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The Norwegian version of the five factor narcissism inventory for vulnerable narcissism and the grandiose narcissism subscale of indifference: Psychometric properties of the long- and short-form versions

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In recent years, narcissism has been reconceptualized as a multi-dimensional feature of human psychology. The Five Factor Narcissism Inventory (FFNI) has been proposed as a measure for two distinguishable dimensions of narcissism: Vulnerable and Grandiose (Glover, Miller, Lynam, Crego & Widiger, 2012). To investigate the role that some of these factors may have in moderating responses to cues of social exclusion, implemented in a connected laboratory experiment, we translated the subscales for Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference from English into Norwegian and included them in an online survey that was used to recruit and pre-screen participants for the laboratory experiment. In this paper, we test the psychometric properties of these translated self-report measures, in what amounted to be a diverse sample of the Norwegian population. We perform reliability tests and confirmatory factor analysis on the long- and short-form versions of FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference. We further test the criterion validity of these measures by way of correlational analyses with other theoretically relevant measures. We conclude that the Norwegian short-form versions of FFNI Vulnerable Narcissism and Grandiose Narcissism subscale of Indifference exhibit good psychometric properties in our data and propose that the translated scales can now be used to explore these constructs in clinical and non-clinical populations in Norway, and can be easily adapted for use in other Scandinavian countries.

Key words: Five-factor narcissism inventory, vulnerable narcissism, Norwegian, psychometric tests, self-report measures.

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INTRODUCTION

The Five Factor Narcissism Inventory (FFNI; 1) was developed to measure two proposed and distinct features of narcissistic personality disorder (NPD), Vulnerable and Grandiose Narcissism. FFNI is based on the five-factor model (FFM) of personality traits which posits that personality disorders invariably arise as a result of maladaptive variation in the personality traits proposed by the FFM (Glover, Miller, Lynam, Crego & Widiger, 2012), such that Vulnerable Narcissism can be indicated by high Neuroticism and low Agreeableness, while Grandiose Narcissism can be understood as a consequence of low Agreeableness and high Extraversion (Miller, Lynam, Vize *et al.*, 2018). Prior to the development of the FFNI, many tools for assessing NPD focused on measuring tendencies associated with Grandiose Narcissism only. In particular, the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) has been widely used to assess narcissistic personality traits but falls short of capturing the maladaptive facets of NPD and non-clinical narcissism relating to feelings of shame and insecurity (Glover *et al.*, 2012). Therefore, aside from the Pathological Narcissism Inventory (PNI; Pincus, Ansell, Pimentel, Cain, Wright & Levy, 2009), FFNI is the only measure developed to date that allows adequate assessment of the distinct traits associated with narcissistic vulnerability and narcissistic grandiosity. The FFNI differs from the PNI in terms of its empirical basis and was developed with a focus on how personality disorders may be derived from the FFM in general.

However, both inventories allow for the measurement of these distinct dimensions (Miller, Gentile & Campbell, 2013).

Since its development, the FFNI has been shown to have good convergent, discriminant, and incremental validity for assessing narcissistic personality traits in both clinical and non-clinical samples of the population (Miller, Gentile & Campbell, 2013; Miller, Few, Wilson *et al.* 2013). The factor structure of the FFNI has successfully demonstrated the heterogenous nature of NPD and non-clinical narcissism by providing evidence for two distinct subdimensions, Vulnerable and Grandiose Narcissism, that are each composed of multiple factors. FFNI Vulnerable Narcissism is made up of four factors: Shame (in response to criticism), Need for Admiration (insecurity with respect to a desired or perceived greatness), Reactive Anger (in response to perceived criticism), and Distrust (concerning the motives, intentions, and reliability of others). FFNI Grandiose Narcissism, on the other hand, is comprised of eleven factors; Acclaim Seeking, Arrogance, Authoritativeness, Entitlement, Exhibitionism, Exploitativeness, Grandiose Fantasies, Lack of Empathy, Manipulativeness, Thrill Seeking and Indifference (in response to perceived criticism). Given the great number of items needed to measure all of these factors, the FFNI has been associated with greater benefits in terms of a being a more nuanced tool to assess narcissistic tendencies, but also greater costs in terms of the time needed for respondents to answer all 148 items (Miller, Gentile *et al.*, 2013). Because assessment time is often limited, Sherman, Miller, Few

et al. (2015) developed a short-form version of the FFNI, resulting in a 60-item self-report measure. They found that the factor structure of the short-form version was identical to that of the long-form version and performed equally good on psychometric tests of reliability and validity (Sherman *et al.*, 2015).

Aims

The aim of this paper is to investigate the psychometric properties of a Norwegian translation of the long- and short-form versions of FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference (Glover *et al.*, 2012). These self-report measures were translated into Norwegian and included in an online survey used to recruit participants for a laboratory experiment measuring affective and cognitive responses to different forms of social exclusion. FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference were intended for analyses in empirical models relating to findings from the laboratory experiment. They thus featured in an online pre-screen survey used to recruit participants for the experiment, alongside other control variables included for the same purpose. These included a previously validated Norwegian translation of the Experiences in Close Relationship short-form scale (ECR-N; Olsson, Sørrebø & Dahl, 2010), and Norwegian translations of the Interpersonal Reactivity Index (IRI; Davis, 1980; Keaton, 2017), the Introspectiveness scale (Hansell & Mechanic, 1985), the Everyday Discrimination scale (EDS; Williams, Yu, Jackson & Anderson, 1997), the UCLA Loneliness Scale-3 (Hughes, Waite, Hawkey & Cacioppo, 2004), a newly developed measure of Experiences of Rejection, a 1-item measure of meaningfulness and purpose in life, and several other that were of thematic relevance for the laboratory study only.

Here, we test the reliability and factor structure of the Norwegian translation of the long- and short-form versions of FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference. In addition, we test criterion validity of these constructs by conducting correlational analyses between FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference; and the theoretically related variables listed in the previous paragraph. First, in line with previous work by Miller, Gentile *et al.* (2013), we predicted that FFNI Vulnerable Narcissism would be most positively correlated with scores on anxious attachment and also positively correlated with avoidant attachment but to a lesser extent (ECR-N), and that the FFNI Grandiose Narcissism subscale of Indifference would thus be negatively correlated with these attachment styles. Likewise, given previously established connections between the FFM personality traits of Neuroticism and Extraversion and psycho-social outcomes relating to perceived social isolation and loneliness (Flett, Goldstein, Pechenkov, Nepon & Wekerle, 2016; Kong, Wei, Li *et al.*, 2015), we expected that FFNI Vulnerable Narcissism would be positively correlated with the UCLA Loneliness Scale-3, EDS, Experiences of Rejection and meaningfulness and purpose in life and that Indifference would be negatively correlated with these variables. Finally, conceptually we believed that the FFNI Grandiose subscale of Indifference would be negatively correlated with the IRI subscales relating to personal distress.

Following from the promising results of our analyses, we make the Norwegian translation of these FFNI scales available to researchers in Scandinavia who can now begin to explore the usefulness of these measures in their research.

METHODS

Recruitment

Participants were primarily recruited using Facebook/Instagram advertising ($n = 159$, 74.3%). The target audience of the advertisement was individuals aged between 18 and 40 years old and resident in Oslo, Norway. Participants were also recruited within the student population of the University of Oslo through an online Research Pool using Sona Systems© (Sona, 2018), that offers course credit in exchange for participation in research projects ($n = 55$, 25.7%).

Participants were invited to fill out an online survey (created using Qualtrics, 2018, survey software; 14) with a view to participating in a laboratory study on social life using virtual reality technology. A 200 NOK (~\$25) universal gift card was offered as a reward for participation in the laboratory study.

Sample demographics

The final sample included 214 adults (66.3% female; mean age 26.8 years; SD 6.2). Just under half the sample were students ($n = 104$, 49.2%), while 61 (28.9%) were full-time workers and 32 (15.1%) were part-time workers. The remaining 7.9% of participants were unemployed or did not answer. The sample was highly educated with 47.1% of participants having achieved a bachelor's degree or higher. Eighty-nine participants were single (41.9%), and the rest were in a relationship or married (58.1%). Nineteen participants had children (8.9%).

Materials and procedure

All self-report measures used in the online survey were forward-back translated from English into Norwegian by a team of bilingual researchers at the University of Oslo. Responses for most of the self-report measures were collected on Visual Analog Scales (VAS) with five or more Likert-scale labels at equal intervals along the scales, with the exception of Everyday Discrimination Scale (EDS) and Experiences of Rejection which were plotted using Likert scale matrices.

Five Factor Narcissism Inventory (FFNI). The long-form version of the FFNI consists of 148 self-report items (Glover *et al.*, 2012). In the current study, we included the long-form version for FFNI Vulnerable Narcissism, consisting of 38 items encompassing the four subscales of Reactive Anger (10 items); Shame (9 items); Need for Admiration (10 items); and Distrust/Cynicism (9 items). The short-form version of FFNI Vulnerable Narcissism follows the same format but with fewer items; 16 overall with four items per subscale. We also included the Grandiose Narcissism subscale of Indifference. It consists of 10 items, four of which make up the short-form version of the scale. This subscale represents the aspect of Grandiose Narcissism that

is theoretically furthest removed from Vulnerable Narcissism, and thus aids the investigation of discriminant validity. The order of items was not randomized but followed the pattern of one item from each of the four Vulnerable Narcissism subscales in a row, followed by the Indifference items which were presented together after the Vulnerable Narcissism items.

Experiences in Close Relationships (ECR). ECR is a measure of anxious and avoidant attachment styles (Brennan, Clark & Shaver, 1998). A previously validated Norwegian translation was used. ECR-N is a short-form 12-item measure that was shown to have satisfactory psychometric properties (Olsson *et al.*, 2010).

Introspectiveness. This scale is an 11-item measure of the extent to which one thinks about and processes one's inner feelings and thoughts (Hansell & Mechanic, 1985). It was included in the survey as a control variable for a measure that was thematically related to the laboratory experiment.

Interpersonal Reactivity Index (IRI). IRI is a 28-item scale with four subscales; Empathic Concern, Personal Distress, Perspective Taking and Fantasy. IRI was developed to capture individual differences in cognitive and emotional reactions to different interpersonal events and stimuli (Davis, 1980; Keaton, 2017). The dimensions of Perspective Taking and Fantasy were included as control variables for the effectiveness of the experimental manipulation in the connected laboratory study.

The Everyday Discrimination Scale (EDS). A 9-item measure of subjective experiences of discrimination (Williams *et al.*, 1997). EDS was included as a moderator for empirical models relating to the effect of social exclusion on affect and cognition from the connected experimental study.

Experiences of Rejection. This 6-item measure was developed to quantify how frequently individuals experience common forms of rejection and exclusion. It is a count variable scored on a five-point Likert scale from 0 (*never*) to 4 (*always*). The items are summed together to give an overall count of experiences. Items include: *I am excluded from conversations in groups; I am not invited to social events by people I know; At social events, people I know choose to sit with others instead of with me; I get blanked on the street by people I know; People ignore my calls/messages; I am left out of group activities.* Similarly, it was included as a control variable for the experimental study.

UCLA Loneliness Scale-3. A short-form of the standard measure of loneliness derived from the R-UCLA loneliness scale. This scale was shortened for inclusion in large-scale social surveys and consists of three questions to measure experiences of loneliness in a broad and general way (Hughes *et al.*, 2004). It features in the survey for inclusion in empirical models relating to the laboratory experiment.

Meaningfulness and purpose of life. A single item self-report measure was developed to capture the meaningfulness and purpose an individual feels they have in their life; *Do you feel that your life is meaningful and has a purpose?* It was measured on a 20-point visual analogue scale with labels ranging from -10 (*definitely not*) to 10 (*definitely yes*). It was included as part of a

repeated measures design and presented again during the laboratory study to assess any possible effects that the experience of social exclusion may have on this variable.

Analysis

All analyses were completed in STATA SE-15.1 (Stata, 2018). Internal consistency of the subscales was tested using Cronbach's alpha (Cronbach, 1951). In our confirmatory factor analysis, we explore the factor structure in both long- and short-form versions of the subscales. Chi-square (χ^2) values for model fit are not reported due to the small sample size which inhibits meaningful evaluation of the model fit using this index (Iacobucci, 2010). We thus tested the goodness-of-fit using Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) values and (Standardized) Root Mean Square Residual ((S)RMR) indices.

Criterion validity was assessed with respect to theoretically related variables, as outlined in the Introduction. We thus tested the relationships between FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference with the scales for Introspectiveness, IRI, EDS, ECR-N, Experiences of Rejection, UCLA loneliness and the 1-item measure of meaningfulness and purpose of life.

RESULTS

Psychometric properties of the long-form version of FFNI Vulnerable Narcissism and FFNI Grandiose subscale of indifference

All four FFNI subscales for Vulnerable Narcissism had significant positive correlations with each other. The subscale of Indifference had significant negative correlations with all subscales of Vulnerable Narcissism except Reactive Anger, for which there was a non-significant negative correlation (Table 1).

Items within each subscale had significant low to moderate correlations with each other, but some items did not correlate significantly. The first item of the Reactive Anger scale was most problematic: *If I feel slighted, I give the person who slighted me a piece of my mind* (ffni_1). It correlated significantly with just one other item on the Reactive Anger subscale.

Cronbach's alpha for Reactive Anger was 0.74. Given that this is lower than the desired alpha value of 0.8, we investigated and found that removing item ffni_1 from the measure would increase

Table 1. Correlations between subscales of the FFNI Long-form version

Subscales	Reactive Anger	Shame	Need for Admiration	Distrust	Indifference
Reactive Anger	1.0000				
Shame	0.2001*	1.0000			
Need for Admiration	0.3140*	0.5623*	1.0000		
Distrust	0.4019*	0.3688*	0.4867*	1.0000	
Indifference	-0.0854	-0.7272*	-0.6368*	-0.2511*	1.0000

Note: *Significant at the $p < 0.01$ level.

the alpha value to 0.76. The translated item read: *Hvis jeg føler meg fornærmet, så gir jeg personen som fornærmet meg klar tilbakemelding*. Evaluating this item qualitatively, we note a problem in its grammatical syntax which may have led respondents to have difficulty interpreting it. We thus removed item *ffni_1* from further analyses.

Cronbach's alpha for the subscales of Shame, Need for Admiration, Distrust and Indifference were 0.84, 0.80, 0.80 and 0.88, respectively. These values suggest good reliability for the translated measures. Cronbach's alpha for Vulnerable Narcissism was 0.89.

Psychometric properties of the short-form version of FFNI Vulnerable Narcissism and FFNI Grandiose subscale of indifference

The subscales of the short-form for FFNI Vulnerable Narcissism all correlated positively and significantly as expected, with values ranging from 0.18 to 0.58 (Table 2). The Grandiose Narcissism subscale of Indifference had negative correlations with the subscales of Shame, Need for Admiration and Distrust but was not significantly correlated with Reactive Anger. Items within each subscale correlated positively and significantly with each other except for a pair of items on the Need for Admiration subscale; *I often feel as if I need compliments from others in order to be sure of myself* (*ffni_3*) and *I feel very insecure about whether I will achieve much in life* (*ffni_26*) ($r = 0.12, p = 0.08$).

Three of the four subscales of the short-form version of FFNI Vulnerable Narcissism had respectable alpha levels: Reactive Anger ($\alpha = 0.71$), Shame ($\alpha = 0.71$), and Distrust ($\alpha = 0.74$). The exception was Need for Admiration, which only had a minimally acceptable alpha level ($\alpha = 0.69$) (DeVellis, 1991). The alpha value of the short-form version of FFNI Vulnerable Narcissism overall had an acceptable alpha level of 0.83. The Grandiose Narcissism subscale of Indifference also had a satisfactory alpha, at 0.83.

Confirmatory factor analysis - FFNI Vulnerable Narcissism

We conducted a confirmatory factor analysis (CFA) to assess whether the factor structure of FFNI Vulnerable Narcissism, as proposed by Glover *et al.* (2012), fit our data using the translated scales. We first looked at the long-form version of the subscales each consisting of 9–10 items (Glover *et al.*, 2012). We then analysed the short-form version of FFNI Vulnerable Narcissism as proposed by Sherman *et al.* (2015).

Table 2. Correlations between subscales of the FFNI Short-form version

Subscales	Reactive anger	Shame	Need for Admiration	Distrust	Indifference
Reactive anger	1.0000				
Shame	0.1812*	1.0000			
Need for admiration	0.2376*	0.5873*	1.0000		
Distrust	0.2861*	0.4086*	0.4919*	1.0000	
Indifference	0.0233	-0.5871*	-0.5266*	-0.2149*	1.0000

Notes: *Significant at the $p < 0.01$ level.

The data was checked for multivariate normal distribution. Mardia's test for skewness and kurtosis was applied. The results did not permit a rejection of the null hypothesis, indicating that skewness and/or kurtosis was present at the level of the indicators ($p < 0.05$) on the long and short versions of FFNI Vulnerable Narcissism. As such, we used the Satorra–Bentler estimator in our maximum likelihood estimation, which is robust to non-normality across standard errors, p -values, and confidence intervals, as well as goodness of fit indices ("Satorra–Bentler adjustments | Stata", n.d.; see also Li, 2016).

Model 1. In our first model, we specified a four-factor structure for the long-form version of FFNI Vulnerable Narcissism (Glover *et al.*, 2012). The four factors correspond to the four subscales of Vulnerable Narcissism. As per Glover *et al.* (2012), the model allows for these factors to be correlated with each other. Assessment of model fit produced an RMSEA of 0.074, a CFI of 0.708 and an (S)RMR of 0.088. Good model fit implies that the RMSEA should be below 0.08, while CFI values should preferably be greater than or equal to 0.9 and (S)RMR should be less than 0.08 (Hooper, Coughlan & Mullen, 2008). While the RMSEA index indicated an acceptable fit for model one, the CFI and (S)RMR values for the model were unacceptable according to these standards.

Model 2. Looking at the modification indices using MLE for model one, we found that some items' error terms were highly correlated. In particular the items *I feel very insecure about whether I will achieve much in life* (*ffni_26*) and *I doubt I will ever succeed in life* (*ffni_30*), and the items *I often feel as if I need compliments from others in order to be sure of myself* (*ffni_3*) and *I need positive attention from others to make me feel stronger* (*ffni_7*). The modification indices for these two pairs of items were at 138.94 and 60.88, respectively. Items *ffni_26* and *ffni_30* from the Need for Admiration scale also seem to tap feelings about success in life, which we evaluate as being less related to the other items on this subscale. Likewise, items *ffni_3* and *ffni_7* stand apart from the other items on the scale, while their meaning is closer to that which we believe to be related to the need for admiration. Another problematic item on the Need for Admiration subscale was: *It is important to me that others look up to me* (*ffni_38*), which generated high modification indices with other items, in particular *ffni_22* (> 30). In addition, it had a lower factor loading on this subscale (0.38), and correlated poorly with other items on that factor.

For model 2, we therefore adjusted the model by adding covariances on the error terms between *ffni_26* and *ffni_30*, and between *ffni_3* and *ffni_7*. We also removed *ffni_38* from the model. We estimated this adjusted model and re-tested model fit.

Model 2 had an RMSEA of 0.059, a CFI of 0.822 and an (S)RMR of 0.079. While RMSEA and (S)RMR indices are acceptable, the CFI value is still below the acceptable threshold for this model (i.e. $\geq .90$). However, it is important to note that it is not uncommon for model fit indices to disagree in this way, given that they evaluate model fit from different perspectives and the 'cut-off' values for each index is somewhat arbitrary (Lai & Green, 2016). Standardized loadings for model two are shown in Fig. 1.

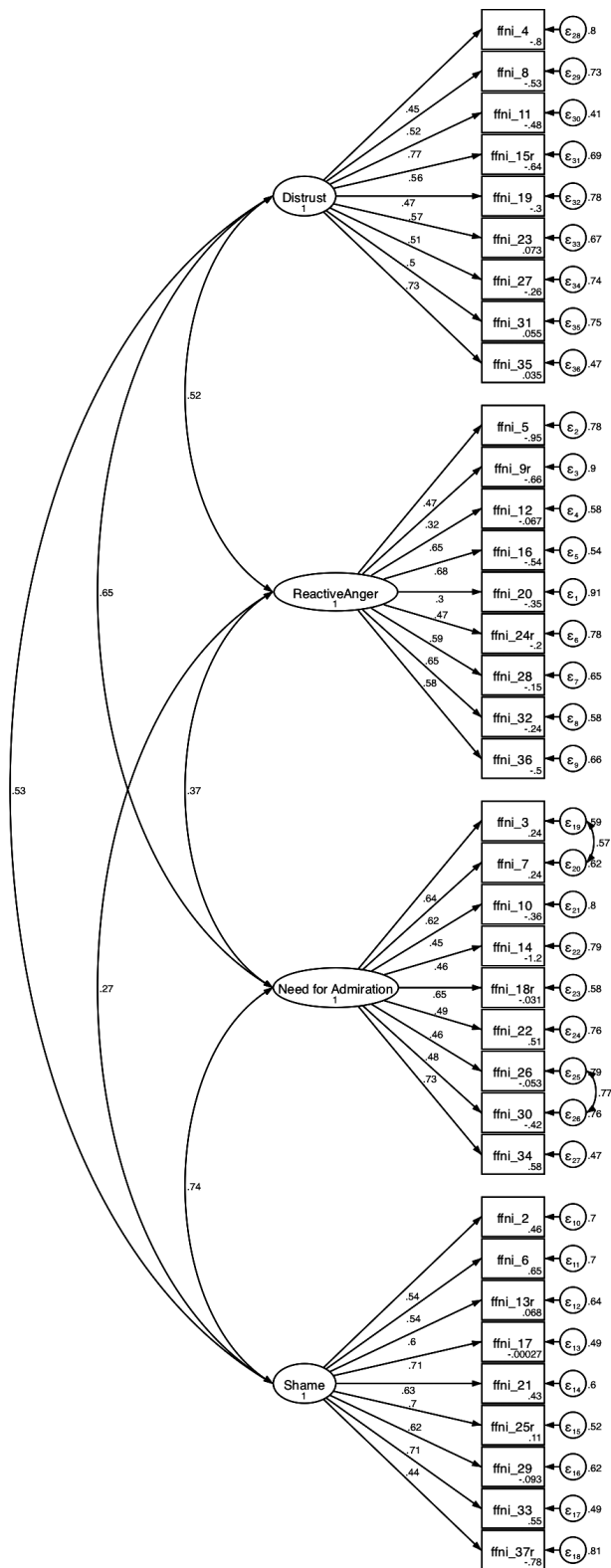


Fig. 1. CFA for model two

Model 3. We next specified a model for the short-form version of the measure (Sherman *et al.*, 2015). The short-form version has the same four-factor structure as the long-form version, with each factor being indicated by four items. The standardized factor loadings of this model ranged from 0.29 to 0.77 and are

shown in Fig. 2. This model yielded an acceptable RMSEA of 0.054, CFI of 0.925 and (S)RMR of 0.065. The model for the short-form version was thus the best fit for our data and, therefore, we used it when examining criterion validity of the measures.

Confirmatory factor analysis: FFNI Grandiose Narcissism subscale of indifference

We next tested the one factor solution for the Grandiose Narcissism subscale of Indifference.

Model 1. We first tested the long-form version of the subscale with 10 items loading on one factor. Item loadings on the latent factor ranged from 0.52 to 0.77. While CFI and (S)RMR indices were acceptable at 0.917 and 0.06, respectively, RMSEA was 0.087, which is just above the acceptable threshold. As before, model fit indices are computed using different parameters and thus may produce incongruent results in this way (Lai & Green, 2016). Given the strong factor loadings on the latent variable and absence of high modification indices in the model, we deemed that the model fit our data well and that RMSEA may be artificially higher due to other factors interacting with features such as the degrees of freedom of the model (Kenny, Kaniskan & McCoach, 2015).

Model 2. Our second model tested the short-form version of the subscale of Indifference with 4 items loading on one latent factor with item loadings ranging from 0.71 to 0.79. Model fit was good according to the model fit indices we used to evaluate it; RMSEA (0.00), CFI (1.0) and (S)RMR (0.012). The model for the short-form version of the Grandiose Narcissism subscale of Indifference was thus the best fit for our data and therefore, we used it when examining criterion validity.

Criterion validity of short-form FFNI Vulnerable Narcissism and FFNI Grandiose Narcissism subscale of indifference

We conducted correlational analysis between short-form FFNI Vulnerable Narcissism and Indifference, and the other variables included in the study. Results are reported in Table 3.

DISCUSSION

We validated our Norwegian translation of the FFNI Vulnerable Narcissism and FFNI Grandiose Narcissism subscale of Indifference by performing tests for reliability, CFA, and by assessing criterion validity. Our data came from a diverse sample of the Norwegian population based in Oslo, Norway, between the ages of 18 and 40 years old.

Alpha values for all subscales and the latent variable of Vulnerable Narcissism were above 0.8 in the long-form version we tested, except Reactive Anger which had an alpha of 0.76, which, according to DeVellis (1991) is moderately acceptable. Alpha values for the short-form version were somewhat lower for each subscale, but still within the range of being minimally respectable (DeVellis, 1991). Combined, the short-form subscales gave an acceptable alpha value of 0.83 for FFNI Vulnerable Narcissism and 0.83 for the Grandiose Narcissism subscale of

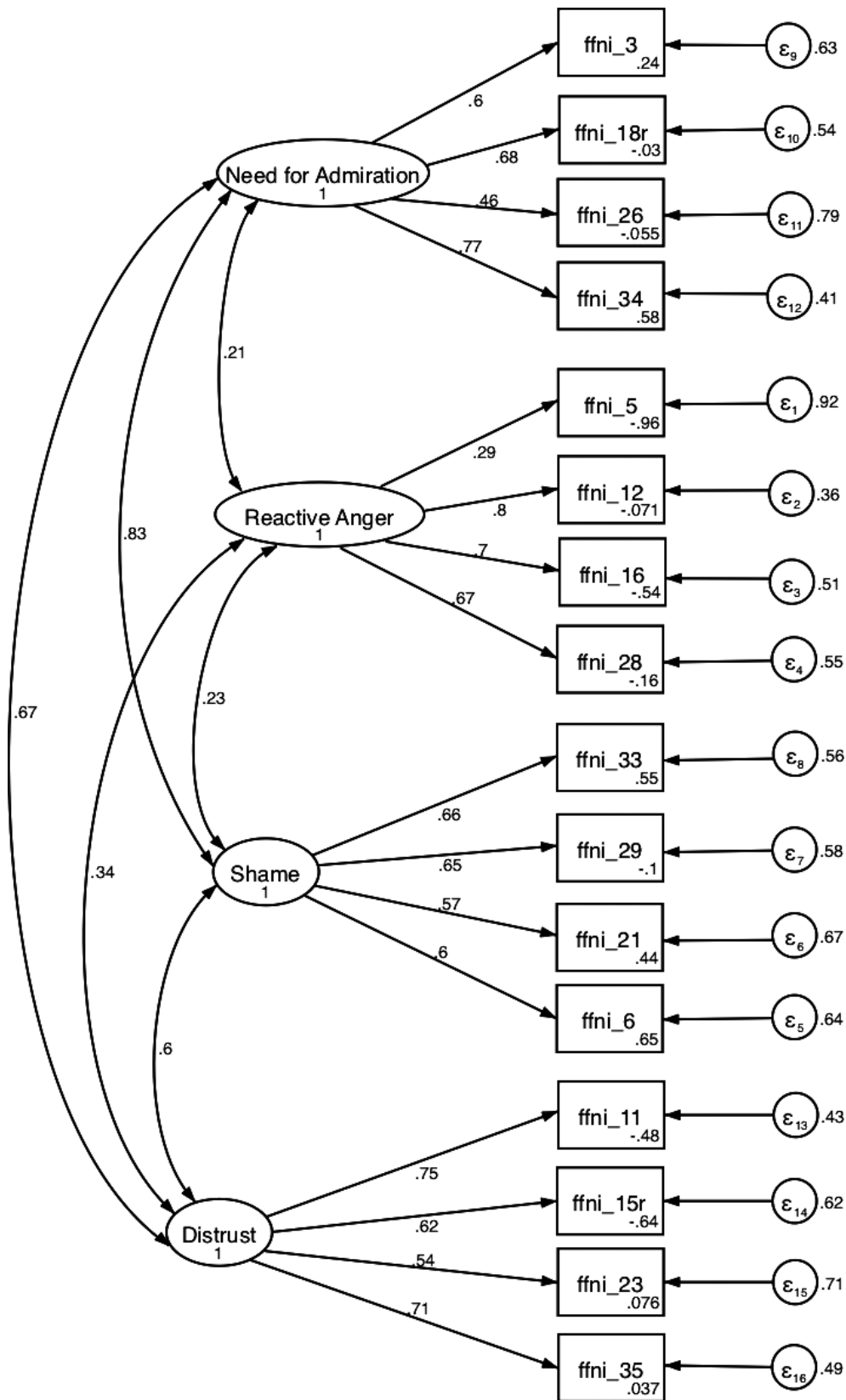


Fig. 2. CFA for model three

Indifference. We thus confirmed good reliability for both translated measures in our data.

Results from the CFA we conducted suggest that while model fit for the long-form version of FFNI Vulnerable Narcissism is

satisfactory in terms of the RMSEA fit index, the model indices overall could be improved by adding covariances on the error terms of two pairs of items and by removing two items from the model. Even still, the CFI index did not reach an acceptable level

Table 3. Correlations of the short-form (SF) vulnerable narcissism and indifference measures with other variables

Measure	UCLA3	Experiences of Rejection	EDS	Anxious (ECR-N)	Avoidant (ECR-N)	Introspectiveness	Empathic Concern (IRI)	Personal Distress (IRI)	Perspective Taking (IRI)	Fantasy (IRI)	Meaningfulness and purpose of life
Vulnerable Narcissism (SF)	0.4914*	0.4246*	0.4081*	0.4497*	0.3196*	0.2936*	0.0084	0.3664*	-0.1447*	0.1512*	-0.2589*
Indifference (SF)	-0.1459*	-0.0722	-0.0189	-0.1363*	-0.0715	-0.3160*	-0.1235	-0.2941*	-0.0043	-0.2325*	0.0903

Notes: *Significant at the $p < 0.05$ level. UCLA3, UCLA Loneliness Scale-3; EDS, The Everyday Discrimination Scale; ECR, Experiences in Close Relationships; IRI, Interpersonal Reactivity Index.

but, as previously noted, this may be due to other factors that don't necessarily imply that the model was a poor fit for the data. In addition, the translated short-form version of FFNI Vulnerable Narcissism exhibited good model fit across all three fit indices, suggesting that this version is suitable to measure and model FFNI Vulnerable Narcissism using the translated scale provided. Similarly, the short-form version of the Grandiose Narcissism subscale of Indifference exhibited the best model fit of the two versions.

We thus confirmed the factor structure of the previously validated FFNI Vulnerable Narcissism scale (Miller, Few *et al.*, 2013) in our data using the translated measures. We conclude that the short-form version of FFNI Vulnerable Narcissism and Grandiose Narcissism subscale of Indifference exhibit the best model fit overall, and given the added advantage of their parsimony, we suggest that researchers make use of these Norwegian short-form versions in future research.

While we do not have other variables measuring narcissism in the survey allowing us to conduct tests for convergent validity, we focus instead on tests of criterion validity, given the pre-existing reports documenting convergent and discriminant validity for the measures (Glover *et al.*, 2012; Miller, Few *et al.*, 2013). Indeed, our findings were consistent with Miller, Gentile *et al.* 2013 in relation to a positive correlation between FFNI Vulnerable Narcissism and anxious and avoidant attachment styles. Moreover, as in Miller, Gentile *et al.* (2013), we find that FFNI Vulnerable Narcissism is most strongly correlated with anxious attachment, while also positively correlated with avoidant attachment in our data. Furthermore, we found significant positive correlations between FFNI Vulnerable Narcissism scale and UCLA loneliness scale, Experiences of Rejection and EDS as expected. In addition, FFNI Vulnerable Narcissism also correlated positively with Introspectiveness and the IRI sub-dimensions of Personal Distress and Fantasy. Similarly, we found significant negative correlations between FFNI Vulnerable Narcissism and our measure for meaningfulness and purpose of life and the IRI sub-dimension of Perspective Taking. Finally, the FFNI Grandiose subscale of Indifference had significant low to moderate negative correlations with anxious attachment style, the UCLA loneliness scale, Introspectiveness and IRI Fantasy and Personal Distress. It did not, however, correlate significantly with Experiences of Rejection, EDS and avoidant attachment style. This confirms that the FFNI Grandiose Narcissism subscale of Indifference is not simply the flipside of FFNI Vulnerable Narcissism but rather a distinct factor associated with another dimension of narcissism (i.e. Grandiose Narcissism).

Taken together, these results suggest that the FFNI subscales for Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference, as derived from the FFM relating to the personality traits of Neuroticism and Agreeableness (Glover *et al.*, 2012), in concert with other individual differences relating to attachment style, interpersonal reactivity and introspectiveness, may be useful in assessing the possible underlying causes of feelings of loneliness and lower meaningfulness and purpose in life, as well as other factors that influence these outcomes, such as experiences of discrimination and social exclusion.

Moreover, previous research has indicated that the FFNI is useful in both clinical and non-clinical populations (Miller,

Gentile *et al.*, 2013). Therefore, an enhanced understanding of how FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference may relate to these other variables, at different levels of analysis, could pave the way for new interventions aimed at helping those who are marginalized or at risk of marginalization in society.

Strengths and limitations

In this paper, we investigated the psychometric properties of a Norwegian translation for the long- and short-form versions of FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference. The FFNI makes it possible to measure two dimensions of narcissism; both Grandiose and Vulnerable (Glover *et al.*, 2012). Only the dimension of Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference were measured for the connected experimental study. Thus, further work can be carried out to translate and validate the remaining ten Grandiose Narcissism subscales in the Norwegian population.

Of the overall sample, only 25.7% were psychology students at the University of Oslo, meaning that the sample was more diverse and representative of the general population than is normally reported in many construct validation studies. Our sample size was smaller than those reported in previous FFNI validation studies, but our data still produced satisfactory and good results for the long- and short-form versions of the measures, respectively. One limitation with our sample is that there was a gender imbalance with primarily female respondents (66.3%). Moreover, we were not able to classify our sample on the basis of 'clinical' or 'non-clinical' populations as in Miller, Few *et al.* (2013). Therefore, future research could focus on collecting data uniquely within a clinical population to report on the usefulness of the measure in clinical domains. We do expect, however, that results would likely conform to the findings reported in Miller, Few *et al.* (2013), suggesting the scale's value in clinical applications also.

CONCLUSION

In sum, the short-form version of the Norwegian translation of FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference exhibited good psychometric properties in our data. We propose that the Norwegian translations for these measures, as provided in the Appendix, can now be used to explore these important facets of human psychology in Norway and other Scandinavian countries.

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APPENDIX

Norwegian translation for the short-form version of FFNI Vulnerable Narcissism and the Grandiose Narcissism subscale of Indifference.

1. Jeg hater å bli kritisert, såpass at jeg ikke klarer å kontrollere temperamentet mitt når det skjer
2. Når jeg innser at jeg har feilet i noe føler jeg meg ydmyket
3. Jeg føler ofte at jeg trenger komplimenter fra andre for å være selvsikker
4. Når noen gjør noe hyggelig for meg lurar jeg på hva de vil ha fra meg
5. Noen ganger blir jeg rasende når jeg ikke blir behandlet riktig
6. Jeg føler meg så dårlig når jeg blir ydmyket foran andre

7. Jeg har et stabilt selvbilde
8. Jeg stoler på at andre er ærlige med meg
9. Det tar meg lang tid før jeg kan stole på folk
10. Jeg blir veldig sint hvis jeg ikke får det jeg fortjener
11. Jeg skammer meg når folk dømmer meg
12. Det tar meg lang tid før jeg kan stole på folk
13. Jeg føler meg rasende når folk ikke viser meg respekt
14. Jeg føler meg dum når jeg gjør en feil foran andre
15. Jeg skulle ønske jeg ikke brydde meg så mye om hva andre tenker om meg
16. Jeg mistenker ofte at andre ikke forteller meg hele sannheten
17. Jeg bryr meg bare ikke når folk dømmer meg
18. Jeg bryr meg veldig lite om hva andre tenker om meg
19. Jeg er temmelig likegyldig til andres kritikk av meg
20. Andres meninger om meg bekymrer meg lite

Vulnerable Narcissism dimension

Reactive Anger = 1, 5, 9, 13

Shame = 2, 6, 10, 14

Need for Admiration = 3, 7, 11, 15

Distrust = 4, 8, 12, 16

Grandiose Narcissism subscale

Indifference = 17, 18, 19, 20