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# Is there an association between the level of grandiose narcissism severity of psychopathology?

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*Background:* Narcissism is a personality trait associated with both psychological health and resilience as well as with aggression and interpersonal problems. *Aim:* This study compares levels of total narcissism and subscale scores in inpatients, outpatients and a community sample. *Methods:* Inpatients (N = 186) were recruited from consecutively admitted patients to two closed units, and the outpatient group (N = 144) consisted of patients attending a psychiatric outpatient clinic. The patients and a normative community sample (N = 437) all filled in the Narcissistic Personality Inventory questionnaire (NPI-29). *Results:* The NPI total and subscales scores showed considerable gender differences. Among men only the Uniqueness/Entitlement subscale showed significant group differences, with inpatients showing higher mean score than the two other groups. Among women three factors, Leadership/Power, Superiority/Arrogance, and Uniqueness/Entitlement, showed significant differences between the different levels of psychopathology. The outpatient female group regularly had the lowest group mean scores. The NPI-29 scores of the normative group showed weak internal consistencies. *Conclusion:* Our hypothesis of a significant association between mean levels of total narcissism and subscale scores and severity of psychopathology was not supported.

• *Community sample, Inpatients, Narcissism, Outpatients, Psychopathology, Self-report.*

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Narcissism is a personality trait associated with both psychological health and resilience as well as with aggression and interpersonal problems (1). According to how narcissistic traits are perceived by others, the research literature has made a distinction between grandiose and vulnerable dimensions of narcissism. Grandiose narcissism is described by externalising traits such as arrogant attitudes, inflated self-esteem, self-admiration, entitlement, and exhibitionism. Vulnerable narcissism is reflected in internalizing traits such as interpersonal vulnerability, rejection sensitivity, self-protection, and shyness (2).

Empirical research on narcissism has mostly been done by self-rating instruments, measuring mostly the vulnerable (Hypersensitive Narcissism Scale) (2), the grandiose (Narcissistic Grandiosity Scale (3), Narcissistic Personality Inventory (4)), or both dimensions of narcissism (Pathological Narcissism Inventory (5), Five-Factor Narcissism Questionnaire (6), Narcissistic Admiration and Rivalry Questionnaire (7)).

The original version of the Narcissistic Personality Inventory (NPI) was developed by Raskin & Hall (4), had 40 items (NPI-40), and was derived from the description of the DSM-III Narcissistic Personality Disorder (NPD). However, it is well established that NPD emphasize the grandiose dimension of narcissism rather than the vulnerable one. In addition to grandiose narcissism, the NPI total score seem to capture an amalgam of socially positive elements such as a sense of psychological resilience and leadership abilities (8).

Cain et al. (9) also noted that the NPI contains a “confusing mix of adaptive and maladaptive content” (p. 643), and Ackermann et al. (1) reinforce that the NPI is a multi-dimensional instrument and that reliance on the NPI total score leads to an imprecise understanding of the concept of narcissism. Despite these limitations the NPI is still the most used instrument for measurement of grandiose narcissism. Lately Miller et al. demonstrated that among other instruments the NPI provided the strongest match to expert

ratings of grandiose narcissism (10) and DSM-5-based narcissistic personality disorder (11).

Several shorter versions of the NPI-40 have been introduced, and we have tested the NPI-29 developed by Swedish colleagues in a Norwegian translation (12, 13). In addition to a NPI-29 total score, four factor scores were identified: Leadership/Power (factor 1), Exhibition/Self-admiration (factor 2), Superiority/Arrogance (factor 3) and Uniqueness/Entitlement (factor 4).

The relationship between the NPI total score and traditional kinds of psychopathology has been exposed to limited empirical research. The NPI scores are negatively related to neuroticism, depression and anxiety, and positively related to well-being and positive affects (14, 15), psychopathy and the traits of disagreeableness, immodesty, greed, and insincerity. Disagreeableness is a potent personality trait which correlates with antisocial behaviour, aggression, risky sexual behaviour, and substance use. Cain et al. (9) stated: "Unfortunately there are currently no studies that compare clinical and normal populations on the NPI to support the view that it assesses subclinical narcissism. It remains unclear whether the empirical associations found for NPI scores would extend to a clinical population." Newer research (16) indicates that the NPI total score is a valid indicator of NPD only if one controls for patients' self-esteem.

### ***Aims***

Against this background our study related severity of psychopathology to both the NPI-29 total and factor scores. Inpatients, outpatients and individuals from the general population represented groups with three different severity levels of psychopathology. Our hypothesis was that a positive association would be observed between the three degrees of psychopathology and the mean levels of the NPI-29 total and the factor 2, 3 and 4 scores in these groups. As for the NPI-29, factor 1 (adaptive narcissism), we hypothesized a negative association with severity of psychopathology. Since the NPI-29 ratings show significant gender differences, the ratings on the tests of psychopathology were stratified on gender.

## **METHODS**

### ***Participants and procedure***

The inpatient group (N = 186) comprised of consecutively voluntary (47%) and involuntary (53%) admitted patients to the two closed units at the Department of Psychiatry, Aalesund Hospital, between 1 March 2005 and 15 October 2006. Exclusion criteria were dementia or organically based confusion, manic or hypomanic states, re-admittance during the sampling period, poor ability to speak Norwegian, or discharge within 48 h. Eligible patients were interviewed and completed the NPI-29 within three days after admission, except for a minority who were examined later within the first week due to the severity

of their mental state on admission. Further information about the sample and procedures is given elsewhere (17). The inpatient sample consisted of 41% women and 59% men, and their mean age was 40.2 (SD 5.9) years.

The outpatient group (N = 144) consisted of patients referred for assessment and eventual treatment at the Hamar Psychiatric Outpatient Clinic (POC) between 1 February 2009 and 15 May 2010. Exclusion criteria were age < 20 years, clinically assessed cognitive impairment, psychosis, depression with severe suicidality, severe somatic illness, or problems regarding Norwegian language. Referred patients with alcohol or drug dependence as main diagnoses were handled by another department of the POC. Further information is given elsewhere (18). The outpatient sample consisted of 61% women and 39% men, and their mean age was 37.8 (SD 11.7) years.

The population-based sample (NORMs) was recruited from the general population of Hedmark County (Norway) in May 2008. A random sample of 1500 young adults was mailed a questionnaire containing a set of mental health scales inviting them to complete and return them anonymously. With no reminder 29% (N = 437) participated, 62% of them were women and 38% men, and their mean age was 40.2 (SD 5.9) years. Further information on the sampling and procedures is given elsewhere (19).

### ***Ratings completed by all three samples***

Demographic measures were dichotomized: relationship status into paired and non-paired relationship, and basic level of education into  $\leq 12$  years of education (low level) and  $> 12$  years (high level). Work status was dichotomized as "in paid work" versus "not in paid work". Individuals employed full time, part time or being self-employed belonged to the former category, while others belonged to the latter.

The Narcissistic Personality Inventory (NPI-29) originally consisted of 40 dichotomous statements, among which one is considered to confirm an attitude of narcissism, and the other is not. Based on Emmons' (20, 21) presentation of a four-factor model of the NPI, Kansi (12) developed NPI-29 in Swedish. Svindseth et al. (13) reported satisfying psychometric properties of this four-factor model of the Norwegian translation. In addition to a total score (0–29), four factor scores can be calculated: Leadership/Power (factor 1), Exhibition/Self-admiration (factor 2), Superiority/Arrogance (factor 3) and Uniqueness/Entitlement (factor 4). Seven out of eight items comprising factor 1 (Leadership/Power) correspond to the adaptive factor "Leadership/Authority" in the structure model proposed by Ackerman (1), and factor 1 thus corresponds to the normal/adaptive narcissism in the NPI-29.

The NPI-29 was completed by all three samples, and the internal consistency of the total NPI-29 was Cronbach's coefficient alpha 0.84 among inpatients, 0.83 among outpatients, 0.60 among NORMs, and 0.74 for the total

sample. For the inpatients the alphas for subscales ranged from 0.56 to 0.73, for outpatients from 0.53 to 0.70, for NORMs from 0.26 to 0.48, and for the total sample from 0.45 to 0.58.

### ***Ratings performed in the patient samples only***

Diagnostic evaluations of inpatients were performed clinically by psychiatrists according to ICD-10 (22) at index hospitalization discharge. Only the main diagnosis was noted, and the diagnostic distribution was substance abuse/dependence 21%, schizophrenia 26%, mood disorders 29%, anxiety disorders 14%, and personality disorders 10%.

The outpatient sample was diagnosed with the MINI International Neuro-psychiatric Interview (MINI) for Axis I disorders (23) and the SCID-II interview for Axis II disorders. (24). One main diagnosis was noted with a distribution of personality disorders 50%, mood disorders 37%, and anxiety disorders 13%, when personality disorders pre-empted mood and anxiety disorders.

The Global Assessment of Functioning (GAF) is a commonly used rating scale for assessing patients' overall mental symptoms and their level of functioning (25). The GAF-Split version was used in this study, assessing symptom and function scores separately (26). The inpatient and outpatient samples were rated on the GAF by their therapists.

### ***Ratings completed by the outpatients and the NORMs***

No diagnostic examinations were performed on the NORMs, but we presume that this group had a lower proportion of mental disorders than observed in the inpatient and outpatient groups (see above). The Experiences in Close Relationships (ECR) has 36 statements describing the individual's typical feelings in close relationships. Eighteen items assess the avoidance and 18 the anxiety dimensions (27). The mean dimensional scores go from 1.0 to 7.0 with higher scores indicating more avoidance and anxiety. The reliability and validity data of the ECR in English have considerable support (28) which also was confirmed in the Norwegian version (19). The ECR was completed by the outpatient sample and the NORMs. The alphas for anxiety were 0.92 and 0.91 for outpatients and NORMs, respectively, and corresponding alphas for avoidance were 0.93 and 0.92.

The Iowa Personality Disorder Screen (IPDS) contains 11 items corresponding to diagnostic criteria for personality disorders which showed best discriminative ability (29). With a cut-off  $\geq 4$  the Norwegian version of IPDS has demonstrated satisfying sensitivity and specificity for screening of personality disorders in an outpatient setting (18). The alphas were 0.72 for the outpatient sample and 0.73 for NORMs.

Self-rated health was rated by the item "How is your current health?" with a four-point Likert-scale ("bad"/"not

so good"/"good"/"very good"), which was dichotomized into "good health" and "poor health" with two scale scores in each category.

Overall life satisfaction was rated by the item "Thinking about your life at the moment, would you say that you by and large are satisfied with life, or are you mostly dissatisfied?" The item had seven response categories (1 = very satisfied through 7 = very dissatisfied) which was dichotomized to "Satisfied" versus "Dissatisfied with life" by a cut-off between "Somewhat satisfied" and "A bit of both" (30, 31).

### ***Statistics***

The internal consistency of scales and subscale were evaluated with Cronbach's coefficient alpha. Differences on continuous variables were examined by t-tests and one way ANOVA, and categorical variables by chi-squared tests. In case of skewed distributions non-parametric tests were applied. Since relationship status, level of education, and work status differed significantly between the three groups, all comparisons on psychiatric measures between the groups were adjusted for these potentially confounding variables. In the same way adjustment for self-rated health and life satisfaction were added when the outpatient and the NORMs groups were compared. In contrast, comparisons between inpatients and outpatients were only adjusted for differences in relationship status. Adjustments were done using multivariate linear and logistic regression analyses.

All significance tests were two-tailed, and  $p < 0.05$  were reported as significant. The analyses were computed on PASW version 18.0 (Chicago, IL) for PCs.

### ***Ethics***

The study of inpatients was approved by the Committee for Medical and Health Research Ethics of the Central Region of Norway, while the outpatient study was approved by the Committee for Medical and Health Research Ethics of the South East Region of Norway. All patients gave written informed consent. Since the NORM sample responded anonymously, they did not have to give written informed consent according to Norwegian legislation.

## **Results**

### ***Demography of the groups***

Compared to the patient groups the NORMs were significantly older and more often held paid work (Table 1). The NORMs more often lived in paired relationships and more frequently had higher education than both patient groups, which also was the case for the outpatient compared to the inpatient group. The inpatient group consisted of significantly more men than the two other groups.

Table 1. Characteristics of the three samples.

Variables	Inpatients (I) N = 186	Outpatients (O) N = 144	NORMs (N) N = 437	p
Age, mean (SD)	37.3 (13.4)	37.8 (11.7)	40.2 (5.9)	< 0.001 N vs I, O
	N (%)	N (%)	N (%)	
Gender				< 0.001 I vs N, O
Male	110 (59)	56 (39)	165 (38)	
Female	76 (41)	89 (61)	272 (62)	
Relationship status				< 0.001 N vs I, O
Paired	50 (27)	62 (44)	326 (75)	0.002 I vs O
Non-paired	136 (73)	80 (56)	109 (25)	
Level of education				< 0.001 I vs N
> 12 years	28 (15)	35 (24)	157 (36)	0.008 N vs O
< 12 years	158 (85)	110 (76)	279 (64)	0.05 I vs O
Work status				< 0.001 N vs I, O
Paid work	50 (27)	35 (24)	335 (78)	
Not in paid work	136 (73)	109 (76)	95 (22)	
General health				< 0.001
Good health		34 (24)	338 (78)	
Poor health		110 (76)	95 (22)	
Life satisfaction				< 0.001
Satisfied		30 (21)	353 (81)	
Dissatisfied		113 (79)	84 (19)	
ICD 10 diagnoses				< 0.001
Substance abuse	40 (22)	0 (0)		< 0.001
Schizophrenia	48 (26)	0 (0)		< 0.001
Mood disorders	54 (29)	53 (37)		0.13
Anxiety disorders	26 (14)	19 (13)		0.87
Personality disorders*	18 (10)	72 (50)		< 0.001

\*Personality disorders pre-empt mood and anxiety disorders as main diagnosis.

### Comparison of the inpatient and outpatient groups

The diagnostic distribution differed significantly between the two groups with severe diagnoses of schizophrenia and substance abuse in 46% of the inpatients in contrast to none among the outpatients (Table 1). The mean GAF-F and GAF-S scores were significantly lower in the inpatients versus the outpatient group for both genders after adjustments (Table 2).

### Comparisons of the outpatient group and NORMs

A significantly higher proportion of the NORMs reported good self-rated health and satisfaction with life compared to the outpatient group (Table 1). Both women and men of the outpatient group reported a significantly higher mean score on the personality disorder screening (IPDS), and a significantly higher proportion of women of that group reported insecure attachment versus NORMs after adjustment, while no significant group difference was observed for men (Table 2).

### Findings on the NPI-29 total and subscale scores

The NPI-29 total and subscale scores showed considerable gender differences (Table 2). Among men only the Uniqueness/Entitlement subscale (factor 4) showed significant group differences with inpatients showing higher mean score than

the outpatient and NORMs groups with similar scores. In contrast, among women the Leadership/Power (factor 1), Superiority/Arrogance (factor 3), and Uniqueness/Entitlement (factor 4), showed significant differences between the levels of psychopathology, and so was closely the case for the Exhibitionism/Self-admiration (factor 2) and the NPI-29 total mean scores. The outpatient female group regularly had the lowest mean scores between the groups.

## Discussion

### Summary of main findings

Although examined and compared with different measures, we have considerable evidence for a gradient of psychopathology between the three groups with the highest levels of psychopathology among inpatients, the outpatients in between, and with lowest level of psychopathology among the NORMs. Our hypothesis of a positive association of the NPI-29 total and subscales scores with levels of psychopathology was not supported in either gender. The outpatient group had a lower mean score on all aspects of narcissism among women except for the Uniqueness/Entitlement subscale (factor 4) and for factors 1 and 3 this finding was highly significant. The inpatient group showed the significantly highest mean score on the Uniqueness/Entitlement subscale (factor 4) in both genders.

Table 2. Scores on narcissism and psychopathology between groups for women and men.

Variables	Women				Men			
	Inpatients (I) (N = 76)	Outpatients (O) (N = 89)	NORMs (N) (N = 272)	p	Inpatients (I) (N = 110)	Outpatients (O) (N = 56)	NORMs (N) (N = 165)	p
	Mean (SD)	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	Mean (SD)	
NPI-29 total	6.2 (4.7)	4.5 (3.8)	6.5 (3.0)	0.057* O vs N	8.5 (5.5)	6.7 (4.2)	7.5 (3.5)	0.23*
Leadership/Power (factor 1)	1.6 (1.5)	1.3 (1.6)	2.3 (1.6)	<0.001* O vs N	2.7 (2.0)	2.3 (1.8)	2.5 (1.6)	0.66*
Exhibitionism/ Self-admiration (factor 2)	1.2 (1.7)	0.9 (1.0)	1.7 (1.2)	0.08* O vs N	1.8 (1.8)	1.5 (1.4)	1.7 (1.2)	0.45*
Superiority/Arrogance (factor 3)	1.3 (1.2)	0.9 (1.0)	1.7 (1.2)	<0.001* O vs N	1.8 (1.6)	1.6 (1.4)	1.9 (1.4)	0.33*
Uniqueness/Entitlement (factor 4)	2.1 (1.9)	1.3 (1.3)	1.0 (0.9)	<0.001* I vs O, N	2.1 (1.7)	1.3 (1.2)	1.3 (1.2)	0.001* I vs O, N
Global functioning								
GAF-F	43.1 (10.8)	55.2 (8.6)		<0.001**	40.1 (10.6)	55.2 (6.8)		<0.001**
GAF-S	41.8 (10.7)	55.1 (7.0)		<0.001**	37.8 (10.6)	55.1 (8.5)		<0.001**
IPDS score		3.9 (2.4)	1.2 (1.8)	<0.001***		4.0 (2.7)	1.6 (2.0)	0.004***
		N (%)	N (%)			N (%)	N (%)	
ECR attachment				0.004***				0.23***
Secure		19 (22)	173 (64)			14 (25)	91 (55)	
Insecure		69 (78)	99 (36)			41 (75)	74 (45)	

\*Adjusted for age, relationship status, level of education and work status;

\*\*Adjusted for relationship status;

\*\*\*Adjusted for age, relationship status, level of education, work status, general health, and life satisfaction.

### Contribution of new knowledge

To our knowledge this is the first time that a NPI instrument has been investigated in samples with different severity levels of psychopathology and with an opportunity to stratify on gender and adjust for demographic variables.

A major surprise to us, which disturbed our hypothesis, was the low levels of mean NPI total and factor 1–3 scores in the female outpatient group compared to the two other groups. The female outpatient group diagnostically consisted of 51% personality disorders and half of them belonged to cluster C in DSM-IV (18). If we assume that cluster C personality disorders are more characterized by narcissistic vulnerability rather than narcissistic grandiosity, the low NPI-29 scores among the female outpatients might be explained. With such a presumption the NPI instrument's main focus on grandiose narcissism must be regarded as a limitation since vulnerable narcissism becomes undetected.

An alternative interpretation is that the female outpatient group has higher scores on neuroticism, depression and anxiety which have shown negative correlations and thereby lower scores on the NPI-29 total and factors 1–3.

We expected our NORM sample to represent normal levels of narcissism among young adults. After adjustment for confounders both the inpatient and outpatients groups' mean scores on NPI-29 total and Exhibitionism/Self-admiration (Factor 2) did not differ significantly from the NORM group in either gender. This similarity in narcissism scores between different

levels of psychopathology could be interpreted as support for the criticism of heterogeneity of the NPI scale raised by Cain et al. (9) and Ackerman et al. (1) as quoted in the introduction.

We expected the inpatients group to show the highest levels of narcissism due to the severity of their psychopathology. However, such was the case in both genders only on the Uniqueness/Entitlement subscale (factor 4), and this may be the only NPI-29 factor tapping the narcissistic grandiosity of the observed inpatients with psychosis or substance abuse, diagnoses not observed in the outpatient and the NORM groups.

On the Leadership/Power (factor 1), the Exhibitionism/Self-admiration (factor 2), and the Superiority/Arrogance (factor 3) subscales the inpatient group and the NORMs showed similar mean scores in both genders. So in the most ill group these types of narcissism hardly seem affected by the severity of the psychopathology compared to NORMs.

The pattern of results suggests that only the Uniqueness/Entitlement subscale assesses pathology. The other three subscales are not related to Uniqueness/Entitlement and generally they behave in a different manner, suggesting they assess adaptive efforts rather than pathology. This pattern of differences helps to understand our results.

### Relation to previous findings

Our findings support the criticism raised by Cain et al. (9) and Ackerman et al. (1) concerning the heterogeneity

of the NPI total score and the criticism for lack of items covering vulnerable narcissism raised by several authors.

### **Issues related to the Leadership/Power (factor 1)**

The viewpoint that the Leadership/Power (factor 1) subscale is not considered as part of grandiose narcissism but rather a resource has raised the question whether this factor is of clinical importance (1). Surprisingly we observed that the female outpatient group had a significantly lower mean score on factor 1, while the inpatients had a mean score similar to NORMs. We find it difficult to explain why the outpatients should show less of this resource factor than the inpatient group. However, by means of item response theory analyses Ackerman et al. (32) have demonstrated that among students, those with lower levels of “narcissism” were more likely to confirm items reflecting potential for Leadership/Power. The same association was observed among our outpatients. According to Table 2, the mean score of the Leadership/Power subscale represents approximately one third of the mean NPI-29 total score for all groups. This means that independent of the level of total narcissism, the factor 1 mean score represents a fixed proportion of the total score.

Due to its reflection of resources rather than pathology, a proposal of omission of factor 1 from the NPI has been raised (1). However, the NPI is widely used, and removing one factor may have a dramatic impact on the instrument and its properties. Given the widespread use of the NPI, researchers will probably be reluctant to take such a drastic step. Sedikides et al. (15) found positive correlations between the subscale of Leadership/Power (factor 1) and self-esteem, and a reduced propensity towards internalizing psychopathology on the other. These correlations together with our finding that the outpatient group had a significantly lower mean level of Superiority/Arrogance than the two other groups may indicate that patients attending POCs have internalizing problems of clinical significance.

### **Limitations of the study**

The findings of our study have to be considered in the light of some limitations. Lack of consistent diagnostic practice in the inpatient and outpatient groups as well as no diagnostic practice in the NORMs is a limitation, which cast some doubt on our three defined levels of psychopathology. However, to diagnose these three groups with the same procedure is a considerable challenge.

The context of hospitalization in a locked psychiatric unit might be perceived as a threat to patients' self-esteem, and in order to compensate patients may have exaggerated some of the items in the NPI-29 (33). The ability of very ill patients to complete questionnaires has been raised, but has mostly been refuted (17).

Psychopathology as defined by us could also be considered as so a wide concept that associations with the

narcissism measures become minimal, only showing for the inpatient group on the Uniqueness/Entitlement subscale (factor 4).

In spite of good psychometrics, any abridged version of the NPI like the Norwegian version of NPI-29 can be considered as a limitation due to lack of sufficient psychometric documentation. Low internal consistencies of the NPI-29 subscales among NORMs (alpha 0.26–0.48), but not among the inpatients and outpatients are noteworthy. A likely explanation is the greater heterogeneity of the NORM sample compared to the two samples of psychiatric patients in treatment.

### **Conclusions**

Our hypothesis of a significant association between narcissism as measured by the NPI-29 and the three groups of psychopathology was not supported. One of the reasons may be that “vulnerable narcissist” is not included in the various versions of the NPI scales, and another that neuroticism, depression and anxiety were most prominent in the outpatient group as these factors are negatively associated with narcissism.

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**Authors' contributions:** I.O. participated in the design, collected data and drafted the manuscript of the study. M.F.S. participated in the design, collected data, and gave input to the manuscript. A.A.D. participated in the design, performed statistical analyses and helped to draft the manuscript of the study. All authors have read and approved the final manuscript.

### **References**

1. Ackerman RA, Witt EA, Donnellan MB, Trzesniewski KH, Robins RW, Kashy DA. What does the Narcissistic Personality Inventory really measure? *Assessment* 2011; 18:67–87.
2. Hendin HM, Cheek JM. Assessing hypersensitive narcissism: A re-examination of Murray's Narcissism Scale. *J Res Pers* 1997;31:588–99.
3. Rosenthal SA, Hooley JM, Steshenko Y. Distinguishing grandiosity from self-esteem: Development of the Narcissistic Grandiosity Scale. Unpublished manuscript.
4. Raskin RN, Hall CS. A narcissistic personality inventory. *Psychol Rep* 1979;45:590.
5. Pincus AL, Ansell EB, Pimentel CA, Cain NM, Wright A, Levy KN. Initial construction and validation of the Pathological Narcissism Inventory. *Psychol Assess* 2009;21:365–79.
6. Glover N, Miller JD, Lynham DR, Crego C, Widiger TA. The Five-Factor Narcissism Inventory: A five-factor measure of narcissistic personality traits. *J Pers Assess* 2012;94: 500–12.
7. Back MD, Kufner ACP, Dufner M, Gerlach TM, Rauthmann JF, Denissen JJA. Narcissistic admiration and rivalry: Disentangling the bright and dark sides of narcissism. *J Pers Soc Psychol* 2013;105:1013–37.

8. Pincus AL, Lukowitzky MR. Pathological narcissism and narcissistic personality disorder. *Annu Rev Clin Psychol* 2010;6: 421–46.
9. Cain NM, Pincus AL, Ansell EB. Narcissism at the crossroads: phenotypic description of pathological narcissism across clinical theory, social/personality psychology, and psychiatric diagnoses. *Clin Psychol Rev* 2008;28:638–56.
10. Miller JD, McCain J, Lynam DR, Few LR, Gentile B, MacKillop J, Campbell WK. A comparison of the criterion validity of popular measures of narcissism and narcissistic personality disorder via the use of expert ratings. *Psychol Assess* 2014;26:958–69.
11. Miller JD, Lynam DR, Campbell WK. Measures of narcissism and their relations to DSM-5 pathological traits: A critical reappraisal. *Assessment* 2014. PMID: 24550548
12. Kansi J. The narcissistic personality inventory: applicability in a Swedish population sample. *Scand J of Psychol* 2003;44: 441–8.
13. Svindseth MF, Sørøbø O, Nøttestad JA, Roaldset JO, Wallin J, Dahl AA. Psychometric examination and normative data for the Narcissistic Personality Inventory 29 item version. *Scand J Psychol* 2009;50:151–9.
14. Miller JD, Dir A, Gentile B, Wilson L, Pryor LR, Campbell WK. Searching for a vulnerable dark triad: comparing factor 2 psychopathy, vulnerable narcissism, and borderline personality disorder. *J Pers* 2010;78:1529–64.
15. Sedikides C, Rudich EA, Gregg AP, Kumashiro M, Rusbult C. Are normal narcissists psychologically healthy? Self-esteem matters. *J Pers Soc Psychol* 2004;87:400–16.
16. Vater A, Schröder-Abé M, Ritter K, Renneberg B, Schulze L, Bosson JK, Roepke S. The Narcissistic Personality Inventory: a useful tool for assessing pathological narcissism? Evidence from patients with narcissistic personality disorder. *J Pers Assess* 2013;95:301–8.
17. Svindseth MF, Nøttestad JA, Wallin J, Roaldset JO, Dahl AA. Narcissism in patients admitted to psychiatric acute wards: its relation to violence, suicidality and other psychopathology. *BMC Psychiatry* 2008;8:13.
18. Olsson I, Sørøbø Ø, Dahl AA. A cross-sectional testing of the Iowa Personality Disorder Screen in a psychiatric outpatient setting. *BMC Psychiatry* 2011;11:105.
19. Olsson I, Sørøbø Ø, Dahl AA. The Norwegian version of the Experiences in Close Relationships measure of adult attachment: psychometric properties and normative data. *Nord J Psychiatry* 2010;64:340–9.
20. Emmons RA. Factor analysis and construct validity of the Narcissistic Personality Inventory. *J Pers Assess* 1984;48: 291–9.
21. Emmons RA. Narcissism: Theory and measurement. *J Pers Soc Psychol* 1987;52:11–17.
22. World Health Organization: The ICD-10 classification of mental and behavioural disorders. Clinical descriptions and diagnostic guidelines. Geneva: World Health Organization, 1992.
23. Sheehan D, Janvas J, Baker R, Lecrubier Y, Weiiler E, Hergueta P, et al: Mini International Psychiatric Interview (MINI) version 5.0.0. 2006. Norwegian version 2007.
24. First MB, Gibbon M, Spitzer RL, Williams JBW, Benjamin LS: Structured Clinical Interview for the DSM-IV Axis I Personality Disorders (SCID-II). American Psychiatric Press, 1997. Norwegian version 2004.
25. American Psychiatric Association: Diagnostic and statistical manual of mental disorders, 4th edition. American Psychiatric Press, Washington DC, 1994.
26. Pedersen G, Hagtvet KA, Karterud S: Generalizability studies of the Global Assessment of Functioning-Split version. *Compr Psychiatry* 2007;48:88–94.
27. Brennan K, Clark C, Shaver P. Self-report measurement of adult romantic attachment: An integrative overview. In: Simpson J, Rholes W, eds. Attachment theory and close relationships, pp. 46–76. New York: Guilford Press, 1998.
28. Fraley RC, Waller NG, Brennan KA. An item response theory analysis of self-report measures of adult attachment. *J Pers Soc Psychol* 2000;78:350–65.
29. Langbehn DR, Pfohl BM, Reynolds S, Clark LA, Battaglia M, Bellodi L, et al. The Iowa Personality Disorder Screen: development and preliminary validation of a brief screening interview. *J Pers Disord* 1999;13:75–89.
30. Helvik AS, Engedal K, Krokstad S, Selbæk G. A comparison of life satisfaction in elderly medical inpatients and the elderly in a population-based study: Nord-Trøndelag Health Study 3. *Scand J Public Health* 2011;39:337–44.
31. Cuypers K, Krokstad S, Holmen TL, Skjei Knudtsen M, Bygren LO, Holmen J. Patterns of receptive and creative cultural activities and their association with perceived health, anxiety, depression and satisfaction with life among adults: the HUNT study, Norway. *J Epidemiol Community Health* 2012;66:698–703.
32. Ackermann RA, Donnellan MB, Robins RW. An item response theory analysis of the Narcissistic Personality Inventory. *J Pers Assess* 2012;94:141–55.
33. Simon RI. Distinguishing trauma-associated narcissistic symptoms from post-traumatic stress disorder: A diagnostic challenge. *Harv Rev Psychiatry* 2002;10:28–36.

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