Mediterranean Journal of Clinical Psychology MJCP

ISSN: 2282-1619 VOL 6 N.2 (2018)

Measuring Grandiose and Vulnerable Narcissism in Adolescents

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Abstract

The Pathological Narcissism Inventory (PNI) has been widely used with adults. Its vulnerable and grandiose dimensions have been differentially associated with psychopathology and interpersonal difficulties. While the PNI has been used with adolescents, its structure and correlates remain to be investigated. The aim of this study was to examine the psychometric properties of the French PNI for adolescents and its association with indices of dysfunction. A total of 570 adolescents completed the PNI, the Youth Self Report to assess internalizing and externalizing difficulties, and the Self-Perception Profile for Adolescents to assess self-esteem. Results showed that the first and second-order factor structure of the PNI for adolescents is identical to the one found in adults. Temporal stability at one month was good. Between gender differences, as well as correlations between PNI dimensions, internalizing and externalizing difficulties, and self-esteem

further add to the conclusion that the French PNI-A has good psychometric properties.

Key words: adolescence, narcissism, measure, french, pathological narcissism inventory

Introduction

Narcissism in adolescents remains understudied and until recently there were few validated measures of narcissism available for use with adolescents. Adolescence is considered a particularly important period for the development of normal and pathological narcissism as adolescents engage with issues of self-esteem and identity. The way they engage with these challenges may increase narcissistic vulnerability or contribute to grandiose reactions that can become entrenched over time. For example, during adolescence certain narcissistic traits such as egocentricity and the need for attention (Hill & Lapsley, 2011) may be particularly solicited. Although this may potentially play an adaptive role by fostering feelings of self-efficacy and social competency, there is also the risk of it contributing to grandiose narcissism. It is essential to have validated measures of narcissism in adolescence to increase our understanding of the development of narcissism during this critical period in order to inform interventions.

Research on narcissism in adolescents has predominantly focused on differentiating normal and pathological narcissism, often limiting the latter to its grandiose presentation (Barry & Kauten, 2014). Thus, from a research point of view, vulnerable narcissism remains relatively neglected. The idea that narcissism could take both grandiose and vulnerable forms was initially introduced by Wink (1991). He dinstinguished vulnerable narcissists, who he characterised as defensive, hypersensitive, anxious, and socially withdrawn, from predominantly grandiose narcissists who he characterized as confident, aggressive, exhibitionistic, self-indulgent, and lacking in consideration for others' needs. Pincus and Lukowitsky (2010) further developed this model, referred to as the phenotypic model of pathological narcissism, and which differentiates between grandiose and vulnerable presentations. In one study, Mechanic and Barry (2015) found that in adolescents the two phenotypes are associated with relatively distinct parental practices. This provides some initial evidence suggesting that the phenotypes are relevant for understanding narcissism and its development in adolescents. However research examining vulnerable and grandiose dimensions

of narcissism in adolescents remain rare and much remains to be done to ascertain the reliability and validity of this model and its measure, the Pathological Narcissism Inventory (PNI: Pincus, Ansell, Pimentel, Cain, Wright, & Levy, 2009) when used with adolescents. To address the gap, the aim of this study was to examine the psychometric properties of the PNI-A (French version).

Measuring narcissism.

The Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979), as well as its adaptation for children (NPIC; Barry, Frick, & Killian, 2003), has been shown to measure normal or adaptive dimensions of narcissism, as well as pathological dimensions (Ackerman, Witt, Donnellan, Trzesniewski, Robins, & Kashy, 2011; Miller & Campbell, 2011; Pincus & Lukowitsky, 2010). The NPI has been widely used to study narcissism, but an important limitation is that it does not differentiate between vulnerable and grandiose narcissism and is thus not optimal for studying the complexities of pathological narcissism. To address this need the Pathological Narcissism Inventory (PNI; Pincus, Ansell, Pimentel, Cain, Wright, & Levy, 2009) was developed and has proved useful for measuring this construct in adolescents (Barry & Kauten, 2014; Mechanic & Barry, 2015). The PNI has been shown to have good psychometric properties when used with adults, including good criterion, convergent, and discriminant validity (Pincus, 2013). The factor structure of the PNI is also congruent with recent conceptualisations of pathological narcissism, in that it distinguishes between both grandiose and vulnerable forms (Besser & Priel, 2010; Cain, Pincus, & Ansell, 2008; Foster & Trimm, 2008; Morf & Rhodewalt, 2001a; 2001b). Initial validation by Pincus et al. (2009) in a sample of adults showed that the PNI measures seven facets including entitlement rage (ER), exploitation (EXP), grandiose fantasy (GF) and self-sacrificing self-enhancement (SSSE) (considered facets of grandiose narcissism), and contingent self-esteem (CSE), hiding the self (HS), and devaluation (DEV) (considered facets of vulnerable narcissism). In a later study of the PNI's hierarchical two-level factor structure, Wright and colleagues (Wright, Lukowitsky, Pincus, & Conroy, 2010) found that when the ER scale was included under vulnerable narcissism and the SSSE scale was included under grandiose narcissism, this resulted in a better fit of their data.

Narcissism and Internalizing and Externalizing Difficulties

Given the distinct traits and relational styles of vulnerable and grandiose narcissism, they can be expected to be differentially associated with psychological difficulties. Consistent with this, vulnerable narcissism has been linked to depression, paranoia, anxiety, introversion, and a lack of interpersonal dominance, while grandiose narcissism has been associated with low levels of depression or introversion (Rathvon & Holmstrom, 1996). In line with this, Schoenleber and colleagues (Schoenleber, Sadeh, & Verona, 2011) found that internalizing symptoms were associated with vulnerable narcissism, while externalizing symptoms were associated with both narcissistic phenotypes. However, this study was limited in that it used the NPI, as measure that is not optimized for differentiating between grandiose and vulnerable phenotypes of narcissism (Ackerman et al., 2011).

Narcissism and Self-Esteem

In adults, normal narcissism has been shown to be associated with high self-esteem (Rosenthal & Hooley, 2010), while pathological narcissism on the NPI was associated with self-esteem fluctuations (Zeigler-Hill, Myers, & Clark, 2010), and pathological narcissism measured on the PNI was negatively correlated with self-esteem. In adolescents too, normal narcissism has been shown to be positively associated with self-esteem, whereas pathological narcissism is positively associated with delinquency (Barry, Grafeman, Adler, & Pickard, 2007) and negatively associated with self-esteem (Barry and Kauten, 2014).

Narcissism and Gender

In an initial validation study conducted with an adult population, Pincus et al. (2009) found small to medium sized gender variations. Similar effect sizes were reported by Wright et al. (2010; study 2). Furthermore, there was a pattern of significant gender differences where women were more likely to manifest vulnerable traits. while men were more likely to manifest grandiose traits (e.g., O'Leary & Wright, 1986).

Considering the clinical and empirical utility of the phenotypic model of pathological narcissism proposed by Pincus and Lukowitsky (2010) and the absence of psychometric data on the French version of the PNI for adolescents, the primary aim of this study was to validate the hierarchical factor structure of

the French version of the PNI for adolescents. The secondary objective was to evaluate the temporal stability of narcissism as assessed with the French PNI over one month. A tertiary objective was to investigate the construct validity of the PNI by examining associations with other constructs as measured using other validated measures. We hypothesized that the factor structure of the French version of the PNI for adolescents would be similar to that found in adults (Pincus et al., 2009). We also expected that there would be evidence of stability over time in narcissism as assessed using the PNI. Based on findings from previous studies, it was hypothesized that vulnerable and grandiose narcissism would be positively correlated with internalizing and externalizing symptoms and would be negatively correlated with self-esteem (Miller, Price, Gentile, Lynam, & Campbell, 2012; Barry & Kauten, 2014; Barry, Loflin, & Doucette, 2015; Pincus et al., 2009). Finally, small to medium sized gender differences were expected, with adolescent males manifesting more grandiose traits and adolescent females manifesting more vulnerable traits.

Methods

Participants.

Five hundred and seventy adolescents aged 14 to 21 years old (426 girls, 138 boys, 6 NS; M = 17.91, SD = 2.99) were recruited at high schools (168 girls, 96 boys) and a university (242 girls, 52 boys) in the province of Quebec. Participants completed questionnaires via an online platform. All participant completed a consent page, and the study method was previously approved by the university ethics committee. To assess retest reliability of the PNI, particpants who agreed were re-contacted after an interval of 1 month.

Measures.

Narcissism. This study used the French version (Turmel, 2014) of the Pathological Narcissism Inventory (PNI; Pincus et al., 2009) validated for adults and adapted for adolescents for the present study. The PNI is comprised of 52 items scored along a 6-point Likert scale. The wording of items 3, 8, 17, 19, 23, 31, 33, 46 and 49 was modified to ensure that the language was appropriate for adolescents. For example, item 19 was changed from “I sometimes need important others in my life to reassure me of my self-worth” to “I sometimes need

important or popular others in my life to reassure me of my self-worth." The PNI consists of seven scales: exploitative (EXP; α=.81), self-sacrificing self-enhancement (SSSE; α=.79), grandiose fantasy (GF; α=.71), entitlement rage (ER; α=.82), contingent self-esteem (CSE; α=.90), hiding the self (HS; α=.66) and devaluation (DEV; α=.82) scales (Wright et al., 2010). The French translation demonstrated a factor structure similar to that of the original English version (Turmel, 2014). A recent study confirmed the PNI's good criterion, convergent, and discriminant validity, and also demonstrated its clinical utility (Thomas, Wright, Lukowitsky, Donnellan, & Hopwood, 2012; 2016). The PNI demonstrated a hierarchical two-factor structure representing grandiose and vulnerable narcissism and is the only measure to assess the two phenotypes of pathological narcissism. A study by Wright and colleagues (2010) recently compared two phenotypical model structures. In the first, EXP, ER and GF are included in grandiose narcissism, and CSE, SSSE, DEV and HS in vulnerable narcissism (the motivation for assigning SSSE to the vulnerable dimension is not clear as Pincus et al. (2009) already defined it as a part of the grandiose dimension). The second model, which obtained the best fit, exchanges the positions of the SSSE and ER scales, reflecting the grandiose motivation, namely that of self-enhancement, which underlies self-sacrifice and emphasizing the underlying vulnerable feelings of entitlement rage (Wright et al., 2010).

Internalizing and externalizing behaviors. The French version of the Youth Self Report 11-18 - Achenbach System of Empirically Based Assessments (ASEBA) (YSR: Achenbach, 1991) was used to measure internalizing and externalizing symptoms in adolescents. The YSR contains 112 items and responses are rated on a three-point scale, 1) "does not apply", 2) "sometimes", and 3) "often or always". The internalizing scale (α=.80) of the YSR consists of anxiety/depression (α=.90), withdrawal/depression (α=.84), and somatic complaints (α=.71) subscales, while the externalizing scale (α=.86) comprises the rule-breaking (α=.90), and aggressive behaviour (α=.81) subscales. The YSR is the most widely used measure to assess internalizing and externalizing in adolescents and has been validated in a variety of languages (Achenbach & Rescorla, 2001). The factor structure of the French version of the YSR internalizing and externalizing subscales confirmed the measurement validity of these concepts in the translated version (Song, Singh, & Singer, 1994). The Cronbach indices given above are those reported in the validation study. The internal consistency of the

internalizing and externalizing subscales in the present study were .917 and .826, respectively.

Self-Esteem. The French version of the Self-Perception Profile for Adolescents (SPPA: Harter, 1988) is a 45-item measure of adolescents' self-concept in terms of personal satisfaction and feelings of self-efficacy (Bouffard, Seidah, McIntyre, Boivin, Vezeau, & Cantin, 2002). Participants are asked to indicate which type of person they are most like and then whether the description is "sort of true" or "really true" of him or her. Each question is scored from 1 to 4, where a score of 1 signifies relatively low perceived competence, while a score of 4 suggests high-perceived competence. The SPPA is comprised of school (α=.77), social acceptance (α=.83), athleticism (α=.91), physical appearance (α=.91), job competence (α=.73), romantic appeal (α=.63), behavioural conduct (α=.76), close friendships (α=.84) and self-esteem (α=.85) subscales. The factor structure and internal consistency of the French adaptation were shown to correspond to those of the original English version in a community sample (Bouffard et al., 2002). Test-retest reliability of the translated version was also confirmed (Bouffard et al., 2002). The Cronbach indices given above are those reported in the validation study. Only the general self-esteem scale was used in the present study and showed good internal consistency (α=.91).

Data analytic strategy.

The first objective of this study was to examine the factor structure of the French adolescent version of the PNI and to determine whether a factor structure akin to that of the original English version of the PNI for adults (52 items forming seven factors with two higher-order factors) would emerge in this sample. Prior to beginning the factor analyses, the Mahalanobis distance (dm) was used to identify multivariate outliers and data points with dm > 89.272 ($p<0.001$) were discarded. Linear regressions were used to determine the absence of multicollinearity. A series of confirmatory factor analyses were then performed. Adjustment indices included the chi-squared test, yet given that it tends to overestimate lack of adjustment in large samples (Bollen, 1989; Hu & Bentler, 1999), the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA, 90% confidence interval), and the standardized root-mean-square residual (SRMR) were also employed. The Akaike information

criterion (AIC) was used to compare alternative two-factor models (Brown, 2006). An acceptable adjustment is defined as a CFI > 0.9, a TLI > 0.9, a RMSEA < 0.08 and a SRMR < 0.08, whereas a CFI > 0.95, a TLI > 0.95, a RMSEA < 0.05 and a SRMR < 0.05 delineate a good adjustment (Hu & Bentler, 1999). Cronbach's alpha was also used to determine the internal consistency of the measures. Confirmatory factor analyses were performed in MPlus 1.4 while all the others were performed in IBM Statistics Package for the Social Science (SPSS) v.23.

To investigate the temporal stability of the PNI-A (French version) for adolescents, the correlations of PNI scores and factors between Time 1 and Time 2 were examined. A coefficient of .7 was considered necessary to conclude that the measure has good temporal stability (McCrae, Kurtz, Yamagata, & Terracciano, 2011). Mean scores for Time 1 and Time 2 were also compared using dependent samples t-tests.

To assess the construct validity of the PNI-A (French version), associations with theoretically related concepts such as the self-esteem subscale of the SPPA were examined using Pearson correlations. The relationships between PNI scale and CBCL-YSR internalizing and externalizing scores were also examined to determine whether the associations found in the adult literature were also observable in adolescents. Lastly, gender differences were examined using t-tests on both facet and second-order factor levels.

Results

First order factor structure.

To verify the adjustment quality of the first order model with seven factors a confirmatory factor analysis was performed. There was no multicollinearity between variables or multivariate extreme values (37 participants, dm > 89,272) were omitted. Results from the factor analysis showed a poor adjustment, χ2SB (1, N = 533) = 29.573, p < .001, CFI = .779, TLI = .766, RMSEA = .058, 90% CI [0.056, 0.060], SRMR = .070. A poor fit may indicate the inadequacy of the underlying theoretical model. However, deviations from normality and linearity, estimation of a high number of parameters, and large item-participant ratios can also contribute to poor adjustment values (Bandalos & Finney, 2001; Bandalos, 2002). As recommended by Tabachnick & Fidell (2013) when using large groups

where inference tests tend to be oversensitive, the shape of the distributions were examined and found to be bell shaped thus suggesting that the variables were normally distributed. In order to mitigate the other effects described above, as further recommended and used by You and colleagues (2013) in their validation of the Chinese PNI, an item parceling procedure, which involves parsing items into two or more groups, was executed.

Table 1.
Standardized parcel saturations for the French Pathological Narcissism Inventory.

Parcel	CSE	EXP	SSSE	HS	GF	DEV	ER
1.	.897						
2.	.912						
3.	.871						
4.		.681					
5.		.771					
6.			.701				
7.			.899				
8.				.763			
9.				.875			
10.				.748			
11.					.827		
12.					.795		
13.					.692		
14.						.861	
15.						.715	
16.						.669	
17.							.759
18.							.852
19.							.799

Note: N= 533; CSE = contingent self-esteem; EXP = exploitativeness; SSSE = self-sacrificing self- enhancement; HS = hiding the self; GF = grandiose fantasy; DEV = devaluation; ER = entitlement rage.

Results from the second confirmatory factor analysis showed evidence of a good fit, $\chi 2SB$ (1, N = 533) = 7.277, $p < .01$, CFI = .971, TLI = .962, RMSEA = .046, 90% CI [0.038, 0.053], SRMR = .035. Parcel saturations within attributed factors are presented in Table 1. Factor inter-correlations and internal coherence coefficients are presented in Table 2. Inter-correlations ranged from 0.146 to 0.600. In order to reduce the probability of type I error, a corrected significance level of 0.001 was used and all but one inter-correlations were significant at the corrected level. Internal consistency varied between scales, α = 0.664–0.903, suggesting that the HS scale may have problematic internal consistency. The remaining scales had internal consistencies ranging from moderate (GF and SSSE), to good (ER, DEV and EXP), to excellent (CSE) (Cicchetti, 1994).

Table 2.
Descriptive statistics, gender differences, facet intercorrelations and internal consistency of the French Pathological Narcissism Inventory.

								Boys (n=129)		Girls (n=401)			
Facet	1	2	3	4	5	6	7	*M*	*SD*	*M*	*SD*	*t*	*d*
CSE	(.903)							2.74	1.02	3.09	0.92	3.447***	0.37
HS	.492***	(.664)						3.50	1.05	3.57	0.96	0.651	0.07
GF	.488***	.364***	(.705)					3.61	1.09	3.20	0.95	-3.754***	0.41
ER	.578***	.408***	.467***	(.815)				2.77	0.85	2.85	0.85	0.924	0.09
DEV	.600***	.583***	.406***	.577***	(.820)			2.59	0.87	2.90	0.88	3.506**	0.35
SSSE	.510***	.324***	.471***	.404***	.377***	(.788)		3.50	0.90	3.42	0.75	-0.953	0.11
EXP	.146**	.211***	.434***	.320***	.222***	.282***	(.813)	3.49	0.89	3.14	0.83	-3.963***	0.42
GRAND	.492***	.387***	.849***	.515***	.434***	.731***	.737***	3.53	0.76	3.26	0.65	-3.760***	0.41
VULN	.828***	.778*	.532***	.778***	.849***	.499***	.272***	2.90	0.78	3.10	0.72	2.591*	0.27
Total	.778***	.697***	.744***	.756***	.765***	.668***	.522***	3.17	0.70	3.17	0.62	-0.065	0.01

Note: Cronbach's alphas appear in parentheses, *p<.05; **p<.01;***p<.001; CSE = contingent self-esteem; EXP = exploitativeness; SSSE = self-sacrificing self- enhancement; HS = hiding the self; GF = grandiose fantasy; DEV = devaluation; ER = entitlement rage, GRAND = grandiose factor, VULN = vulnerable factor, total = total PNI score.

Table 3.

Adjustment statistics for the French Pathological Narcissism Inventory for Adolescents.

Table 3.
Adjustment statistics for the French Pathological Narcissism Inventory for Adolescents.

Model	X^2SB	*dl*	*p*	CFI	TLI	RMSEA IC 90%	SRMR	AIC
1 factor	4.836	1	<0.05	.944	.934	.060 [.053, .067]	.057	24441.429
2 factors (Pincus et al., 2009)	6.015	1	<0.05	.947	.937	.059 [.052, .065]	.055	24425.906
2 factors (Wright et al., 2010)	6.107	1	<0.05	.958	.950	.052 [.045, .059]	.051	24365.028

Second order factor structure.

A second order confirmatory factor analysis was then conducted to verify the adjustment of a higher order two factor structure comprised of the seven factors previously established by Pincus et al. (2009). Consistent with the approach used by Wright et al. (2010), three models were validated. In the first model that was tested, the seven first order factors were subsumed within one higher order factor, pathological narcissism. The second model that was tested was that of Pincus et al. (2009), where the factors EXP, ER, and GF are subsumed within a factor which characterizes grandiose narcissism, while the factors CSE, SSSE, DEV and HS are grouped within a factor representing vulnerable narcissism. The third model that was tested was that proposed by Wright et al. (2010), and which differed from that of Pincus et al. (2009) in that the ER factor is placed under the vulnerable second order factor and the SSSE factor is placed under the grandiose second order factor. The same fit indices were used, with the addition of the Akaike information criterion (AIC), which permits between-model comparisons (Brown, 2006). At the first level, the item parcels were included in the facets and the facets were included in the second-order factors. Adjustment statistics are presented in Table 3. All three models had acceptable adjustment indices just below the threshold of what is considered good quality. AIC coefficients suggested that the two-factor model proposed by Wright and colleagues (2010)

had the best adjustment. The AIC difference between the latter model and the others is so large that the probability of it being the best fitting of the three is practically 1 (Wagenmakers & Farrell, 2004; Burnham & Anderson, 2004). In other words, the probability that either the one second order factor or Pincus' two second order factor model represents the best fitting one is much less than 0.001. Consequently, the Wright model was retained for the remaining analyses. Correlations between first-order and second-order factors and between the two second order factors of this model are presented in Table 4.

Table 4.
Correlations between the first-order facets and the second order factors and between both second order factors of the French Pathological Narcissism Inventory modeled after Wright and colleagues (2010).

Factor	CSE	HS	GF	ER	DEV	SSSE	EXP	Grandiose
Grandiose	.494**	.389**	.849**	.516**	.435**	.730**	.736**	
Vulnerable	.828**	.779**	.532**	.779**	.849**	.499**	.275**	.591**

Note: **p<.01; CSE = contingent self-esteem; HS = hiding the self; GF = grandiose fantasy; ER = entitlement rage; DEV = devaluation; SSSE = self-sacrificing self-enhancement; EXP = exploitativeness.

Temporal stability.
Results from the correlational analyses and the dependent samples t-tests are presented in Table 5. Parametric analyses were used because 1) the facets represent a grouping of variables which, as per the Central Limit Theorem, theoretically produces a normal distribution and 2) as recommended by Tabachnick and Fidell (2013) for large samples, visual inspection of the distributions confirmed their normal shape. Correlation coefficients ranged from .733 to .901 (grandiose narcissism r = .814, vulnerable narcissism r = .926, and PNI total score r = .902), thus meeting the criteria for adequate temporal stability. No significant differences between measures at Time 1 and Time 2 were found, except for the SSSE scale.
Table 5.
Temporal stability of the French Pathological Narcissism Inventory.

Table 5.
Temporal stability of the French Pathological Narcissism Inventory.

Scale	Test		Retest		Test-retest correlation	*t*
	M	*SD*	*M*	*SD*	*r*	
CSE	3.16	.92	3.11	1.04	.901*	.793
HS	3.58	1.02	3.45	1.13	.874*	1.631
GF	3.37	.95	3.33	.94	.837*	.570
ER	2.95	.90	2.88	1.03	.877*	1.076
DEV	2.86	.89	2.86	.92	.807*	.036
SSSE	3.52	.65	3.30	.63	.733*	3.207*
EXP	3.15	.82	3.15	.81	.734*	.000
Grandiose	3.35	.61	3.26	.61	.814*	1.620
Vulnerable	3.14	.78	3.07	.89	.926*	1.332
Total score	3.23	.65	3.15	.73	.902*	1.652

Note: * $p<.01$, $N=49$; CSE = contingent self-esteem; HS = hiding the self; GF = grandiose fantasy; ER = entitlement rage; DEV = devaluation; SSSE = self-sacrificing self- enhancement; EXP = exploitativeness.

Internalizing/externalizing difficulties and self-esteem.

Correlations between the PNI and the CBCL YSR and the SPPA are presented in Table 6. Pathological narcissism was positively correlated with internalizing and externalizing symptoms ($r = .562$, $p < .01$ and $r = .521$, $p < .01$, respectively) and negatively correlated with self-esteem ($r = -.468$, $p < .01$). In addition, vulnerable narcissism had stronger correlations with internalizing/externalizing difficulties and self-esteem than did grandiose narcissism.

Table 6.
Correlations with internalizing and externalizing difficulties and self-esteem.

Facets	Internalizing	Externalizing	Self-esteem
CSE	.520**	.360**	-.527**

HS	.566**	.426**	-.476**
GF	.302**	.356**	-.282**
ER	.332**	.481**	-.227**
DEV	.475**	.347**	-.411**
SSSE	.223**	.204**	-.213**
EXP	.141*	.224**	.024
Grandiose	.316**	.370**	-.229**
Vulnerable	.625**	.524**	-.523**
Total	.562**	.521**	-.468**

Note: *p<.05; **p<.01; CSE = contingent self-esteem; HS = hiding the self; GF = grandiose fantasy; ER = entitlement rage; DEV = devaluation; SSSE = self-sacrificing self- enhancement; EXP = exploitativeness.

Gender differences.

Results of the t-tests comparing adolescent males and females are presented in Table 2. Adolescent males scored higher on the GF and EXP facets and grandiose phenotype, while adolescent females scored higher on the CSE and DEV facets and vulnerable phenotype. Effect sizes of gender differences on different facets ranged between 0.07 and 0.42, with a mean of 0.26.

Discussion

The aim of the study was to evaluate the factor structure and psychometric properties of the French PNI-A. The findings demonstrated that the French PNI has good psychometric properties when used with adolescents and replicated the first-order factor structure reported by Pincus et al. (2009), as well as the grandiose and vulnerable second-order factor structure established by Wright et al. (2010) with adults. The findings of the confirmatory factor analysis showed that the French PNI-A has a seven-factor first-order structure comprised of contingent self-esteem, hiding the self, grandiose fantasy, entitlement rage, devaluation, self-sacrificing self-enhancement, and exploitation. The internal consistency of all the first-order factors was acceptable, with the exception of hiding the self. This is consistent with the findings of Pincus et al. (2009), who also reported a lower alpha for HS. Furthermore, a two-level higher factor order was found comprising of grandiose and vulnerable narcissism, where grandiose narcissism included the exploitation, self-sacrificing self-enhancement, and grandiose fantasy subscales and vulnerable narcissism included the contingent self-esteem, entitlement rage, hiding the self and devaluation subscales. With regard to retest reliability, temporal stability over a one month period of both grandiose and vulnerable

phenotypes as well as the total score as assessed by the PNI-A was good, proving even superior to that reported by Turmel (2014) among adults.

Vulnerable and grandiose narcissism was found to be strongly correlated in adolescents in this study, extending prior findings from studies with adults (Barnett & Womack, 2015; Di Pierro, Mattavelli, & Gallucci, 2016; Fernie, Fung, & Nikcevic, 2016; Fossati, Feeney, Pincus, Borroni, & Maffei, 2015). These findings are in line with the theoretical views of Pincus (Lukowitsky & Pincus, 2010) that vulnerable and grandiose facets are closely interconnected aspects of narcissistic pathology, and which may, as Fossati et al. (2015) put it, "dynamically oscillate within a person across time and occasions" (p. 421). At the same time the results from the confirmatory factor analyses extended prior findings (Wright et al., 2010; You and al., 2013; Jaksic and al., 2014; Fossati and al., 2015) showing that, despite their strong association, the vulnerable and grandiose facets are distinct and should not be subsumed under a single factor. Their distinctiveness is also evident in the findings of this study by associations of both facets with other constructs, which either differ in magnitude, as in this study (see below; also Fossati et al., 2015), or in direction (Barnett & Womack, 2015; Di Pierro et al., 2016; Fernie et al., 2016).

As hypothesized, both vulnerable and grandiose narcissism were found to be positively correlated with internalizing and externalizing symptoms and negatively correlated with self-esteem. This extends previous findings (Miller et al., 2012; Barry & Kauten, 2014; Barry, Loflin, & Doucette, 2015; Pincus et al., 2009) and suggests that the PNI captures pathological rather than adaptive forms of narcissism. Compared to grandiose narcissism, vulnerable narcissism correlated more strongly with internalizing/externalizing difficulties, and there were also stronger negative correlations between vulnerable narcissism and self-esteem. This extends previous findings with adults of stronger relationships between vulnerable narcissism and externalizing symptoms (Schoenleber and colleagues, 2011), depressive and anxious temperaments (Tritt, Ryder, Ring, & Pincus, 2010), depressive and anxious symptoms (Jakšić, Milas, Ivezić, Wertag, Jokić-Begić, & Pincus, 2014; Schoenleber, Roche, Wetzel, Pincus, & Roberts, 2015), as well as higher negative correlations with self-esteem (Pincus et al., 2009; Maxwell, Donnellan, Hopwood, & Ackerman, 2011; Barnett & Womack, 2015).

An important contribution of the present study was the identification of a number of significant small to medium sized gender differences. Consistent with previous studies with adults (study 1 of Pincus et al., 2009; study 2 of Wright et al., 2010), adolescent males had significantly higher scores on the Grandiose Fantasy and Exploitiveness facets of grandiose narcissism, while females scored higher on the Contingent Self Esteem and Devaluation facets of vulnerable narcissism. Similar

gender differences in Contingent Self Esteem and Exploitativeness have also been previously reported in young Croatian adults (Jakšić & colleagues, 2014), as well as in Grandiose Fantasy for young Chinese adults (You & colleagues, 2013). With regard to Devaluation, the effect size (d = 0.35) found in the present study was much larger than that reported by Wright et al. in adults (2010; d = 0.12), suggesting that adolescent females may be particularly vulnerable to using devaluation of themselves and others. It is possible that this may be linked to the intense appearance-related societal pressure adolescent females are subjected to during puberty when they are also challenged by physical changes. In sum, consistent with the conclusions of Pincus et al. (2009) and Wright et al. (2010), it is also evident that the PNI is a measure that is sensitive to gender differences that emerge and may vary as a function of age.

While the study has a number of strengths including the relatively large sample size and inclusion of participants from schools in the community as well as university students, the findings from this study should be considered in light of certain limitations. The most important has to do with generalizability: because the sample did not include participants from a clinical setting, it is not clear that the findings apply to a clinical population and further replication with a clinical population is thus needed. Furthermore, while the present sample included a sizable number of male participants, respondents were predominantly (75%) female and this may have influenced our results, so that replication of the findings especially concerning gender differences is called for in a sample more equally matched in terms of gender.

In sum, the PNI-A (French) was demonstrated to have sound psychometric properties, and show that the factor structure found in adults is also present when the PNI is used with adolescents. The findings show that vulnerable and grandiose narcissism can be identified in adolescents using the PNI. A stronger positive relationship between vulnerable narcissism and internalizing and externalizing difficulties was found, as well as a stronger negative relationship with self-esteem. This suggests that it is particularly important to include a focus on vulnerable narcissism in future research with adolescents. Finally the gender differences in grandiose and vulnerable narcissism identified in the present study underscore the importance of considering gender in future research on narcissism.

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Doi: 10.6092/2282-1619/2018.6.1848