). *The analysis of the self: A systematic approach to the psychoanalytic treatment of narcissistic personality disorders.* New York: International Universities Press.

Kohut, H. (1972).Thoughts on Narcissism and Narcissistic Rage. *Psychoanalytic Study of the Child*, 27, 360-400.

Kokkosi, M., Vaslamatzis, G., Anagnostopoulos, F. &Markidis, M. (1998). To Erotimatologio Narcissistikis Prosopikotitas NPI: Prosarmogi kai meleti ton psichometrikon idiotiton tou. (The Narcissistic Personality Inventory: Adjustment and psychometric properties). *Psichiatriki (Psychiatry)*, 9, 119-133.

Krizan, Z. & Zohar, J. (in press). Envy divides the two faces of narcissism. *Journal of Personality.*

MacCallum, R. C.,Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84-99.

Maxwell, K., Donnellan, M.B., Hopwood, C.J., & Ackerman, R.A. (2011). The two faces of Narcissus? An empirical comparison of the Narcissistic Personality Inventory and the Pathological Narcissism Inventory.*Personality and Individual Differences, 50,* 577-582.

McWilliams, N. (1994).Psychoanalytic diagnosis: Understanding personality structure in the clinical process. NY: The Guilford press.

Miller, J. D., & Campbell, W. K. (2008). Comparing clinical and social personality conceptualizations of narcissism. *Journal of Personality, 76*, 449-476.

Miller, J. D., Gentile, B., Wilson, L. & Campbell, W. K. (in press). Grandiose and Vulnerable Narcissism and the *DSM–5*Pathological Personality Trait Model. *Journal of Personality Assessment.*

Muthén, B., & Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical & Statistical Psychology, 38*, 171-189.

Mylonas, K. & Gari, A. (2010). Entopismos charismatikon mathiton me psichometrika kai statistika criteria: methodos, chrisimotita kai proektasis. (Identification of gifted students through psychometric and statistical criteria: method, use, and extensions). Proceedings of the First Panhellenic Congress of Education Sciences, pp. 120-127. Athens, Smirniotakis.

Nakayama, R., & Nakaya, M. (2006). Developmental transformation of narcissism in adolescence. *The Japanese Journal of Educational Psychology*, 54, 188-198 [in Japanese].

Okada, R. (2010). The relationship between vulnerable narcissism and aggression in Japanese undergraduate students. *Personality and Individual Differences*, 49, 113-118.

Panter, A.T., Swygert, K.A., Dahlstrom, W.G. & Tanaka, J.S.(1997). Factor-analytic approaches to personality item-level data. *Journal of Personality Assessment, 68,* 561-589.

Pincus, A.L. (in press). The Pathological Narcissism Inventory. In J. Ogrudniczuk (Ed.), Treating pathological narcissism. Washington, DC: American Psychological Association.

Pincus, A. L., Ansell, E. B., Pimentel, C. A., Cain, N. M., Wright, A. G., & Levy, K. N. (2009). Initial construction and validation of the Pathological Narcissism Inventory. *Psychological Assessment, 21*, 365-379.

Pincus, A. L., &Lukowitsky, M. A. (2010). Pathological narcissism and narcissistic personality disorder. *Annual Review of Clinical Psychology, 6*, 421-446.

Pincus, A. L. (2011). Some comments on nomology, diagnostic process, and narcissistic personality disorder in the DSM-5 proposal for personality and personality disorders. *Personality Disorders: Theory, Research, and Treatment*, *2(1),* 41-53.

Pincus, A. L. & Roche, M.J. (2011). Narcissistic grandiosity and narcissistic vulnerability. In W.K. Campbell & J.D. Miller (Eds.) *The Handbook of Narcissism and Narcissistic Personality Disorder: Theoretical Approaches, Empirical Findings, and Treatments*, pp. 31-40. New York: John Wiley and Sons Inc.

Raskin, R., & Hall, C.S. (1979). A narcissistic personality inventory. *Psychological Reports, 45,* 159-162.

Roche, M.J., Pincus, A.L, Lukowitsky, M.R., Ménard, K.S., & Conroy, D. E. (2012).An integrative approach to the assessment of narcissism. *Manuscript under review.*

Ronningstam, E.F. (2005). *Identifying and understanding the narcissistic personality*. Oxford University Press.

Russ, E., Shedler, J., Bradley, R., & Westen, D. (2008). Refining the construct of Narcissistic Personality Disorder: Diagnostic criteria and subtypes. *The American Journal of Psychiatry*, 165(11), 1473-1481.

Tabachnick, B. G., and Fidell, L. S. (2013). *Using*

Multivariate Statistics, 6th ed. Boston: Allyn and Bacon.

Thomas, K.M., Wright, A.G.C., Lukowitsky, M.R., Donnellan, M.B., & Hopwood, C.J. (2012). Evidence for the criterion validity and clinical utility of the Pathological Narcissism Inventory. *Assessment 19(2),* 135-145.

Tritt, S., Ryder, A. G., Ring, A., & Pincus, A. L. (2010). Pathological narcissism and the depressive temperament. *Journal of Affective Disorders,* 122, 280-284.

Wink, P. (1992). Three narcissism scales for the California Q-set. *Journal of Personality Assessment, 58*, 51-66.

Wright, A. G. C., Lukowitsky, M. A., Pincus, A. L., & Conroy, D. E. (2010). The higher-order factor structure and gender invariance of the Pathological Narcissism Inventory *Assessment, 17*, 467-483.

You, J., Leung, F., Lai, K. T. Y., & Fu, K. (in press). Factor structure and psychometric properties of the Pathological Narcissism Inventory among Chinese university students. *Journal of Personality Assessment.*

Περιγραφή των βασικών ψυχομετρικών χαρακτηριστικών και της παραγοντικής δομής της Ελληνικής έκδοσης του Ερωτηματολογίου Παθολογικού Ναρκισσισμού

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ΠΕΡΙΛΗΨΗ   Σκοπός αυτής της έρευνας ήταν η εξέταση των βασικών ψυχομετρικών ιδιοτή-
των της ελληνικής έκδοσης του Ερωτηματολογίου Παθολογικού Ναρκισσισμού
(Pathological Narcissism Inventory-PNI:Pincus, Ansell, Pimentel, Cain, Wright &
Levy, 2009). Το PNI είναι ένα ερωτηματολόγιο αυτοαναφοράς που κατασκευάστηκε πρόσφατα για την αξιο-
λόγηση τόσο του ναρκισσιστικού μεγαλείου (Τάση εκμετάλλευσης, Φαντασίωση μεγαλείου, Αυτοενίσχυση
μέσω της αυτοθυσίας) όσο και της ναρκισσιστικής ευαλωτότητας (Εξαρτώμενη αυτοεκτίμηση, Απόκρυψη
του εαυτού, Υποτίμηση, Δικαιωματική Οργή). Το PNI μεταφράστηκε στα ελληνικά και χορηγήθηκε σε 283
φοιτητές. Έγινε επιβεβαιωτική παραγοντική ανάλυση για να διερευνηθεί η παραγοντική του δομή στο ελ-
ληνικό δείγμα. Εκτιμήθηκαν υποδείγματα πρώτης και δεύτερης τάξης: α. Το αρχικό υπόδειγμα πρώτης τά-
ξης με επτά παράγοντες, β. Τρία υποδείγματα δεύτερης τάξης με δύο υψηλότερης τάξης λανθάνοντες πα-
ράγοντες (Μεγαλείο, Ευαλωτότητα) γ. Τρία υποδείγματα δεύτερης τάξης με τρεις υψηλότερης τάξης λαν-
θάνοντες παράγοντες (Μεγαλείο, Ευαλωτότητα, Κακοήθεια). Τα ευρήματα δείχνουν καλύτερη προσαρμο-
γή για το υπόδειγμα των επτά παραγόντων, ωστόσο, οι δείκτες καλής προσαρμογής είναι αποδεκτοί και για
τα περισσότερα από τα υποδείγματα δεύτερης τάξης. Οι δείκτες αξιοπιστίας ήταν στα αποδεκτά πλαίσια
για όλες τις υποκλίμακες. Αξιολογούνται θεωρητικά τα υποδείγματα και εκτιμώνται συνολικά τα πλεονε-
κτήματα της αξιολόγησης του ναρκισσισμού στην Ελλάδα με το PNI.

Λέξεις-κλειδιά: Παθολογικός ναρκισσισμός, Μεγαλείο, Ευαλωτότητα, Επιβεβαιωτική παραγοντική ανάλυ-
ση, PNI.

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