The Standardization of the Pathological Narcissism Inventory in the Turkish Language and Testing Its Validity and Reliability

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SUMMARY

Objective: Despite its importance as a psychological construct, narcissism have been inconsistently defined and measured across studies. Overly narrow construct definition of pathological narcissism and insufficient measurement lead Pincus et al. (2009) to develop Pathological Narcissism Inventory (PNI). Which is a multidimensional measure of pathological narcissism that assesses both overt and covert expressions of narcissistic vulnerability. The aim of this study was to adapt PNI into Turkish language and investigate the validity and reliability indicators.

Method: The Turkish version of Pathological Narcissism Inventory was applied to 518 (205 male) university students. Cronbach alpha and test-retest reliability coefficients were calculated. Confirmatory and exploratory factor analyzes have been carried out to determine the factors. The Narcissistic Personality Inventory (NPI) and the Bell Object Relations and Reality Assessment Scale (BORRTI) object relational form were used for evaluation of validity.

Results: The Cronbach alpha is .93 for the total score, and test-retest reliability is r= .91. The principal components analysis revealed 6 factors explaining 50.24% of the variance. According to the structural equality model, fit indices indicate valid and reliable models. Analyses revealed significant correlation coefficients with NPI and BORRTI.

Conclusion: The validity and reliability indicators of PNE Turkish form were within an acceptable range and PNE can be used for further studies.

Keywords: Pathological narcissism, grandiosity, vulnerability, validity, reliability, factor analysis

INTRODUCTION

Since the early attention on the personality disorder of narcissism by the British physician Havelock Ellis (1898) and the Austrian neurologist Sigmund Freud (1914), complications and diverse traits of narcissism have been emphasized in the recent years by able psychoanalysts such as Rosenfeld (1964), Kernberg (1967, 2009), Kohut (1971, 1977), and Ronningstam (2005). Narcissistic Personality Disorder (NPD) was included, for the first time in 1980, under the Axis II disorders in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM -III) by the American Psychiatric Association (APA). However, in the 2000s, difficulties were encountered in research on the clinical aspect of narcissism, its definition and diagnosis. The two major areas of difficulty were, firstly, the uncertainties of the borderline between pathological narcissism and normal level narcissism; and, secondly, the inadequacy of the available psychometric tools for grading the level of narcissism (Pincus et al. 2009, Miller et al. 2017).

Considering the area of the first difficulty referred to above, the level of narcissism involved in pursuing one's life, work and maintaining a healthy personality has been observed to

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differ from the pathological level of narcissism that impairs the individual's functionality in daily life and quality of life. Whereas research on social and personality psychology rates narcissism as a normative personality dimension on the bases of the adaptive and maladaptive aspects of narcissism (Miller and Campbell 2010, Tamborski and Brown 2011), clinical theory and related research tend to emphasize the pathological traits of narcissism (Pincus and Lukowitsky 2010). At the stage reached by the most recent studies on narcissism, it is known that a clear discriminating line between normal and pathological narcissism cannot be drawn (Miller et al. 2017). Clinically, narcissism is described as ''expectations of the individual expressed in a covert or open manner, for social approval in order to further the capacity to organize a relatively positive self-perception and its limits and to meet the inherent needs to be recognized with admiration" (Pincus et al. 2009, Morf et al. 2011a, Pincus and Roche 2011, Pincus 2013). For clinical practice, two concepts of pathological narcissism were included in the DSM-5 by the APA. One of these is the categorical model of NPD in DSM-IV, formed by adherence to diagnostic criteria equated to characteristics of pathological personality disorders and depending on functional impairments specific to personality disorders. The other is the recommended new dimensional model, reflecting the concept of narcissism as a dimensional personality trait emphasized by the studies on social and personality psychology (Narrow et al. 2013). The need for expanding the scope of studies with a dimensional approach to narcissism has been expressed in DSM-5 (APA 2013).

Current studies on the description and diagnosis of narcissism are focused on the fundamental dimensions of vulnerability and grandiosity which present on a wider and complementary basis the categorical approach that attempts to separate the pathology aspect (Wink 1991, Rose 2002, Dickinson and Pincus, 2003, Pincus et al. 2009, Miller et al. 2017). In the Hierarchic Model of Narcissism, vulnerable and grandiose narcissism are recognized in clinical theory and psychiatric diagnosis as two different structures with open and covert manifestations within themselves (Pincus, 2013). Grandiose narcissism is recognized by manifestations of exhibitionism, entitlement, audacity, resentment, need to draw attention, excessive demands, disregarding the needs of others, decreased sense of empathy. In contrast, vulnerable narcissism is described as excessive modesty, sensitivity to criticism, high level of anxiety/concern, refrainment, being continually stressed, suffering, having expectations of grandiosity related to self at a recognizable level in close relationships with others (Akhtar and Thomson 1982, Wink 1991, Miller et al. 2017). It has been shown by Rose (2002) that while grandiose narcissism is related to increased level of happiness depending on unrealistic level of self-respect, vulnerable narcissism is related to low/fragile self-esteem and reduced level of happiness. Findings of the studies on narcissism suggest that either the concept has a structure with more than one dimension or the studies have been carried out with individuals bearing diverse traits of narcissism (Eldoğan 2015).

The second basic problem is the measurement of narcissism. Reported studies in the literature on narcissism with emphasis on the grandiose narcissism, have been conducted using the Narcissistic Personality Inventory (NPI) developed by Raskin and Terry (1988). In the recent years the structural validity and dimensionality of NPI, its conceptual validity on the other aspects of narcissism and whether it measures the healthy or pathological type of narcissism (Rosenthal et al. 2011, Vater et al. 2013), its altering factor structure (Ackerman et al. 2011), the low reliability of the recommended subscales (del Rosario and White 2005), and the difficulties faced in computing the total score (Miller and Campbell 2008) have been questioned. The Hypersensitive Narcissism Scale, (HSNS) was developed to overcome the existing ambiguity of the conceptualization and measurement of narcissism and to be able to focus on the covertness or vulnerability aspects thought to be lacking in the literature (Hendin and Cheek 1997).

Studies on narcissism have been conducted in our country for long years by means of the NPI, adapted to the Turkish language by Kızıltan (2000) and Atay (2009), and shown to be a valid and reliable psychometric tool consistent with the DSM in evaluating the grandiose characteristics of narcissism. The HSNS, developed by Hendin and Cheek (1997) and adapted to our culture by Şengül et al. (2015) is another psychometric tool used for studies on narcissism. In its developmental stage, the HSNS was found to be unrelated to NPI, which indicated that narcissism should be evaluated both on the vulnerable and the grandiose characteristics.

The increasing interest reflected in the international literature on evaluation of the model on narcissism and pathological narcissism indicated the need for the development of a specific psychometric tool to evaluate narcissism with all its characteristics (Krueger and Markon 2006, Widiger and Trull 2007). With this objective the Pathological Narcissism Inventory (PNI) was developed by Pincus et al. (2009) in order to assess the complicated structure of narcissism. PNI has been adapted to many languages including Chinese, German, Greek, Italian and Croatian. It has become a leading measurement, widely used in the field by evaluating narcissism on 7 factors of a comprehensive primary model, as well as providing the facility to evaluate the vulnerable and grandiose dimensions through a second level model. Thus, Pincus et al. (2009), after their initial studies have met the need for the development of a secondary upper factor structure by combining the subscales. Wright et al. (2010) have extended their studies on the vulnerable and grandiose dimensions of narcissism by evaluations based on this structure of PNI. The models of Pincus et al. (2009)

and of Wright et al. (2010) have been examined by validity and reliability studies in diverse cultures, and the second level models proposing the existence of vulnerable and grandiose narcissism have been validated (Karakoula et al. 2013**,** You et al. 2013, Morf et al. 2017). The NPI (Kızıltan 2000) and the NPI-Short Form (Atay 2009) and more recently the HSNS (Şengül et al. 2015) are being used in Turkey and despite their respective contributions to the literature, the need for a scale with larger scope to evaluate both the vulnerable and the grandiose dimensions is being stressed. The aim of the present study is to adapt PNI to the Turkish language, to investigate its values of validity and reliability and to examine its primary and second level models. This is believed to enable a parallelism with the studies on narcissism reported in the literature in providing a pioneering tool for the new studies to be conducted in our culture.

METHOD

Participants

Our study was carried out in the academic year of 2016-2017 with the participation of 518 students aged between 18 and 35 years and attending to different faculties of Hacettepe University. Although 539 students had volunteered initially, 21 had to be excluded from the study, since two (0.37%) did not indicate age; 10 (2.30%) did not complete the demographic questionnaire, and while five (0.96%) indicated having psychiatric diagnoses, two (0.37%) did not answer the question of psychiatric diagnoses. Of the 518 total participants included in the study, 205 were males and 313 were females with a mean age of 22.07 (range 17-30, SD ±0.10); and 20.67 (range18-35, SD ±0.16), respectively.

Materials and Procedure

Participants were asked to sign a written informed consent form and fill the sociodemographic form including questions about gender, age, educational status, etc. In order to evaluate the criterion validity, the Narcissistic Personality Inventory (NPI), and the Bell Object Relations and Reality Testing Inventory (BORTTI) were also included besides the Pathological Narcissism Inventory (PNI).

*The Pathological Narcissism Inventory (PNI))***:** Developed by Pincus et al. (2009), the original version of this self-report scale consists of 52 items aiming to evaluate narcissism at the levels of vulnerability and grandiosity, with 6 Likert type statements, ranging from 0: "not at all like me" to 5: "very much like me". The PNI provides a means to evaluate narcissism through two main dimensions, namely, the vulnerable narcissism and the grandiose narcissism, and a 7- factors structure consisting of Contingent Self Esteem (CSE), Exploitativeness (EXP), Self-Sacrificing Self-Enhancement, (SSSE), Hiding Self (HS), Grandiose Fantasy (GF), Devaluing (DEV), Entitlement Rage, (ER). While vulnerable narcissism is evaluated with the combination of three factors including CSE with 12 items, HS with 7 items and DEV with seven items, grandiose narcissism is evaluated by the remaining four factors including EXP with five items, SSSE with six items, GF with seven items and ER with eight items. Explained variance by seven factor structure is 53.76%**.** Cronbach's Alpha for the PNI subscales ranged between 0.78 and 0.93, and 0.95 for the total score.

It has been proposed that the PNI is suitable for assessing normal and clinical cases and that an increase in the total score points vulnerable narcissism (Thomas et al. 2012, Pincus 2013).

The Narcissistic Personality Inventory (NPI)): The NPI, developed by Raskin and Terry (1988) and adapted to the Turkish language by Atay (2009) is a 16-item scale used in our study with the purpose to evaluate criterion validity of the PNI. The six dimensions of the NPI comprise Authority, Self-Sufficiency, Superiority, Exhibitionism, Exploitativeness, and Entitlement (Raskin and Terry 1988). High scores on the PNI point to narcissistic personality. Validity and reliability of the Turkish language version of the PNI were tested by Atay, (2009) and shown to be suitable for assessment on narcissism. In our study the Cronbach's Alpha of the PNI was found to be 0.74**.**

The Bell Object Relations and Reality Testing Inventory (BORRTI): The BORRTI was developed by Morris Bell, (1995) for evaluating individuals with impaired ego functioning, personality disorders or having problems with reality -testing. It has two main scales, ''Object Relations" and ''Reality Testing" on two separate forms each consisting of 45 items. It was standardized in the Turkish language and its validity and reliability were tested and found suitable for clinical use by Uluç et al. (2015). The form on object relations with the subscales on Alienation, Insecure Attachment, Self-Centeredness and Social Inadequacy, was used within the scope of our study for assessment of concept validity of the PNI. In our study the Cronbach's Alpha was found to be 0.73.

Adaptation of the PNI to the Turkish Language

This study was approved by the Ethics Committee of Hacettepe University. Also, permission was obtained from Pincus and his collaborators, who developed the Pathological Narcissism Inventory (PNI) in 2009, for translation to the Turkish language. Translation was done by a group of clinical psychologists consisting of two professors, an Assoc. Prof. Dr., and two PhDs, specialized in different fields, by comparing the translated form with the original version on the basis of content, language and cultural adaptation. The translated version was tested on 20 participants other than main study, who were subsequently queried on the ease of comprehending

and responding to the questions in order to ascertain that difficulties did not exist on both accounts. Items of the Turkish version of the PNI were organized with respect to all existing recommendations; and all items were then translated back to English language by professional translators under oath. Pincus and his collaborators confirmed the equivalence of the translated and the original items and the final format was reached by implementing their recommendations.

The Turkish language version of the PNI (PNI-TR) was tested on the participants of the main study on a volunteering basis, in classes at lecture time. For the purposes of the test-retest requirement, 55 randomly selected participants outside the sample were asked to put their student numbers on the PNI-TR form. These participants were informed that this information would only be used for retesting on the PNI-TR and were asked to complete the test again after an interval of one month. Of the 55 test forms four were discarded for being incomplete and 51 were scored.

RESULTS

In order to determine the validity of the PNI-TR, the Cronbach's Alpha and the test-retest values were calculated. With this aim, the factor loading of the PNI –TR was investigated and the factor structure was determined by means of the Kaiser normalization and factor analysis by oblique rotation on the basis of the original PNI. Also, the relationship of PNI-TR with other psychometric tools were determined. Structural equation modelling was used in order to test the second level modelling. Statistical analyses were carried out on the SPSS 22.0 (IBM, Armonk, NY, USA) and the AMOS 23.0 (Byrne BM, London, England).

Construct Validity of the PNI-TR

Results of Exploratory Factor Analysis

Construct validity of PNI-TR was investigated by using a series of exploratory and confirmatory factor analyses. Exploratory factor analysis (EFA) yielded 10 factors with Eigen values > 1 that explained 47% of the variance. The scree plot indicated that the factor load was distributed to seven factors. It was determined that only the 2nd and the 13th items were loaded on 7th factor and their loading value was .30**.** Therefore, a six factor solution was tested. The results showed that the factor loading of items 2 and 13 remained as .30 and that they loaded with similar values on more than one factor. After exclusion of items 2 and 13, the six-factor solution of PNI-TR showed a Cronbach's Alpha of 0.93 computed over 50 items and the variance explained by six factors improved to 49.08%. The factors of the PNI-TR were named as 'Recognition Expectations' (REX) with 18 items; 'Grandiose Self' (GS) with 5 items;, 'Vulnerable Self' (VS) with 11 items; 'Approval Seeking'(AS) with 4 items, 'Grandiose Fantasy' (GF) with 7 items and 'Self Sacrificing'(SS):with 4 items. Results of EFA after oblique rotation are shown in Table 1.

Table 1. Factor Analysis Results of Pathological Narcissism Inventory and Total Item Correlation Coefficients

Factor	item	Exploratory Factor Analysis (EFA) And Confirmatory Factor Analysis (CFA) (1: REX, 2: GS, 3: VS, 4: AS, 5: GF, 6: SS)			
		Pathological Narcissism Inventory Items	EFA	CFA	Total Item Correlation Coefficients
1	52	I get very angry when others disagree with me.	0.706	0.584	0.652
1	29	I get angry when I am criticized.	0.698	0.586	0.656
1	37	I get mad when people do not realize that I am such a good person.	0.685	0.722	0.731
1	11	I get extremely mad when people do not appreciate what I do for them.	0.661	0.629	0.661
1	18	I almost always get angry when I cannot get what I want from others	0.652	0.674	0.693
1	41	I frequently find myself envying other people's success.	0.631	0.555	0.620
1	40	I get disappointed when people do not notice me..	0.614	0.780	0.752
1	36	I find it hard to feel good about myself so long as I am not sure that others like me.	0.589	0.701	0.704
1	16	I feel worthless when people do not notice me.	0.581	0.685	0.688
1	20	I expect people to do something for me in return for what I do for them..	0.557	0.576	0.599
1	8	I start to feel bad about myself when people do not distinctively notice me.	0.544	0.600	0.627
1	12	People who do not take interest in what I do or say make me very angry.	0.536	0.521	0.511
1	32	My mind is preoccupied with the thought and anxiety that people are not interested in me.	0.533	0.649	0.667
1	5	I have hard time feeling good when I am alone.	0.500	0.420	0.486
1	30	I find it difficult to feel good as long as I am not sure whether people admire me or not.	0.497	0.590	0.613
1	48	I need other people to acknowledge me.	0.489	0.626	0.610
1	47	It is very difficult for me to continue to feel good about myself when people do not treat me the way that I expect them to.	0.473	0.636	0.605

Continue to the Table 1.

1	34	I sometimes stay away from people because I am anxious that they will not appreciate what I do for them.	0.461	0.609	0.597
2	10	I can make people believe whatever I want them to believe.	0.767	0.717	0.782
2	4	I generally can be persuasive in any subject.	0.641	0.531	0.664
2	15	It is easy for me to manipulate people	0.628	0.635	0.667
2	23	I can see through people and know what they're thinking and feeling.	0.600	0.552	0.632
2	35	Everyone likes to hear my stories	0.554	0.522	0.610
2	38B	I will not settle until I get what I deserve	0.393	0.284	-
2	2A	I have many ups and downs with my self-confidence.	0.213	-	-
3	51	It is sometimes easier to be alone rather than confronting the fact that I cannot get everything that I want from people.	0.740	0.668	0.725
3	50	I feel tense and ashamed when others sense that I am in need of something.	0.662	0.715	0.690
3	7	I hate asking for help.	0.647	0.507	0.633
3	17	I sometimes stay away from people for the reason that they might let me down.	0.645	0.680	0.673
3	27	I sometimes stay away from people for I am afraid that they will not do what I ask from them.	0.625	0.678	0.666
3	9	I often do not reveal my needs to others for the reason that they might think of me as a dependent and needy person.	0.619	0.618	0.666
3	46	I cannot stand depending on others because that makes me feel weak about myself.	0.603	0.470	0.593
3	24	I often get mad at myself when people let me down.	0.561	0.515	0.582
3	28	It is difficult for me to reveal my personal weakness to others.	0.545	0.547	0.586
3	21	I feel ashamed about what I want from people when they cannot deliver my expectations.	0.421	0.518	0.510
3	44	It is important to show people that I can accomplish a task on my own even though I intrinsically have doubts about it.	0.359	0.495	0.478
3	13A	I do not share my intimate thoughts and feelings with people whom I do not admire.	0.211	-	-
4	33	I like having friends who rely on me because it makes me feel important about myself.	0.664	0.702	0.713
4	22	I feel like an important person when people rely on me.	0.633	0.686	0.693
4	19	I sometimes need the people in my life to assure my self-esteem.	0.559	0.673	0.607
4	3	I sometimes feel ashamed about my expectations from people when they disappoint me.	0.410	0.564	0.431
5	45	I frequently fantasize that I am recognized for my accomplishments.	-0.706	0.744	0.716
5	49	I would like to be known world-wide.	-0.642	0.552	0.655
5	42	I frequently fantasize that I do heroic things.	-0.557	0.669	0.641
5	31	I frequently fantasize that I am rewarded for my efforts.	-0.550	0.616	0.583
5	14	I frequently fantasize that I have great influence on people and things around me.	-0.489	0.581	0.555
5	26	I frequently fantasize that I achieve things that are beyond my potentials.	-0.482	0.658	0.536
5	1	I frequently fantasize that I am admired and respected..	-0.478	0.376	0.501
6	25	Sacrificing myself for others makes me a better person. Than the people I'm helping	0.782	0.593	0.784
6	39	I try to prove how much of a good person I am by making sacrifices.	0.595	0.873	0.698
6	6	I can make myself happy by taking care of others.	0.564	0.774	0.594
6	43	I help others to prove that I am a good person.	0.471	0.769	0.595
	Eigenvalue	REX: 12.40 GS: 3.63 VS: 2.99 AS: 2.29 GF: 1.76 SS: 1.53			
	Explained variance %	REX: 25.32 GS: 7.40 VS: 6.11 AS: 4.69 GF: 3.58 SS: 3.13			
	Cronbach Alfa	FEYB: .92 BK: .74 KK: .85 KO: .58 BH: .82 KF: .74			
		PNI-TR Explained Total Variance: 50.24%			

A: Items extracted after exploratory factor analysis. B: Items extracted after confirmatory factor analysis. PNI= Pathological Narcissism Inventory. (1)Recognition Expectations=REX, (2)Grandiose Self= GS, (3)Vulnerable Self = VS, (4)Approval Seeking= AS, (5)Grandiose Fantasy= GF and (6)Self Sacrificing= SS.
NOTE: The item numbers given in the 'article no' section of the scale refer to the item numbers in the orinal form of the measuring instrument. In the presentation of the substances in the table, the order of the Turkish form in the Exploratory Factor Analysis was taken as a basis. Researchers who want to use the measurement tool can use the state of the table.

Table 2. PNI – Turkish Version and Summary of Adaptation Statistics of Proposed Models

Models	X^2	df	CMIN/DF	CFI	PCFI	IFI	RFI	GFI	RMSA	Variance %
MODEL 1	*293.412*	13	22.546	.789	.488	.790	.649	.869	.204	-
MODEL 2	294.165	13	22.628	.788	.488	.790	.648	.869	.204	-
MODEL 3	217.305	13	16.716	.846	.524	.847	.740	.894	.174	-
MODEL 4	27.224	8	3.40	.976	.520	.976	.937	.882	.058	48.47

MODEL 1. Pincus et al. (2009) original model. MODEL 2 Wight et al. (2010) first model. MODEL 3 Wight et al. (2010) second model. MODEL 4. The model proposed by Turkish version. p< 0.001.

Results of Confirmatory Factor Analysis

Following the EFA, AMOS program was used to carry out confirmatory factor analyses (CFA). It was found that loading value of item 38 was .30, and also loaded on multiple factors. At the end of EFA and CFA, it was decided to exclude items 2, 13 and 38 from the PNI-TR. Cronbach's Alpha values were declined if each of the remaining 49 items were deleted. It was decided to include all items without exclusions when computing the total score, but to exclude items 2, 13 and 38 when using the six-factor structure as this was more advantageous when working on the factors. Hence, it was determined that using the 49-item version of the PNI-TR, explained variance was 50.24%, Cronbach Alpha remained as 0.93, the χ^2 value after the Bartlett globality test was 10,216,604 ± S.D.112. Results after CFA are shown in Table 1. The model fit indices assessed by CFA were**:** χ^2(878; SD= ±518) = 2253.51, p<0.001; CMIN/DF**:** 2.67 GFI**:** 0.78; AGFI**:** 0.79, NNFI**:** 0.84, CFI**:** 0.87, RMSEA**:** 0.05**.** Hence, standardization of the first level model was completed, the factors were defined and with the results of CFA the adequacy of model fit in the PNI-TR was proven.

In the second level modeling of the PNI as proposed by Pincus et al. (2009), composite and facet scores were calculated, where Grandiosity was composed of Exploitativeness, Self-Sacrificing Self-Enhancement, and Grandiose Fantasy; Vulnerability was composed of Contingent Self-Esteem, Hiding the Self, Devaluing, and Entitlement Rage (Wright et al. 2010). Later Wright et al. (2010) proposed two different models where in factors ER and SSSE were considered as dimensions of vulnerable narcissism instead of grandiose narcissism. In their modelling, ER was included in one model and SSSE was included in the other, without further alteration. Both models were tested in further studies and more effective models were reached when ER and SSSE were, respectively, included in the vulnerable and the grandiose dimensions in diffident models (Morf and Rhodewalt 2001a, Pincus and Lukowitsky, 2010 Karakoula et al. 2013, Thomas et al. 2012, Morf et al. 2017).

Given this background of reports, our study proceeded to testing, on the AMOS program, factors distribution of the second level model in the vulnerable and grandiose narcissism dimensions. Four models were tested. Model 1, the first to be tested, was the same model tested by Pincus et al. (2009) in their original study, and includes factors ER, EXP, GF and SSSE under the grandiose narcissism dimension and CSE, HS and DEV factors under the Vulnerable Narcissism dimension. Model 2, the second to be tested, was recommended by Wright et al. (2010) and entails factors CSE, SSSE, DEV and HS under the vulnerable narcissism and EXP, ER and GF under the grandiose narcissism. Model 3, the third to be tested, was another model recommended by Wright et al. (2010) Here, factors CSE, DEV, HS and ER are placed under the vulnerable narcissism dimension, while EXP, SSSE and GF are included under the grandiose narcissism dimension.Model 4, the last to be tested, was the model adapted for the standardized PNI-TR and included factors 'Grandiose Fantasy' (GF) and 'Grandiose Self' (GS) under the grandiose narcissism, and the factors 'Recognition Expectations' (REX), 'Vulnerable Self' (VS), 'Approval Seeking'(AS) and 'Self Sacrificing'(SS) under the vulnerable narcissism dimension. The results, shown in Table 2, indicated the validity of the Model 4 fit indices. Accordingly, in the PNI-TR, the 'Grandiose Self' (GS) and the 'Grandiose Fantasy' (GF) (with negative loading) factors represent grandiose in narcissism dimension and the factors 'Recognition Expectations' (REX), Vulnerable Self' (VS), 'Approval Seeking'(AS) and 'Self Sacrificing' (SS) represent in vulnerable narcissism dimension. Analyses conducted by AMOS to test the second level model confirmed the validity of the two main dimensions covering the six factors.

At this stage, the correlations between the total score and the factors scores of the PNI-TR were investigated. All scores were converted to standard scores to compute the correlations. It was found that the correlation coefficients between the factors of the PNI-TR ranged between 0.12 and 0.53. Also, there was a significant positive relationship between the grandiose and vulnerable narcissism dimensions of the PNI-TR. (r=0.46; p < .01). The correlation coefficients between the total score of PNI-TR and the scores of each factor were found to be r=0.88 (p<.01) for 'Recognition Expectations' (REX); r=0.74 (p<.01) for 'Vulnerable Self' (VS); r=0.61 (p<.01) for 'Self Sacrificing'(SS) r=0.60 (p<.01) for 'Approval Seeking'(AS); r=0.41 (p< .01) for 'Grandiose Self' (GS) and r= 0.60 (p< .01) for 'Grandiose Fantasy' (GF)**.** The correlations coefficients factors are shown in Table 3.

Table 3. PNI. NPI and BORRTI Correlation Coefficients Between Total Scores and Factors

PNI- Recognition Expectations	-																		
PNI- Grandiose Self	.17**	-																	
PNI- Vulnerable Self	.53**	18**	-																
PNI- Approval Seeking	.49**	.12**	.36**	-															
PNI- Grandiose Fantasy	-.46**	.46**	-.36**	-.41**	-														
PNI- Self Sacrificing	.46**	.13**	.30**	.44**	-.46**	-													
PNI-Total	.88**	.41**	.74**	.61**	-.60**	.60**	-												
NPI Exhibitionism	-.25**	.25**	-.04	-.11*	-.32**	-.13**	-.27**	-											
NPI Superiority	-.12**	.31**	-.01	-.10*	-.24**	-.12**	-.20**	.45**	-										
NPI Authority	-.07	.39**	-.05	-.07	-.22**	.00	-.17**	.49**	.55**	-									
NPI Entitlement	-.34**	.15**	-.21**	-.13**	-.15**	-.04	-.32**	.32**	.44**	.43**	-								
NPI Exploitativeness	-.11*	.44**	.00	-.05	-.26**	-.07	-.22**	.69**	61**	.67**	.41**	-							
NPI Self-sufficiency	-.02	.28**	-.05	.01	-.09*	.01	-.09	20.**	.62*	.54**	.42**	.56**	-						
NPI- Total	-.20**	.43**	-.10*	-.06	-.36**	-.09*	-.37**	.79**	.74**	.72**	.53**	.84**	.59**	-					
BORRTI Alienation	.36**	-.10*	.44**	.11*	.10*	.06	-.35**	.06	-.02	.04	-.26**	.10*	.03	.00	-				
BORRTI (Insecure Attachment	.52**	-.03	.47**	.27**	.18**	.20**	.49**	-.05	-.00	-.00	-.27**	.02	.07	-.03	.48**	-			
BORRTI Egocentricity	.38**	.11*	.48**	.14**	.16**	.11*	.42**	-.03	-.08	-.05	-.25**	-.04	-.07	-.11*	.69**	.52**	-		
BORRTI Social Incompetence	.35**	-.06	.29**	.24**	.17**	.21**	.35**	.02	-.03	.05	-.16**	.05	.04	.00	.48**	.33**	.38**	-	
BORRTI-Total	.50**	-.03	.53**	.22**	.17**	.16**	.50**	.01	-.03	.01	-.31**	.05	.02	-.04	.91**	.70**	.85**	.65**	-
	REX	GS	VS	AS	GF	SS	PNIT	EXH	SUP	A	ER	EXP	SelfS	NPI	AL	IA	EGO	SI	BT

PNI= Pathological Narcissism Inventory. REX= Recognition Expectations; GS= Grandiose Self; VS= Vulnerable Self; AS= Approval Seeking; GF= Grandiose Fantasy and SS= Self Sacrificing. PNI T: Pathological Narcissism Inventory Total Score. IN: Number Of Items Included In Factors. M: Mean. SD: Standard Deviation. SE: Standard Error. TIC: Total Item Correlation. NPI: Narcissistic Personality Inventory. BORRTI: Bell Object Relations and Reality Testing Inventory **p< 0.01. *p< 0.05

Criterion Validity of the PNI-TR

Pearson correlation coefficients for total score the factors scores of the PNI-TR, the BORTTI and the NPI were calculated. Correlation confidents within the factors of the PNI-TR and the factors of the BORTTI and NPI were, respectively, within the range of r=0.03 -0.52 and r= 0.00 - 0.37. The significant correlations between the total score of the NPI and the grandiose narcissism and vulnerable narcissism of PNI were r= 0.45 (p< .01) and r= -0.23 (p<.01), respectively. Correlation coefficient between the total scores of PNI and BORTTI was r=0.50 (p< .01). Range of correlation coefficients between the factors of BORTTI and the factors of PNI-TR, were determined as follows: r= 0.35-0.52 (p< .01) for 'Recognition Expectations (REX)'; r= 0.29-0.53 (p<.01) for 'Vulnerable Self (VS)'; r=0.14- 0.27 (p<.01) for 'Approval Seeking'(AS), and r= 0.11- 0.21 (p<.01) for 'Self Sacrificing'(SS). All of them were positively correlated. On the other hand, Grandiose Self (GS) positively correlated with all factors of BORTT except the 'Self-centered' factor. Additionally, Grandiose Fantasy (GF) revealed negative correlation coefficients within the range of r= - 0.16- 0.17 (p<.01) with the factors of BORTTI. Correlation coefficients for the total and factors scores of the PNI-TR, NPI and BORTTI are presented in Table 3.

Reliability of PNI-TR

Cronbach's Alpha values of the PNI-TR factors: 'Recognition Expectations (REX)', 'Grandiose Self' (GS), 'Vulnerable Self '(VS), 'Approval Seeking'(AS), 'Grandiose Fantasy' (GF) and 'Self Sacrificing'(SS) were found to be, respectively, 0.92, 0.74, 0.85, 0.58, 0.82 and 0.74. Test-retest reliability for the total score was 0.92; and the values for the factors 'Recognition Expectations' (REX), 'Grandiose Self' (GS), 'Vulnerable Self' (VS), 'Approval Seeking'(AS), 'Grandiose Fantasy' (GF) and 'Self Sacrificing'(SS) were, 0.91, 0.88, 0.93, 0.81, 0.87 and 0.86, respectively.

Gender Effect on PNI-TR

There were no significant main effects of gender on the total score of the PNI-TR, *[F(1,516)* =0.65, p>.05] grandiose narcissism dimension *[F(1,516)* = 1.03, p>.05] and vulnerable narcissism dimension *[F(1,516)* = 0.98, p>.05]. However, factors a significant effect of gender was noted on the score of the 'Grandiose Self' (GS) scores *[F(1,516)* = 3.50, p<.05]. Male participants had higher 'Grandiose Self' (GS) scores (X:2.65, SD± 0.93) than female participants (X:2.51, SD± 0.78). A significant main effect of gender was found for 'Approval Seeking'(AS) factors *[F(1,516)* = 16,33, p<.01], such that the male participants had a significantly lower score (X:3.42, SD± 0.86) as compared to the female participants (X:3.72, SD± 0.78), indicating that females have a higher tendency to seek approval. Lastly, the gender found to have a significant main effect on 'Self Sacrificing'(SS) factors *[F(1,516)* = 5.38, p<.05]; such that the female participants had a significantly higher score (X: 2.70, SD± 1.11) as compared to the male participants (X:2.48, SD± 1.03).

DISCUSSION

Given the increasing interest in research on narcissism, there is a need for adapting the psychometric measurement tools used in literature to the Turkish language in order to enable faster research on the subject at an intercultural scientific level. The PNI is a psychometric tool with proven validity and reliability for evaluating narcissism at more than one level; and has been widely used in the recent studies (Pincus et al. 2009, Besser and Zeigler-Hill 2011, You et al. 2013, Jakšić et al. 2014, Fossati etal. 2015, Morf et al. 2017). In the present study, the PNI was adapted to the Turkish language, and its validity and reliability indicators were investigated. Also, the second model was tested and compared to the previously proposed models. Lastly, limitations of the study were evaluated.

After EFA on the PNR-TR, factor loading of 2nd and 13th items were found to be .30 which was attributed to low discriminatory power in evaluating narcissism. The 7th factor was composed of those two items and they also loaded on multiple factors. The factor load of 38th item was found to be as 0.39 by EFA and resulted as < .30 after the CFA factors. Hence, it was decided to evaluate PNI-TR over 49 items by excluding items 2,13 and 38; but to include these three items in computing the total PNI-TR score to enable comparisons of result with international studies. When naming the PNI-TR factors identified after EFA and CFA, contents of the items included in each factors were taken into account. The first factor, 'Recognition Expectations' (REX), of the PNI-TR was found to encompass items included in the factors Contingent Self-esteem (CSE) and Entitlement Rage (ER) of the original PNI developed by Pincus et al. (2009). While Contingent Self-esteem (CSE) expresses the self-perception under different conditions and is regarded as a characteristic of vulnerable narcissism, Entitlement Rage (ER) expresses the trait of getting offended when demands are not met, and is evaluated as a trait of grandiose narcissism. Here, the items with the highest factor loading under CSE and ER are, respectively, " *I find it hard to feel good about myself so long as I am not sure that others like me."* and " *I get mad when people do not realize that I am such a good person."* In the present study, these two items made the highest factor loading under the PNI-TR factor 'Recognition Expectations' (REX). When all items under 'Recognition Expectations' (REX) were evaluated together, the common theme appeared as the desire to be recognized by others and resentment if this expectation is not met. Most theorists and researchers

propose that self-perception in narcissism is somewhat fragile and this may be responsible for the aggressiveness and problematic interpersonal relationships of individuals with traits of narcissism (Morf and Rhodewalt 2001b, Kernis 2003, Zeigler et al. 2008). In our study, the items expressing the expectations and the clues on not being recognized and getting angry appear together under the first factor 'Recognition Expectations (REX)' of the PNI-TR, showing that these work together in the application of PNI-TR to our culture. According to Okada (2010) individuals with high scores on grandiose or vulnerable narcissism dimensions follow a different approach in expressing anger and aggression when their self-esteem is injured. It is theoretically explained that the individuals with grandiosity are more active and those with vulnerability are more passive in expressing through indirect ways their anger resulting from the anxiety of being rejected (McWilliams 1994, Okada 2010). In our study, the items expressing the traits of Contingent Self-esteem (CSE) and getting angry Entitlement Rage (ER) when expectations are not met are included under vulnerable narcissism. The items that come under the Exploitativeness (EXP) factors representing the manipulative interpersonal trait in the original version of the PNI, are included in the second factor of PNI-TR, namely Grandiose Self (GS) because these items comprise the expressions describing narcissism in the literature.

The third factor of PNI-TR is named Vulnerable Self (VS) and covers both the 4th Hiding the Self (HS) and the 6th Devaluing (DEV) factors of the original PNI. HS has been described as the expression of hiding one's self, and unwillingness to display one's mistakes and needs to others, while DEV refers especially to the sudden loss of self-esteem when facing life events resulting from interpersonal conflicts. The items with the highest factor load under Hiding the Self (HS) and Devaluing (DEV) are, respectively, "*I often do not reveal my needs to others for the reason that they might think of me as a dependent and needy person*." and "*I sometimes stay away from people for the reason that they might let me down".* Both of these items come under the third factor 'Vulnerable Self (VS)' of the PNI-TR. When evaluated together, the items under 'Vulnerable Self (VS)' cover the expressions related to vulnerable narcissism in the literature (Akhtar and Thomson 1982, Gabbard 1989, Rose 2002, Dickinson and Pincus 2003, Wink 1991, Miller et al. 2017). Coming together of these two dimensions under the same factor is explained by the lowering of self-esteem through the fear of appearing dependent and needy when others see manifestation of any personal needs or mistakes. The HS and DEV are placed under the main factor vulnerable narcissism both in the original version of PNI by Pincus et al. (2009) and in studies by others (Besser and Zeigler-Hill 2011, You et al. 2013, Jakšić et al. 2014, Fossati et al. 2015, Morf et al. 2017).

In the original version of the PNI, Self –Scarifying Self-Enhancement (SSSE) has been depicted to express self-sacrificing activities used by an individual to support an exaggerated self-image, and comes under the grandiose narcissism. The SSSE in the PNI-TR comes under vulnerable narcissism and is found to be included in the 4th factors Approval Seeking (AS) and the 6th factors Self Scarifying (SS). Under 'Approval Seeking'(AS), item' *' I like having friends who trust me because it makes me feel important about myself."*got the highest loading value,; indicating that elevation of the self is possible only if recognized by others. The highest factor loading under the factors 'Self Sacrificing'(SS) is made by the two items " *Sacrificing myself for others makes me a better person."* and *'I try to prove how much of a good person I am by making sacrifices."*. Both expressions point to the expectation of getting elevated in the eyes of others by way of self-scarifying. Although separated, both 'Approval Seeking'(AS) and 'Self Sacrificing'(SS) are covered by vulnerable narcissism. In the 2nd level modelling by Wright et al. (2010), it was found that original SSSE factor can be placed under vulnerable or grandiose narcissism in different models (Besser and Zeigler-Hill 2011, You et al. 2013, Jakšić et al. 2014, Fossati et al. 2015, Morf et al. 2017). Although in Turkish form SSSE is placed under vulnerable narcissism further research is needed.

The 5th factor of the PNI-TR, Grandiose Fantasies (GF), is placed under factors grandiose narcissism in the 2nd level modelling and reflects the tendency to extremes of imagination related to gaining admiration and recognition expressed in the 'Grandiose Fantasy' (GF) factors the original version of PNI.

In the current study in terms of Level 2 modeling, the compatibility of the 6-factor model that emerged as a result of exploratory factor analysis was also proved by confirmatory factor analysis. When analyzed on the basis of either the model by Pincus et al. (2009) or the two models proposed by Wright et al. (2010), the model fit indices were not at an acceptable level. The items appearing under the vulnerable narcissism by Pincus et al. (2009) were also covered under the same dimension of the PNI-TR. Those items under the factors SSSE and RE covered by the grandiose narcissism dimension in the original PNI, are covered by the vulnerable narcissism in the PNI-TR which supports the proposals that these items should be evaluated under vulnerable narcissism.

The relationship between the total factors scores and factor scores of PNI-TR and other psychometric tools have been investigated. As with the original version of PNI (Pincus et al. 2009) the correlations between total score of the PNI-TR and the total grandiose and vulnerable narcissism dimension indicate that an increase in the total score can be interpreted as pointing to the vulnerable narcissism.

The NPI has been used for of comparison in adaptation, validity and reliability studies of the grandiose dimension of PNI to different languages and cultures. These studies have revealed negative correlation between the PNI and the NPI (e.g., r = 0.13-0.27, Maxwell et al. 2011, Glover et al. 2012, Karakoula et al. 2013). In our study the negative correlation between the total scores of PNI and NPI had a relatively higher coefficient (r= -0.37, p< .01) than those reported in the literature. This suggest the possibility that PNI and NPI evaluate different structures. The Object Relations factors of BORTTI, namely alienation, insecure attachment, self-centeredness and social inadequacy were found to have a positive relationship with vulnerable narcissism and a negative or no relationship with the grandiose narcissism. On the basis of the correlations between PNI-TR and other psychometric tools, it can be concluded that the Turkish version of the PNI has the appropriate values for psychometric application.

Limitations and Proposals

In this study, after completing translation of the PNI to the Turkish language, its format was proven to be in agreement with the Turkish language and to have the required validity and reliability; and the models evaluating its factor structure and the vulnerable and grandiose dimensions were tested and thus shown to be a suitable tool for all psychometric applications. However, there are limitations of our study. Firstly, data were collected through self-report measures. Participants might have answered the questions in a socially acceptable way or might exaggerate positive characteristics. Since the present study intended to establish validity and reliability indicators we did not include an instrument controlling for social acceptability; but such an instrument can be included in future studies about narcissism so that the tendency for social acceptability can be controlled (Paulhus, 1998).

Another important limitation of our study is the sampling characteristics. It has been carried out with a university based non-clinical sample which requires caution in the generalization of results. This indicates the need for studies engaging samples with a wider range of age and inclusive of clinical assessments.

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