Narcissistic Personality Indicators as Predictors of Narcissistic Personality Disorder: A cross-cultural study

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Abstract: Background: Individuals affected by narcissistic personality disorder (NPD) are characterized by lack of empathy, grandiosity, low self-esteem, and a need for attention and special treatment that leads to unstable interpersonal relationships, occupational problems, and significant psychosocial distress. **Objectives:** The study aims to evaluate which Narcissistic Personality (NP) dimensions are the strongest and most significant predictors of NPD. **Methods:** The present study followed a cross-cultural research design aimed at determining the strongest and most significant predictors of NPD, therefore the shortened version of the Narcissistic Personality Indicators (NPI) questionnaire (NPI-40) developed by Raskin and Terry (1988) was administered online to those individuals interested to explore their personality type, in particular Narcissistic Personality. **Results:** The total sample population of the present study consisted of 11243 subjects, of which 6425 were males (57.1%) and 4766 (42.4%) were females; 12 (0.1%) respondents did not declare their gender while 40 (0.4%) identified themselves as others. Out of the total sample population, 647 (5,75%) were found to be having NPD. **Conclusions:** The present study has confirmed the utility of the NPI dimensions in predicting narcissistic personality disorder and has identified Exhibitionism as the strongest and most significant predictor of the NPD. The current findings contribute to the literature by adding more evidence to the concept of narcissism as a multi-dimensional construct. Multiple narcissism measures should be employed in future research to gain a better knowledge of the NPI dimensions as predictors of the NPD.

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العوامل الدالة على الشخصية النرجسية كمؤشرات تنبؤية بإضراب الشخصية النرجسية: دراسة عبر ثقافية

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مخطوطة مقبولة، قيد الطباعة

الملخص: الخلفية النظرية: يتميز الأفراد المصابون باضطراب الشخصية النرجسية بنقص التعاطف، والشعور بالعظمة، وتدني تقدير الذات، والحاجة إلى الحصول على الاهتمام والمعاملة الخاصة، مما يؤدي إلى اضطراب في علاقاتهم الشخصية، وحدوث مشكلات في العمل لديهم، والتعرض للكثير من الضغوط النفسية والاجتماعية. **الأهداف:** هدفت الدراسة الحالية إلى تقييم أي من أبعاد الشخصية النرجسية أكثر قوة وأهمية في التنبؤ باضطراب الشخصية النرجسية. **المنهجية:** اتبعت الدراسة الحالية تصميماً بحثياً عبر ثقافي وذلك لتحديد أهم العوامل التي تتنبأ باضطراب الشخصية النرجسية، لذا تم تطبيق النسخة المختصرة من استبيان مؤشرات الشخصية النرجسية بصورة إلكترونية على عينة مكونة من 11243 مستجيباً من خلفيات ثقافية متعددة، وقد مثل الذكور في العينة ما نسبته (57.1%)، في حين مثلت الإناث ما نسبته (42.4%). **النتائج:** أظهرت نتائج الدراسة الحالية أن ما نسبته (5.75 %) من أفراد عينة الدراسة يعانون من اضطراب الشخصية النرجسية، كما أظهرت النتائج القوة التنبؤية للعوامل الدالة على الشخصية النرجسية باضطراب الشخصية النرجسية. **الاستنتاجات:** أكدت الدراسة الحالية على أهمية استبيان مؤشرات الشخصية النرجسية في التنبؤ باضطراب الشخصية النرجسية، كما حددت سمة الاستعراضية كأقوى وأهم المؤشرات الدالة على اضطراب الشخصية النرجسية. يمكن أن تسهم نتائج الدراسة الحالية في تعزيز الأدب النظري والتطبيقي ذات الصلة باضطراب الشخصية النرجسية كهيكل متعدد الأبعاد، كما وتوصي الدراسة الحالية باستخدام العديد من الأدوات المقننة في الأبحاث المستقبلية لفحص العوامل ذات الصلة بالقدرة التنبؤية الدالة على الشخصية النرجسية.

الكلمات المفتاحية: قياس الشخصية، إضطراب الشخصية النرجسية، إضطرابات الشخصية، دراسة عبر ثقافية.

Introduction

Individuals affected by narcissistic personality disorder (NPD) are characterized by lack of empathy, grandiosity, low self-esteem, and a need for attention and special treatment that leads to unstable interpersonal relationships, occupational problems, and significant psychosocial distress (Caligor et al., 2015). The exact cause of NPD remains unknown; it could be multifactorial, including genetic basis, negative childhood experiences, hypersensitivity, and personal traits (e.g., aggressivity, intolerance to distress) (Zvelc, 2010). The prevalence of NPD ranges from 0 to 6.2% in the general population (American Psychiatric Association, 2013), and up to 17% in clinical settings (Ronningstam, 2009; Mitra & Fluyau, 2022). High prevalence of NPD has been found among Blacks of both sexes and Hispanic women (Stinson et al., 2008).

There are two main subtypes of pathological narcissism: a more aggressive, grandiose type, in line with the Diagnostic and Statistical Manual of Mental Disorders (DSM–5) classification, and an introverted, vulnerable, and high-functioning type (Gabbard, 2015). However, NPD has variable presentation, which renders the diagnosis more complex. It is also difficult to treat and it can complicate the treatment of comorbid conditions, given its frequent association with other affective and personality disorders (Mitra & Fluyau, 2022).

The diagnosis of NPD, as other personality disorders, is often based on psychiatric interviews. A semi-structured diagnostic interview focusing on interpersonal relationships is currently used (Hörz-Sagstetter et al., 2017). There are also supporting instruments, mostly used for research purposes, such as the Narcissistic Personality Inventory (NPI) (Vater et al., 2013). NPI was developed to capture non-clinical narcissism trait.

The underlying structure of the NPI items have been widely assessed in literature studies. For instance, Emmons (1984, 1987) proposed a four-factor solution: i) Exploitativeness/Entitlement, ii) Leadership/Authority, iii) Superiority/Arrogance, and iv) Self-Absorption/ Self-Admiration. Raskin and Terry (1988) found a seven-factor solution: i) Authority, ii) Self-Sufficiency, iii) Superiority, iv) Exhibitionism, v)

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Exploitative Ness, vi) Vanity, and vii) Entitlement. This is the current version composed of 40-items (Raskin & Terry, 1988). There is also a shorter version of the instrument, the NPI-16, which is one-dimensional (Ames, 2006). Furthermore, other researchers (Kubarych et al.,2004; Sabbah et al., 2024) proposed two-factor (Power and Exhibitionism) and three-factor (Power, Exhibitionism, and Specialness) solutions. Years later, two robust factors were identified by Corry et al. (2008), i.e., Leadership/Authority and Exhibitionism/Entitlement. The fact that multiple dimensions are incorporated into the NPI item pool renders the interpretation of the total scores based on this instrument more difficult. Indeed, the different dimensions of personality within the NPI may have differential impact on the criterion variables (e.g., aggression, hostility, self-enhancement, and self-esteem), which are the main focus of the research on narcissistic personality (Emmons, 1987).

In light of these considerations, this study aims to evaluate which NPI dimensions are the strongest and most significant predictors of NPD, and therefore, the following questions were generated: are NPI dimensions a key to predict narcissistic personality disorder? And which dimension is the most contributing factor to predict such a personality type?

METHODS AND PROCEDURES

Design

The present study followed a cross-cultural research design aimed at determining the strongest and most significant predictors of NPD, therefore the NPI-40 was administered online to those individuals interested to explore their personality type, in particular Narcissistic Personality.

Participants

The total sample population of the present study consisted of 11243 subjects, of which 6425 were males (57.1%) and 4766 (42.4%) were female participants; 12 (0.1%) respondents did not declare their gender while 40 (0.4%) identified themselves as others (table 1). Respondents belong to cross-borders/ cross-cultural world, as they were all from several different countries, including the U.S., Canada, Europe, Australia, South Africa, India, and Pakistan, among others. The age of the participants ranged from 13 to 86 years, with the mean age of 33.96 years (SD=13.79). The study data was obtained via an open access web resources (i.e., Open-Source Psychometrics.Org), from the year 2012 to date. The inclusion criteria were all individuals interested in narcissistic personality disorder, proficient in English language, who have concerns about their personalities when it comes to narcissism, and consented to participate in the research project.

Measures

The shortened version of the Narcissistic Personality Inventory (NPI-40), developed by Raskin and Terry (1988), was used in the present study. The NPI consists of 40 dyadic statements (for instance, "I am much like everybody else" vs. "I am an extraordinary person") intended to measure the construct of Narcissism, in which participants are required to select one of the items from the pair that best describes their feelings and beliefs. The Inventory yields a maximum total score of 40 and the higher score is indicative of higher level of Narcissism. The Principal Component Analysis revealed that there are seven sub-components on NPI, namely, Authority, Self-sufficiency, Superiority, Exhibitionism, Exploitative Ness, Vanity, and Entitlement. The original NPI consisting of 80 items (Raskin and Hall, 1979) has a satisfactory split half-reliability (α=0.80) and further analysis of its 40-item shortened version yielded composite alpha reliability scores of 0.83, 0.74, 0.80, and 0.90 respectively (Raskin & Terry, 1988). There is also a 54-item

version of the NPI and all of these versions are used as instruments to measure individual differences in Narcissistic traits in the general population. The 40-item NPI also has a high correlation (α=0.98) with the 54-item NPI, which makes it a suitable construct to measure Narcissism. In order to test the validity of the scale, the scale was distributed to (100) participants independent of the sample of the study (the validity sample). The scale indicated a high level of construct validity in assessing Narcissism, with the total score of the scale ranging between (.42 - .67). Also, the NBI indicated a high level of reliability in assessing Narcissism (α = .95).

Procedure

Participants were asked to report their gender, age, and country of origin. Compliance with ethical approval standards and consent to participate was taken in consideration, where all procedures performed in the present study were in accordance with the 1964 Helsinki Declaration and its later amendments. Participants were assured that their data is for scientific research purposes only, and none of it will be shared with any parties. Further, it was explained to the participants that collected data will be based on an open-source policy that assures and respects individual privacy to use and share data and related resources. Briefly, participants were informed that their responses are anonymous, and the collected data is for scientific research purposes only, and it was up to the participants to participate or not. All participants without any exception were asked to confirm that their answers are accurate and suitable for research upon completion.

Table (1): Distribution of the Sample According to Gender (N=11243).

Gender	No. of People	Percentage
Not mentioned	12	.1
Male	6425	57.1
Female	4766	42.4
Others	40	.4
Total	11243	100

Data Analysis

For the purposes of the present study, descriptive statistical means were utilized, in particular, calculations of frequencies, means, and percentages. Furthermore, inferential statistics means were considered, such as Multiple Linear Regression Analysis (MLRA). All calculations were carried out via SPSS 27.0 version.

RESULTS

Out of the total sample population, i.e., 11243, 647 (5,75%) were found to be having NPD. According to our Narcissistic Personality Questionnaire Guidelines only those whose total scores are 30 and above can be diagnosed as having Narcissistic Personality (Table 2; Figure 2).

Table (2): Descriptive Statistics for Narcissistic Subjects (N=647).

Scores of Subjects having NP*	Frequency	Percentages
30	104	16.1
31	83	12.8
32	82	12.7
33	66	10.2
34	90	13.9
35	43	6.6
36	47	7.3
37	47	7.3
38	36	5.6
39	32	4.9
40	17	2.6
Total	647	100

* NP: Narcissistic Personality.

Table 2 shows the number of subjects and their percentage in the Narcissistic Personality Group having the scores from 30 to 40. According to the Narcissistic Personality Questionnaire all respondents who scored 30 or more have a Narcissistic Personality. The maximum number of subjects who scored 30 was 104 (16.1%), while 17 (2.6%) respondents scored 40. Moreover, 83 (12.8%) participants scored 31 while 82 (12.7%) scored 32.
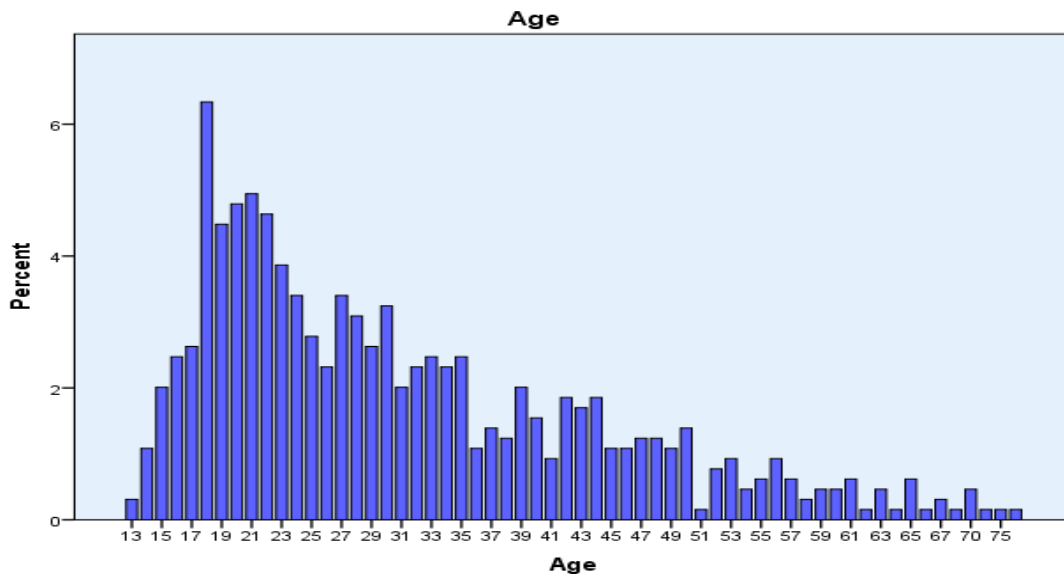

Figure (1): Graphical Representation of Narcissistic Personality Population based on Age (N=647).

Out of 647 total Narcissistic Personality Population (NPP), the majority 41(6.3%) were 18 years old. The highest number of cases of Narcissistic Personality was observed among youths aged 18-22 years (Figure 1).

Multiple Linear Regression Analysis (MLRA) – 7 Dimensions as a Predictor of NPD

The dimensions of the NPI- Authority, Self Sufficiency, Superiority, Exhibitionism, Exploitative Ness, Vanity and Entitlement- were tested through Multiple Linear Regression Analysis (MLRA), applying the stepwise method to identify which are the strongest and most significant predictors of the Narcissistic Personality.

Table (3): MLRA of the Most Predictive Dimensions of Narcissistic Personality.

Predictors	β	R	R²	Δ R²	F	Df	P
Dimensions of Narcissistic Personality							
(Model 1: $Y1 = a + \beta4X4 + \beta2X2 + \beta7X7 + \beta5X5 + \beta6X6 + \beta1X1 + \beta3X3$)							
X4	.465	.533	.284	.283	255.559	(1,645)	.000
X2	.378	.721	.519	.518	347.664	(1,644)	.000
X7	.343	.825	.680	.679	455.861	(1,643)	.000
X5	.275	.874	.764	.762	518.730	(1,642)	.000
X6	.351	.924	.853	.852	745.410	(1,641)	.000
X1	.299	.966	.933	.932	1478.450	(1,640)	.000
X3	.263	.952	.943	.925	769.580	(1,639)	.000

X4 = Exhibitionism, X2 = Self-Sufficiency, X7 = Entitlement, X5 = Exploitativeness, X6 = Vanity, X1 = Authority, X3 Superiority, Y1= Narcissistic Personality
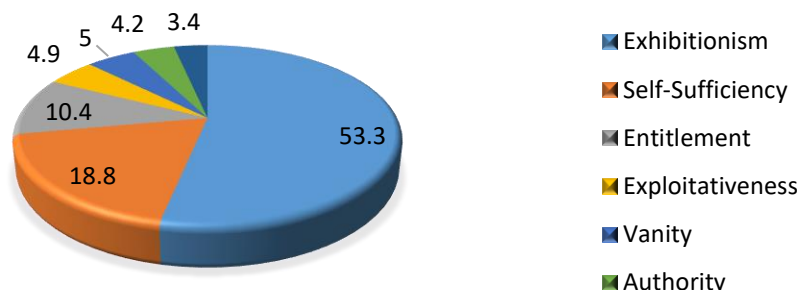

Figure (2): Graphical Representation of Dimensions predicting Narcissistic Personality According to the Narcissistic Personality Population (NPP).

The multiple linear regression analysis assessing the ability of NPI dimensions to predict NPD (Table 3) showed that the dimension with the most significant effect on narcissistic personality is Exhibitionism with R = .533, R² = .284 and ΔR² = .283. The F-value or value of ANOVA was 255.559 with df (1,645). Exhibitionism alone could explain 28.4% of narcissistic personality in an individual.

When Exhibitionism was combined with Self-Sufficiency, the second most significantly affecting variable, the values obtained were R = .721, R² = .519 and ΔR² = .518. The F-value was (1,644) = 347.664. The combined effect of the two dimensions on narcissistic personality was 51.9%.

When these dimensions (Exhibitionism and Self-Sufficiency) were combined with the third strongest predictor (Entitlement), the values obtained were R = .825, R² = .680, ΔR² = .679 and F-value was (1,643) = 455.861. Their combined effect on narcissistic personality increased to 68%.

Likewise, when the three dimensions (Exhibitionism, Self-Sufficiency, and Entitlement) were combined with the fourth (Exploitative Ness), fifth (Vanity) and sixth (Authority) strongest predictors, the combined effect on narcissistic personality raised to 76.4%, 85.3%, and 93.3%, respectively.

Finally, when the last strongest variable (Superiority) was combined with these six dimensions (Exhibitionism, Self-Sufficiency, Entitlement, Exploitative Ness, Vanity, and Authority), the combined effect on narcissistic personality increased to 100%. This means that an individual presenting all seven variables is 100% likely to have narcissistic personality. The effect of all dimensions as predictors of narcissistic personality was significant (p < .001).

The β-value indicates which variables have higher effect on the criterion variable Total Score Narcissistic Personality, (i.e., which are the strongest predictors of the criterion variable). Exhibitionism has the highest effect on narcissistic personality, followed by Self-Sufficiency, Entitlement, Exploitative Ness, Vanity, Authority, and Superiority. In other words, the best and the strongest predictor of narcissistic personality is Exhibitionism with β-value of .465. The predictive dimensions of narcissistic personality according to the NPP in the present study are depicted in figure 2 above; where the figure confirms the dimensions predicting narcissistic personality

DISCUSSION

The present study aimed at evaluating if NPI dimensions a key to predict narcissistic personality and at identifying which NPI dimensions are the strongest and most significant predictors of NPD through the application of the Narcissistic Personality Questionnaire on a sample of over 11,000 individuals. The prevalence of individuals with a Narcissistic Personality, who scored 30 or more on the questionnaire, was 5.75%. These individuals were prevalently male and young adults aged 18-22 years. These findings are consistent with previous studies reporting a prevalence of 5.3% (Bodlund et al., 1993) and 6.2% (Stinson et al., 2008) in the general population. Contrarily, a systematic review found a pooled prevalence of 0.26%, and compared it to the study by Stinson et al., (2008) reporting a value of over 6%.The differences observed were attributed to the methodology, sample selection, and geographic areas of the studies (Dhawan et al., 2010).The findings of our study are also in accordance with literature studies reporting higher prevalence in males and younger adults in non-clinical settings (Stinson et al., 2008; Torgersen et al., 2001), as well as among psychiatric inpatients (Stevenson et al., 2011, Mahamid, 2026).Early childhood experiences (e.g., maltreatment, overprotection, and overvaluation) have been associated to the development of narcissism that can persist into adulthood (Horton 2011; Millon 2011; Watson et al., 1992).Therefore, it is important to study pathological narcissism and its underlying causes in young people.

According to current findings, Exhibitionism is the strongest predictor of Narcissistic Personality. Previous research has demonstrated that the narcissism dimensions have differential relationships with psychological outcomes, such as psychological distress, self-esteem, and personality. Indeed, Exhibitionism, Authority, and Superiority have been correlated with higher self-esteem but not with psychological distress (Clarke et al., 2015). Exhibitionism dimension has also been associated with academic dishonesty, lower levels of guilt (Brunell et al., 2011), and a high level of aggression (Reidy et al., 2008). According to prior research on the association between narcissism and delinquency (Judge et al., 2006; Blickle et al., 2006), especially among young people (Barry et al., 2007; Lau et al., 2011), the findings revealed that Exhibitionism alone accounts for 28% of narcissistic personality in an individual. The combined effect of all seven dimensions (Exhibitionism, Self-Sufficiency, Entitlement, Exploitativeness, Vanity, Authority, and Superiority) is required to have a narcissistic personality. This confirms that narcissism represents a combination of adaptive (e.g., Authority, Self-Sufficiency, Superiority) and maladaptive (e.g., Entitlement, Exploitativeness) dimensions. Maladaptive narcissism is characterised by grandiosity used to compensate for low self-esteem, while adaptive narcissism is characterised by a sense of superiority and tendency for leadership roles (Clarke et al., 2015). Further research in this area is necessary to explore the contribution of each dimension to the narcissistic personality trait. Strengths of the study include a large and multi-cultural sample, prospective design and the use of a structured and validated tool for the interviews.

Limitations

Our study presents some limitations that may offer opportunities for future research. The results are limited to specific sociodemographic factors. The online recruitment of the sample could have limited the access to the research of the most unwell groups. In addition, this study was done using a quantitative methodology and solely relied on questionnaires and self-reports completed by the participants. It must be remembered that self-reported data may reflect no more than a tendency. It is therefore recommended to use mixed methods tools in future studies.

CONCLUSION

In conclusion, the present study has confirmed the utility of the NPI dimensions in predicting narcissistic personality disorder and has identified Exhibitionism as the strongest and most significant predictor of the NPD. The current findings contribute to the literature by adding more evidence to the concept of narcissism as a multi-dimensional construct. Multiple narcissism measures should be employed in future research to gain a better knowledge of the NPI dimensions as predictors of the NPD.

Disclosure Statements

- **Ethical approval and consent to participate:** All procedures performed in this study involving human participants were in accordance with the ethical standards of An-Najah National University ethical approval committee, the American Psychological Association (APA, 2010) and with the 2013 Helsinki Declaration. Informed consent was obtained from all participants

- **Availability of data and materials:** The data and related materials used in the current study is available from the corresponding author on reasonable request. The data that support the findings of this study are also available from Open Psychometrics without any restrictions that may apply

to the availability of these data, unless any emerged modifications or changes (see: https://openpsychometrics.org/_rawdata/).

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