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Prevalence, Correlates, Disability, and Comorbidity of DSM-IV Narcissistic Personality Disorder: Results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions

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Abstract

Objectives—To present nationally representative findings on prevalence, sociodemographic correlates, disability, and comorbidity of narcissistic personality disorder (NPD) among men and women.

Methods—Face-to-face interviews with 34,653 adults participating in the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions.

Results—Prevalence of lifetime NPD was 6.2%, with rates greater for men (7.7%) than women (4.8%). NPD was significantly more prevalent among Black men and women and Hispanic women, younger adults, and separated/divorced/widowed and never married adults. NPD was associated with mental disability among men but not women. High co-occurrence rates of substance use, mood, anxiety, and other personality disorders (PDs) were observed. With additional comorbidity controlled for, associations with bipolar I disorder, PTSD, and schizotypal and borderline PDs remained significant, but weakened, among men and women. Similar associations were observed between NPD and specific phobia, generalized anxiety disorder, and bipolar II disorder among women; and alcohol abuse, alcohol dependence, drug dependence, and histrionic and obsessive-compulsive PDs among men. Dysthymia was significantly and negatively associated with NPD.

Conclusions—NPD is a prevalent PD in the general U.S. population and is associated with considerable disability among men, whose rates exceed those of women. NPD may not be as stable as previously recognized or described in the DSM-IV. The results highlight the need for further research from numerous perspectives to identify the unique and common genetic and environmental factors underlying the disorder-specific associations with NPD observed in this study.

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Introduction

Narcissistic personality disorder (NPD) is characterized by a pervasive pattern of grandiosity, need for admiration, interpersonal exploitiveness, and lack of empathy, beginning in early adulthood and manifest in a variety of contexts.[1] Among the 10 personality disorders (PDs) defined in the *Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition* (DSM-IV), NPD has received the least empirical attention.[2,3] NPD also appears to differ from other DSM-IV PDs with respect to comorbidity. The majority of clinical studies conducted between 1985 and 1994[4,5] and since that time[6–15] have not found significant associations of NPD with most mood and anxiety disorders with the possible exception of bipolar disorder. Evidence linking NPD with substance use disorders, though strong in earlier clinical work,[4] remains mixed when more recent clinical studies are considered.[16,17] By contrast, NPD has consistently been shown to be associated with histrionic, antisocial, obsessive-compulsive, and schizotypal PDs,[18–21] with mixed evidence for a relationship with borderline PD.[20–24]

Relative to clinical work on NPD, very little is known about the correlates, disability, and comorbidity of NPD in general population samples. Although prevalence estimates of NPD are available from several early community surveys,[25–35] these surveys were geographically restricted to states and usually to cities, in addition to being limited by small sample sizes (n=133–779). Others[36–38] selected subsamples of individuals from larger general population samples based on responses to PD screening instruments or psychopathology in general, further limiting the sample size and precision of prevalence estimates. Only one large epidemiologic survey (n=2,053),[39] conducted in Oslo, Norway, yielded information on basic sociodemographic factors. No prior epidemiologic work has examined disability among individuals with NPD or assessed comorbidity of NPD with other Axis I and II disorders.

The objective of the present study was to address this gap in the PD literature by presenting current, comprehensive, and detailed information on DSM-IV NPD using data from a large epidemiologic survey of the United States, the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC).[40] The Wave 2 NESARC covered DSM-IV alcohol and specific drug use disorders, and mood and anxiety disorders assessed in the 2001–2002 Wave 1 NESARC,[41,42] in addition to NPD, schizotypal and borderline PDs, and posttraumatic stress disorder (PTSD). The remaining DSM-IV PDs (avoidant, dependent, obsessive-compulsive, paranoid, schizoid, histrionic, and antisocial) were assessed in the Wave 1 NESARC. The sample size and high response rate of the Wave 2 NESARC allow for reliable, precise estimation of lifetime prevalence of NPD, especially among important sociodemographic subgroups of the population, and allowed for the examination of comorbidity of NPD with specific Axis I and II disorders. In this study, NPD disability and comorbidity were examined while controlling for both sociodemographic characteristics and other psychiatric disorders to determine the unique relationship of each specific disorder to NPD. The importance of controlling for other disorders that are themselves highly comorbid is important as has recently been highlighted in the psychiatric epidemiology literature.[43,44] This study also provides information on mental disability associated with NPD. Because so little is known about sex differences in NPD, information on correlates, disability, and comorbidity of NPD is presented for the total sample and by sex.

Methods

Sample

The 2004–2005 Wave 2 NESARC[40] is the second wave following upon the Wave 1 NESARC, conducted in 2001–2002 and described in detail elsewhere.[41,42] The Wave 1 NESARC was a representative sample of the civilian, noninstitutionalized adult population of the United States, 18 years and older, residing in households and group quarters. Face-to-face interviews

were conducted with 43,093 respondents. The NESARC oversampled Blacks, Hispanics, and young adults 18 to 24 years old. The overall response rate was 81.0%.

In Wave 2, attempts were made to conduct face-to-face reinterviews with all 43,093 respondents to the Wave 1 interview. Excluding respondents ineligible for the Wave 2 interview because they were deceased, deported, on active military duty throughout the follow-up period, or mentally or physically impaired, the Wave 2 response rate was 86.7%, reflecting 34,653 completed Wave 2 interviews. The cumulative response rate at Wave 2 is equal to the product of the Wave 2 and Wave 1 response rates, or 70.2%. As in Wave 1, the Wave 2 NESARC data were weighted to reflect design characteristics of the survey and account for oversampling. Adjustment for nonresponse across sociodemographic characteristics and the presence of any lifetime Wave 1 substance use disorder or psychiatric disorder was performed at the household and person levels to ensure that the sample approximates the target population, i.e., the original sample minus attrition between the 2 waves due to death, institutionalization or incapacitation, deportation or permanent departure from the U.S., and being in the military for the full length of the Wave 2 interviewing period. When Wave 2 respondents were compared with the target population that comprised Wave 2 respondents plus eligible nonrespondents in terms of baseline (Wave 1) sociodemographic and diagnostic measures, there were no significant differences between Wave 2 respondents and the target population with respect to age, race-ethnicity, sex, socioeconomic status, or the presence of any lifetime substance use, mood, anxiety, or personality disorder (each examined separately). Weighted Wave 2 data were then adjusted to be representative of the civilian population on socioeconomic variables including region, age, race-ethnicity and sex, based on the 2000 Decennial Census.

All potential NESARC respondents were informed in writing about the nature of the survey, the statistical uses of the survey data, the voluntary aspect of their participation and the Federal laws that rigorously provide for the strict confidentiality of identifiable survey information. Those respondents consenting to participate after receiving this information were interviewed. The research protocol, including informed consent procedures, received full ethical review and approval from the U.S. Census Bureau and the U.S. Office of Management and Budget.

Personality Disorders

Diagnoses were made using the Wave 2 Alcohol Use Disorder and Associated Disabilities Interview Schedule – DSM-IV Version (AUDADIS-IV),[45,46] a fully structured diagnostic interview designed for use by experienced lay interviewers. Avoidant, dependent, obsessive-compulsive, paranoid, schizoid, histrionic, and antisocial PDs were assessed in the Wave 1 NESARC and are described in detail elsewhere.[47–49] Borderline, schizotypal, and narcissistic PDs were assessed in Wave 2. All PD diagnoses were assessed on a lifetime basis.

The diagnosis of PDs requires evaluation of long-term patterns of functioning.[1] Accordingly, all NESARC respondents were asked a series of NPD symptom questions about how they felt or acted most of the time throughout their lives, regardless of the situation or whom they were with. They were instructed not to include symptoms occurring only when they were depressed, manic, anxious, drinking heavily, using medicines or drugs, experiencing withdrawal symptoms (defined earlier in the interview), or physically ill. To receive a diagnosis of NPD, respondents had to endorse the requisite number of DSM-IV criteria, at least 1 of which must have caused social or occupational dysfunction. Diagnoses for other PDs were made similarly, except for antisocial PD. Respondents needed to endorse the requisite number of both childhood symptom items before age 15 and symptom items for the adult antisocial syndrome since age 15. PD symptom items[46] (N=18) were similar to those appearing in the Structured Clinical Interview for DSM-IV Personality Disorders,[50] the International Personality Disorder Examination,[51] and the Diagnostic Interview for DSM-IV Personality Disorders.[52]

Reliability of AUDADIS-IV PD diagnoses and symptom scales was assessed in large test-retest studies conducted as part of the Wave 1[53] and Wave 2[54] NESARC surveys. The Kappa (κ) coefficient for NPD was 0.70; reliabilities of other PDs ranged from fair to good (κ= 0.40–0.71). Reliabilities of the associated symptom scales (i.e., sums of criteria) were higher (intraclass correlation coefficients=0.50–0.83). Reliabilities of AUDADIS-IV PD diagnoses compare favorably with those found in short-term test-retest studies using semistructured personality interviews in treated samples of patients.[55] Convergent validity of PDs assessed in Wave 1 was good to excellent and is reported in detail elsewhere.[47–49]

Other Psychiatric Disorders

Wave 2 AUDADIS-IV measures of substance use (alcohol and drug-specific abuse and dependence and nicotine dependence), mood (major depressive disorder, dysthymia, bipolar I, and bipolar II), and anxiety (panic disorder with and without agoraphobia, social phobia, specific phobia, and generalized anxiety) disorders were identical to those utilized in Wave 1, except for the time frames Wave 2 diagnoses of these disorders were made for 2 time periods between Waves 1 and 2: (1) the year preceding the Wave 2 interview; and (2) the "intervening" period of approximately 2 years following the Wave 1 interview but before the year preceding the Wave 2 interview. For this study, 12-month diagnoses reflect disorders occurring during the year preceding the Wave 2 interview, while lifetime diagnoses reflect those occurring over the life course assessed in both Wave 1 and Wave 2.

Extensive questions covered DSM-IV criteria for alcohol and drug-specific abuse and dependence, including sedatives, tranquilizers, opioids other than heroin, cannabis, cocaine or crack, stimulants, hallucinogens, inhalants and solvents, heroin, and other illicit drugs. Consistent with Wave 1 diagnoses, 12-month abuse required 1 or more of 4 abuse criteria and dependence required 3 or more of 7 dependence criteria to be met in the year preceding the Wave 2 interview. Similar to prior-to-the-past-year diagnoses in the Wave 1 NESARC, criteria for dependence during the intervening period must have clustered within 1 year. Drug-specific abuse and dependence were aggregated in this study to yield diagnoses of any drug abuse and any drug dependence.

The reliability of AUDADIS-IV alcohol and drug diagnoses is documented in clinical and general population samples,[53,54,56–59] with test-retest reliability ranging from good to excellent (κ= 0.70–0.91). Convergent, discriminant, and construct validity of AUDADIS-IV substance use disorder diagnoses were good to excellent,[60–64] including in the World Health Organization/National Institutes of Health International Study on Reliability and Validity,[65–70] in which clinical reappraisals documented good validity of DSM-IV alcohol and drug use disorder diagnoses (κ= 0.54–0.76).[56,65]

Mood disorders included DSM-IV primary major depressive disorder (MDD), dysthymia, bipolar I, and bipolar II. Anxiety disorders included DSM-IV primary panic disorder with and without agoraphobia, social and specific phobias, and generalized anxiety disorder (GAD). AUDADIS-IV methods to diagnose these disorders are described in detail elsewhere.[42,71–76] In DSM-IV,[1] "primary" excludes substance-induced disorders and those due to general medical conditions. Diagnoses of MDD also ruled out bereavement. In addition, past-year and prior-to-the-past-year diagnoses of PTSD were assessed in the Wave 2 NESARC.

Test-retest reliabilities for AUDADIS-IV mood, anxiety, and PD diagnoses in the general population and clinical samples were fair to good (κ= 0.40–0.77).[53,54,56] Convergent validity was good to excellent for mood and anxiety diagnoses,[71–76] and selected diagnoses showed good agreement (κ= 0.64–0.68) with psychiatrist reappraisals.[56]

Disability

Disability was determined with the Short Form-12 Health survey, version 2 (SF-12*v*2).[77] The SV-12*v*2 yields 3 profile scores that measure dimensions of mental disability: social functioning; role emotional functioning (measuring role impairment); and mental health. Standard norm-based scoring techniques were used to transform each score (range 0–100) to achieve a mean of 50 and a standard deviation of 10 in the U.S. general population. Lower scores indicate greater disability.

Statistical Analysis

All analyses presented here were conducted for the total sample and by sex. Unlike the majority of reports published in the extant literature on the prevalence, correlates, disability and comorbidity of NPD and other psychiatric disorders, we selected a probability level of 0.01, rather than $p < 0.05$, for all statistical comparisons to minimize Type I statistical error. Weighted frequencies and cross-tabulations were computed to calculate: (1) lifetime prevalences of NPD by sociodemographic characteristics; (2) prevalences of NPD among respondents with other psychiatric disorders; and (3) prevalences of other psychiatric disorders among respondents with NPD. Adjusted odds ratios, derived from single logistic regression analyses, assessed associations of NPD with sociodemographic characteristics. Chi-square statistics were used to determine sex differences in rates of co-occurrence of NPD with other psychiatric disorders.

Associations of NPD with other psychiatric disorders were calculated 2 ways. The first controlled for sociodemographic characteristics. The second further controlled for all other psychiatric disorders. The latter analysis addresses the fact that analyses controlling only for sociodemographic characteristics do not yield information on the unique relationships of NPD to other disorders, that themselves have considerable comorbidity. Thus, control for other psychiatric disorders is necessary as these disorders confound the relationships between NPD and each target diagnosis.

Multiple linear regression analyses examined the relationships of NPD with each of the 3 SF-12*v*2 disability scores, controlling first for sociodemographic characteristics and then controlling for sociodemographic characteristics and other psychiatric disorders, to determine the independent contribution of NPD to disability.

All standard errors and 99% confidence intervals were estimated using SUDAAN,[78] which adjusts for design characteristics of complex surveys like the NESARC.

Results

Prevalence and Sociodemographic Characteristics

The prevalence of NPD in the NESARC sample was 6.2% (Table 1). Rates of NPD were significantly greater among men (7.7%) than among women (4.8%). For the total sample, an inverse relationship of NPD with age was observed; this result generalized to both men and women. The odds of NPD were also significantly ($p < 0.01$) greater among Black men and women and among Hispanic women. Respondents who were separated/divorced/widowed or never married were more likely to have NPD in the total sample and among women. Among men, respondents who were separated/divorced/widowed also had a greater odds of NPD.

Co-Occurrence of Lifetime DSM-IV NPD and 12-Month Axis I Psychiatric Disorders

Rates of co-occurrence of lifetime NPD with 12-month psychiatric disorders are shown in Table 2 for the total sample and by sex. For the total sample, the prevalences of NPD among respondents with mood, anxiety, and substance use disorders were 17.4%, 15.2%, and 11.8%, respectively. Within these broad categories, rates of NPD were greatest among respondents

with 12-month bipolar I (31.1%), panic disorder with agoraphobia (23.9%), and drug dependence (34.9%). The prevalence of NPD was significantly ($p < 0.01$) greater among men than women with alcohol use disorders, drug dependence, nicotine dependence, MDD, bipolar I disorder, and anxiety disorders except panic disorder with agoraphobia and social phobia.

Rates of any 12-month substance use, mood, and anxiety disorder among respondents with lifetime NPD were 40.6%, 28.6%, and 40.0%, respectively. Alcohol dependence (13.1%), bipolar I (14.1%), and PTSD (19.5%) were the most prevalent disorders in their classes among respondents with NPD. Rates of alcohol abuse and dependence and any drug use disorder were greater among men with NPD than among women with NPD, whereas women with NPD had greater rates of MDD and anxiety disorders except panic disorder without agoraphobia and social phobia.

Co-Occurrence of Lifetime DSM-IV NPD and Lifetime Axis I and II Psychiatric Disorders

In the total sample, prevalences of NPD among respondents with lifetime mood, anxiety, and substance use disorders were 11.9%, 11.5%, and 8.8%, respectively (Table 3). Bipolar I disorder (23.8%), panic disorder with agoraphobia (19.9%), and drug dependence (22.0%) were the most prevalent disorders in their classes. Rates of NPD were significantly greater among men than women with alcohol and drug abuse and dependence, nicotine dependence, MDD, bipolar I disorder, and anxiety disorders except panic disorder with agoraphobia.

Prevalence of NPD among respondents with any other PD was 20.2%, with rates significantly greater for men (23.0%) than for women (17.4%). By far, the prevalence of NPD in the total sample was greatest among respondents with antisocial and histrionic PDs. Rates of NPD were significantly greater among men with paranoid, schizoid, borderline, histrionic, and obsessive-compulsive PDs than among women with these PDs.

Prevalences of mood, anxiety, substance use, and other PDs among respondents with NPD were 49.5%, 54.7%, 64.2%, and 62.9%, respectively. Within these diagnostic classes, MDD (20.6%) and bipolar I disorder (20.1%), specific phobia (27.4%) and PTSD (25.7%), alcohol dependence (30.6%), and borderline PD (37.0%) were the most prevalent among respondents with NPD. Similar to results for 12-month disorders, rates of alcohol and drug abuse and dependence were significantly greater among men than among women with NPD, whereas rates of MDD, bipolar II, and anxiety disorders except social phobia were greater among women with NPD than among men with NPD. With regard to other PDs, men with NPD were significantly more likely than women with NPD to have antisocial PD, whereas women with NPD were significantly more likely than men with NPD to have borderline PD.

Associations Between Lifetime DSM-IV NPD and 12-Month Axis I Psychiatric Disorders Controlling for Sociodemographic Characteristics and Other Psychiatric Disorders

Associations of lifetime NPD with 12-month Axis I disorders controlling for sociodemographic characteristics and additional comorbid disorders are depicted in Table 4. When only sociodemographic characteristics were controlled, nearly all associations between NPD and other psychiatric disorders were positive and significant, both for the total sample and among men and women. The only exception was that alcohol abuse was not associated with NPD among men or women.

Odds ratios were no longer significant, or were reduced, when additional comorbidity was controlled. For the total sample and among men, associations of NPD with alcohol abuse, alcohol dependence, and drug dependence remained significant, but were reduced in magnitude. NPD also remained significantly, but less strongly, associated with specific phobia and bipolar II disorder among women, with a similar pattern observed for associations between

NPD and bipolar I disorder, GAD, and PTSD among men and women. NPD was negatively associated with panic disorder with agoraphobia among men. There were no significant differences ($p < 0.01$) in the strength of associations observed between men and women.

Associations Between Lifetime DSM-IV NPD and Lifetime Axis I and II Psychiatric Disorders Controlling for Sociodemographic Characteristics and Other Psychiatric Disorders

Associations of lifetime NPD with lifetime Axis I and II disorders are shown in Table 5. For the total sample and among men and women, lifetime NPD was significantly associated with all lifetime Axis I and II disorders except alcohol abuse and dysthymia when only sociodemographic factors were controlled.

When comorbidity was additionally controlled, many associations between NPD and other Axis I and II disorders that were observed when only sociodemographic factors were controlled were no longer significant. For other disorders, odds ratios remained significant but were reduced in magnitude. Odds ratios measuring associations of NPD with bipolar I, PTSD, and schizotypal and borderline PDs remained significant but were reduced among men and women. NPD remained significantly associated with drug dependence and with histrionic and obsessive-compulsive PDs among men, whereas NPD remained significantly associated with bipolar II and GAD among women. Dysthymia, not significantly associated with NPD when only sociodemographic factors were controlled, became negatively associated with NPD among men and women with additional control for other psychiatric disorders. There were no significant differences ($p < 0.01$) in the magnitude of associations between men and women.

Disability

When only sociodemographic characteristics were controlled, NPD was significantly associated with each SF-12v2 mental disability score among both men and women. With additional control for comorbidity, NPD was significantly related to two SF-12*v*2 mental disability scores: role emotional functioning and mental health only among men. Men with lifetime NPD had greater disability than men without NPD, even when sociodemographic characteristics and other Axis I and II psychiatric disorders were controlled.

Discussion

The prevalence of NPD in this general population sample was 6.2%, which falls in the middle of the broad range of estimates (0.0%–14.7%) found in previous epidemiologic surveys.[25–38] The discrepancy in rates of NPD between this study and some others may be partly due to limitations of prior surveys with respect to geographically restricted and small sample sizes. Differences in diagnostic criteria, assessment instruments, and survey designs and methodologies may also have contributed to the discrepancies.

At variance with 1 epidemiologic study[39] that found no sex differences in prevalence of NPD, this study found higher rates of NPD among men than among women. No clinical or epidemiologic studies have examined the relationship between race-ethnicity and NPD. The absence of such data is striking,[79] given the substantial extent to which culture is intertwined with personality. New findings from the NESARC showed that rates of NPD were higher among Black men and women and Hispanic men. Why these minority groups were found to have differential risk of NPD raises important questions regarding the influence of cultural experiences, including acculturation, on expressions of personality psychopathology. Whether culturally specific experiences may protect against or increase vulnerability to NPD, or whether DSM-IV PD categories may be culturally uninformed, are important questions for future clinical and epidemiologic research. Cross-cultural research on NPD is also needed to

understand how differences in religious and socio-cultural value systems contribute to the development of NPD.

NPD was inversely related to age, with the greatest decline occurring after age 29 years. NPD may be more prevalent among young adults due to developmental challenges in the transition from adolescence to adulthood. Taken together, these results suggest that NPD in adolescence and early adulthood may not always develop into adult NPD through possible mechanisms associated with developmental life experiences. These findings are consistent with the only prospective follow-up[80] of patients with NPD. Although small (n=20), this 3-year follow-up found that about 50% of the 22- to 45-year-old subjects with DSM-IV NPD at baseline did not qualify for the diagnosis 3 years later. These results also suggest that NPD may not meet current DSM-IV diagnostic criteria that reflect enduring personality traits. However, the decline in NPD rates from the 30- to 44-year-old age group to the group of respondents 45-to-64 years-old was small, suggesting an enduring, severe PD, at least in some individuals. Further longitudinal work is warranted to differentiate individuals who may have shorter-term, context-dependent, versus enduring forms of NPD, and to identify family history, comorbidity, and developmental and intervening life experiences (e.g., employment, marriage) that influence their course. Further, the consistency of the observed age gradient in the present study with the outcome of the clinical prospective study suggests that age differences observed in this study may in part be real, and cannot be attributed solely to artifacts such as longer duration of illness, selective mortality, cohort effects, or recall or other biases. Further prospective epidemiologic research is needed to address this issue more definitively.

This study also identified sociodemographic characteristics associated with increased odds of NPD that were not generally reported in previous clinical and epidemiologic research due to limitations in sample size. The rates of NPD were generally greater among individuals who were separated, divorced, or widowed, results that did not vary by sex. These findings are consistent with prior studies that have shown that NPD relative to other PDs was uniquely related to causing significant others pain an duress[3] and that the NPD is largely associated with costs experienced by others.[81, 82] Whether being separated, divorced, or widowed, or never married represent true risk factors for NPD or vice versa are questions best addressed within a longitudinal framework.

In general, co-occurrence rates of other psychiatric disorders among individuals with NPD were much greater than the co-occurrence rates of NPD among individuals with other psychiatric disorders. Mirroring the distribution of psychiatric disorders in the general population, men with NPD had significantly higher rates of most substance use disorders and antisocial PD, whereas women with NPD generally had higher rates of MDD and most anxiety disorders. These results suggest more vigilance in the assessment of substance use and specific mood, anxiety, and other PDs among individuals with NPD, with due consideration for sex differences in the co-occurrence rates observed in this study. In contrast to distributions observed in the general population, rates of NPD among individuals with most substance, mood and anxiety disorders were greater among men than women. Further, the co-occurrence rates of NPD among individuals with other psychiatric disorders were lower than the corresponding rates of other psychiatric disorders among individuals with NPD, but were far from trivial. Taken together, these findings suggest increased vigilance in assessing NPD among individuals with substance use, mood, anxiety, and borderline and histrionic PDs, especially among men, whose rates of these disorders consistently exceeded those of women.

New findings from the NESARC highlight the importance of controlling for additional psychiatric disorders[43,44] that are highly comorbid with each other when examining associations between NPD and other specific disorders. Regardless of whether 12-month or lifetime associations were examined, the majority of the odds ratios for associations between

NPD and most other substance use, mood, anxiety, and other PDs were strong and significant with control only for sociodemographic characteristics. To understand further the unique contribution of other disorders to NPD, we additionally controlled for all other disorders assessed in the NESARC. Twelve-month and lifetime associations of NPD with bipolar I and PTSD remained significant, but were reduced, among men and women. Twelvemonth associations between NPD and GAD remained significant for both sexes, whereas the corresponding lifetime association was only significant among women. For both time periods, NPD was significantly associated with bipolar II among women, and the 12-month association between NPD and specific phobia remained significant, but reduced, only among women. Further, 12-month associations of NPD with alcohol abuse, alcohol dependence, and drug dependence remained significant among men, whereas lifetime associations remained significant only for drug abuse among men. The drop in magnitude of these associations when other comorbidity was controlled for is analogous to that in twin and genetic study designs and suggests that much of the association of NPD with these disorders appears due to factors common to these disorders. The present results highlight the importance of future research on common and specific genetic or environmental factors that underlie the comorbidity of NPD and these disorders.

The findings on comorbidity in the present study are consistent with most early clinical research[4] that demonstrated the strongest relationships between NPD and bipolar I and substance use disorders, but at variance with most previous clinical research that has found no associations between NPD and specific anxiety disorders.[4,9,11,13,15] Although no prior study has examined sex differences in NPD comorbidity, the present study found that some substance use disorders were associated with NPD among men, whereas GAD, specific phobia, and bipolar II disorder were consistently associated with NPD among women. Further, NPD was highly comorbid with borderline and schizotypal PDs among both men and women, consistent with some,[18,20,21,83] but not all,[22–24] prior clinical research.[22–24] The strong relationship between NPD and histrionic PD found in early studies[18–21,83] was observed in the present study only among men. The association with obsessive-compulsive PD has been observed in some prior clinical studies,[20,21] but was found only among men in the present study.

Examination of sex-specific and non sex-specific patterns of comorbidity observed in this study can provide a starting point for future research that seeks to identify common and unique factors underlying disorder-specific associations. As described above, some of the associations between NPD and other psychiatric disorders were sex-specific. Interestingly, in those cases when associations remained significant among both men and women, there were no differences in the magnitude of the associations. Taken together, these findings generate more focused hypotheses about factors underlying NPD comorbidity. For example, when sex differences exist for associations between NPD and other psychiatric disorders, is there something about one's gender that would increase vulnerability to that comorbidity? Further, when no sex differences were observed in the magnitude of NPD associations, future research should focus on potential shared environmental and/or genetic factors underlying these disease-specific associations that might explain this pattern of comorbidity. Taken together, these results underscore the importance of future research to address sex differences in NPD comorbidity.

Interestingly, a significant negative lifetime association between NPD and dysthymia among both men and women was observed in this study. That men with NPD were significantly less likely to have dysthymia compared with men without NPD could be viewed within the context of the increased rates of some substance use disorders among men, but not women, with NPD. Substance abuse and dependence may reflect attempts on the part of men with NPD not only to reestablish or maintain grandiosity, but also to defend against the negative affect accompanying dysthymia that often accompanies aging and life's inevitable limitations. Taken together, these results suggest a propensity of men with NPD to self-medicate to maintain a

sense of omnipotence and grandiosity, to protect a very fragile self esteem,[1] and to ameliorate feelings of depression, guilt, and worthlessness associated with dysthymia.[84] Why NPD was negatively associated with dysthymia among women is less clear. Future research is needed to elucidate the nature and role of depressive states in the development, course, and severity of NPD among men and women.

That NPD was associated with social and role dysfunction is consistent with the definition of NPD in the DSM-IV as well as with findings from 1 clinical study.[3] However, the present study found that disability was associated with NPD among men, but not among women, when other psychiatric disorders were controlled for in the analyses. These results strongly suggest that much of the disability associated with NPD among women may be attributed to its comorbidity with other disorders. That the relationship between NPD and disability among men remained significant with adjustments for comorbidity further suggests that NPD may have a more severe expression in men relative to women. These findings also underscore the need for further research to provide the evidence necessary to strengthen arguments for the inclusion of NPD in the DSM-IV on the basis of impairment. Further longitudinal research that builds upon a growing body of recent research in this area is also needed to understand the impact of disability on the course, outcome, and comorbidity of NPD.

Potential study limitations are noted. This study is based on data from the Wave 2 NESARC. We were unable to reinterview respondents to the Wave 1 interview who were deceased or unable or unwilling to participate. However, the Wave 2 response rate, much higher than that obtained in most national surveys to date, combined with statistical adjustments for nonresponse at both the person and household levels on numerous sociodemographic characteristics and the presence of any lifetime Wave 1 Axis I or II disorder, considerably minimized the impact of nonresponse bias on study findings. Although the NESARC included a group quarters sampling frame, some special populations were not included in the sample, e.g., individuals under age 18 years and those incarcerated or hospitalized during the interview periods.

In summary, the prevalence of NPD in this U.S. general population sample was significantly greater among men than among women and the disorder was associated with substantial mental disability among men. The present study has also identified population subgroups at risk for NPD that have rarely been reported in previous studies. Importantly, NPD was inversely related to age, suggesting that the disorder may be less chronic than previously recognized. This study has also highlighted the need for future epidemiologic, clinical, and genetically informed studies to identify unique and common factors underlying disorder-specific comorbidity with NPD found in the NESARC sample. Important sex differences in rates of and associations with NPD can inform more focused, hypothesis-driven investigations of those factors and provide important information for treatment planning.

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Table 1

Lifetime Prevalence and Odds Ratios of DSM-IV Narcissistic Personality Disorder and Sociodemographic Characteristics and Sex

	Total		Men		Women	
Characteristic	**% (SE)**	**OR (99% CI)**	**% (SE)**	**OR (99% CI)**	**% (SE)**	**OR (99%)**
Total	6.2 (0.20)					
Sex						
Male	7.7 (0.30)	**1.8** (1.52–2.05)				
Female	4.8 (0.22)	1.0				
Age, y						
20–29	9.4 (0.53)	**3.0** (2.22–4.16)	11.5 (0.81)	**3.0** (1.98–4.50)	7.4 (0.65)	**3.2** (1.99–5.15)
30–44	7.1 (0.30)	**2.5** (1.88–3.30)	8.3 (0.50)	**2.2** (1.59–3.10)	6.0 (0.37)	**2.9** (1.94–4.32)
45–64	5.6 (0.30)	**1.9** (1.47–2.54)	7.0 (0.51)	**1.8** (1.27–2.56)	4.2 (0.30)	**2.1** (1.39–3.07)
65+	3.2 (0.26)	1.0	4.3 (0.41)	1.0	2.3 (0.28)	1.0
Race-ethnicity						
White	5.0 (0.18)	1.0	6.8 (0.31)	1.0	3.3 (0.19)	1.0
Black	12.5 (0.67)	**2.3** (1.93–2.80)	13.6 (0.92)	**1.9** (1.45–2.39)	11.6 (0.75)	**3.0** (2.33–3.89)
Native American	7.1 (1.25)	1.4 (0.83–2.31)	9.5 (2.37)	1.4 (0.65–2.81)	5.2 (1.35)	1.5 (0.70–3.12)
Asian or Pacific Islander	5.4 (0.97)	1.0 (0.59–1.73)	5.8 (1.46)	0.8 (0.36–1.63)	5.0 (1.20)	1.5 (0.73–2.97)
Hispanic	7.5 (0.60)	**1.3** (1.01–1.70)	8.3 (0.86)	1.1 (0.76–1.49)	6.8 (0.55)	**1.8** (1.31–2.41)
Family income, $						
0–19,999	7.4 (0.43)	1.2 (0.98–1.56)	9.9 (0.78)	1.3 (0.94–1.78)	5.9 (0.40)	1.1 (0.79–1.59)
20,000–34,999	7.0 (0.37)	1.2 (0.98–1.52)	9.0 (0.67)	1.3 (0.98–1.81)	5.3 (0.41)	1.1 (0.76–1.49)
35,000–69,999	5.7 (0.28)	1.0 (0.83–1.23)	7.0 (0.43)	1.0 (0.78–1.30)	4.5 (0.32)	1.0 (0.74–1.32)
≥70,000	5.3 (0.28)	1.0	6.6 (0.46)	1.0	3.8 (0.36)	1.0
Marital status						
Married/cohabiting	5.0 (0.20)	1.0	6.3 (0.32)	1.0	3.6 (0.23)	1.0
Separated/widowed/divorced	7.3 (0.40)	**1.7** (1.46–2.04)	11.0 (0.79)	**1.8** (1.44–2.36)	5.5 (0.36)	**1.7** (1.33–2.17)
Never married	9.5 (0.50)	**1.3** (1.04–1.61)	10.4 (0.68)	1.1 (0.85–1.54)	8.5 (0.59)	**1.5** (1.14–2.05)
Education						
Less than high school graduate	6.6 (0.42)	1.0 (0.76–1.22)	8.1 (0.74)	0.9 (0.66–1.27)	5.2 (0.43)	1.1 (0.79–1.44)
High school graduate	5.9 (0.32)	0.9 (0.78–1.11)	7.2 (0.50)	0.9 (0.68–1.09)	4.8 (0.35)	1.1 (0.84–1.37)
Some college or higher	6.2 (0.25)	1.0	7.8 (0.37)	1.0	4.7 (0.28)	1.0

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Characteristic	Total		Men		Women	
	% (SE)	OR (99% CI)	% (SE)	OR (99% CI)	% (SE)	OR (99%)
Urbanicity						
Urban	6.3 (0.21)	1.1 (0.88–1.35)	7.8 (0.32)	1.1 (0.83–1.52)	4.8 (0.23)	1.0 (0.76–1.39)
Rural	5.8 (0.42)	1.0	7.1 (0.72)	1.0	4.6 (0.47)	1.0
Region						
Northeast	5.9 (0.38)	0.9 (0.70–1.14)	7.4 (0.60)	0.9 (0.66–1.22)	4.5 (0.42)	0.9 (0.63–1.22)
Midwest	5.9 (0.44)	0.9 (0.70–1.15)	7.8 (0.72)	1.0 (0.70–1.36)	4.2 (0.44)	0.8 (0.56–1.10)
South	6.2 (0.31)	0.9 (0.76–1.14)	7.5 (0.45)	0.9 (0.71–1.19)	4.9 (0.35)	0.9 (0.71–1.25)
West	6.6 (0.37)	1.0	8.1 (0.57)	1.0	5.2 (0.41)	1.0

Estimates in **boldface** are statistically significant ($p < 0.01$).

Table 2

Co-occurrence Rates of Lifetime DSM-IV Narcissistic Personality Disorder and Axis I 12-Month Psychiatric Disorder by Sex

	Prevalence of Narcissistic Personality Disorder Among Respondents with Other Psychiatric Disorder			Prevalence of Other Psychiatric Disorder Among Respondents with Narcissistic Personality Disorder		
Psychiatric Disorder	**Total % (SE)**	**Men % (SE)**	**Women % (SE)**	**Total % (SE)**	**Men % (SE)**	**Women % (SE)**
Any substance use disorder	11.8 (0.53)	13.6 (0.70)	9.2 (0.65)*	40.6 (1.23)	46.9 (1.74)	31.3 (1.81)*
Any substance abuse	12.2 (0.92)	12.8 (1.18)	10.5 (1.33)	12.9 (0.91)	16.5 (1.40)	7.5 (0.98)*
Any substance dependence	19.6 (1.20)	22.4 (1.48)	13.7 (1.57)*	15.4 (0.94)	20.0 (1.47)	8.6 (0.96)*
Any alcohol use disorder	13.8 (0.75)	15.4 (0.93)	9.9 (1.03)*	21.7 (1.03)	28.9 (1.59)	11.0 (1.09)*
Alcohol abuse	10.0 (0.90)	11.0 (1.14)	7.3 (1.15)*	8.6 (0.76)	11.6 (1.16)	4.0 (0.64)*
Alcohol dependence	18.5 (1.21)	21.2 (1.50)	12.6 (1.62)*	13.1 (0.84)	17.3 (1.32)	6.9 (0.88)*
Any drug use disorder	24.1 (1.87)	25.9 (2.44)	20.6 (2.96)	9.3 (0.80)	11.2 (1.20)	6.6 (1.00)*
Any drug abuse	19.4 (2.00)	19.4 (2.53)	19.3 (3.26)	5.3 (0.59)	6.2 (0.85)	4.0 (0.79)
Any drug dependence	34.9 (3.90)	43.2 (5.36)	22.3 (5.10)*	4.6 (0.66)	5.8 (1.01)	2.9 (0.69)
Nicotine dependence	11.6 (0.62)	13.9 (0.90)	8.8 (0.72)*	26.0 (1.19)	28.2 (1.61)	22.7 (1.66)
Any mood disorder	17.4 (0.84)	25.9 (1.66)	12.9 (0.82)*	28.6 (1.19)	24.6 (1.53)	34.5 (1.82)*
Major depressive disorder	10.4 (0.76)	17.5 (1.95)	7.5 (0.70)*	9.6 (0.72)	8.0 (0.97)	12.0 (1.08)*
Dysthymia	16.6 (2.15)	24.8 (4.85)	12.8 (2.12)	3.2 (0.43)	2.5 (0.54)	4.1 (0.69)
Bipolar I	31.1 (2.00)	42.0 (3.53)	23.9 (1.91)*	14.1 (0.90)	12.7 (1.29)	16.3 (1.20)
Bipolar II	22.5 (2.88)	27.7 (5.97)	19.8 (3.27)	3.1 (0.44)	2.2 (0.56)	4.5 (0.81)
Any anxiety disorder	15.2 (0.64)	22.6 (1.28)	11.5 (0.59)*	40.0 (1.27)	33.0 (1.78)	50.3 (1.88)*
Panic with agoraphobia	23.9 (3.12)	24.5 (5.49)	23.7 (3.57)	3.1 (0.45)	1.5 (0.38)	5.4 (0.90)*
Panic without agoraphobia	15.1 (1.70)	22.4 (3.55)	11.4 (1.70)*	4.4 (0.50)	3.7 (0.67)	5.4 (0.79)
Social phobia	21.0 (1.73)	25.3 (3.05)	18.3 (2.24)	8.6 (0.80)	6.9 (0.93)	11.2 (1.44)
Specific phobia	14.3 (0.87)	18.9 (1.80)	12.2 (0.92)*	17.3 (1.00)	12.0 (1.22)	25.2 (1.64)*
Generalized anxiety	22.1 (1.50)	35.6 (3.30)	16.2 (1.51)*	13.5 (0.97)	11.1 (1.18)	17.1 (1.54)*
Posttraumatic stress	18.6 (1.02)	28.8 (2.26)	14.2 (0.98)*	19.5 (1.03)	15.3 (1.27)	25.8 (1.68)*

*Prevalence for females significantly different from prevalence for males ($p < 0.01$).

Table 3

Co-occurrence Rates of Lifetime DSM-IV Narcissistic Personality Disorder and Axis I and II Lifetime Psychiatric Disorder by Sex

	Prevalence of Narcissistic Personality Disorder Among Respondents with Other Psychiatric Disorder			Prevalence of Other Psychiatric Disorder Among Respondents with Narcissistic Personality Disorder		
Psychiatric Disorder	**Total % (SE)**	**Men % (SE)**	**Women % (SE)**	**Total % (SE)**	**Men % (SE)**	**Women % (SE)**
Any substance use disorder	8.8 (0.34)	10.0 (0.45)	7.0 (0.41)*	64.2 (1.31)	73.5 (1.67)	50.5 (1.85)*
Any substance abuse	8.4 (0.38)	9.4 (0.52)	6.5 (0.52)*	35.7 (1.37)	44.1 (1.77)	23.3 (1.61)*
Any substance dependence	12.9 (0.60)	14.1 (0.75)	10.5 (0.82)*	33.9 (1.29)	40.8 (1.78)	23.7 (1.64)*
Any alcohol use disorder	9.1 (0.35)	10.1 (0.45)	7.2 (0.46)*	51.1 (1.40)	62.9 (1.71)	33.8 (1.69)*
Alcohol abuse	6.6 (0.36)	7.4 (0.50)	5.0 (0.45)*	20.5 (1.06)	25.6 (1.48)	12.9 (1.08)*
Alcohol dependence	12.4 (0.59)	13.6 (0.73)	10.1 (0.84)*	30.6 (1.23)	37.3 (1.73)	20.8 (1.56)*
Any drug use disorder	13.6 (0.66)	15.6 (0.88)	10.1 (1.01)*	26.5 (1.25)	32.5 (1.65)	17.5 (1.59)*
Any drug abuse	12.2 (0.67)	13.9 (0.90)	9.0 (1.06)*	20.0 (1.06)	25.0 (1.38)	12.7 (1.44)*
Any drug dependence	22.0 (1.59)	26.4 (2.14)	14.7 (1.95)*	12.0 (0.98)	15.0 (1.39)	7.5 (0.99)*
Nicotine dependence	9.6 (0.44)	11.6 (0.66)	7.2 (0.5)*	35.9 (1.35)	39.6 (1.80)	30.4 (1.85)*
Any mood disorder	11.9 (0.46)	16.8 (0.82)	8.9 (0.46)*	49.5 (1.37)	44.2 (1.76)	57.3 (1.77)*
Major depressive disorder	7.7 (0.41)	11.8 (0.84)	5.8 (0.40)*	20.6 (0.99)	17.3 (1.29)	25.5 (1.40)*
Dysthymia	7.5 (0.79)	10.4 (1.77)	6.1 (0.84)	4.2 (0.44)	3.2 (0.54)	5.6 (0.78)
Bipolar I	23.8 (1.28)	30.2 (2.18)	18.7 (1.36)*	20.1 (1.01)	19.1 (1.44)	21.5 (1.40)
Bipolar II	16.6 (1.72)	17.7 (3.09)	15.9 (2.07)	4.6 (0.52)	3.3 (0.66)	6.5 (0.86)*
Any anxiety disorder	11.5 (0.43)	16.6 (0.81)	8.7 (0.44)*	54.7 (1.36)	47.0 (2.00)	65.9 (1.92)*
Panic with agoraphobia	19.9 (2.15)	24.1 (5.10)	18.2 (2.20)	6.0 (0.70)	3.6 (0.89)	9.7 (1.17)*
Panic without agoraphobia	11.9 (0.87)	17.4 (1.84)	9.3 (0.89)*	11.3 (0.78)	9.0 (0.95)	14.8 (1.38)*
Social phobia	13.7 (0.85)	17.3(1.59)	11.1 (1.05)*	15.5 (1.01)	13.5 (1.26)	18.5 (1.70)
Specific phobia	11.2 (0.55)	15.3 (1.20)	9.2 (0.55)*	27.4 (1.26)	20.4 (1.64)	37.7 (1.94)*
Generalized anxiety	16.0 (0.90)	22.9 (1.91)	12.8 (0.93)*	19.8 (1.13)	14.9 (1.35)	27.1 (1.81)*
Posttraumatic stress	16.8 (0.84)	26.1 (1.82)	12.7 (0.81)*	25.7 (1.15)	20.2 (1.47)	33.8 (1.86)*
Any other personality disorder	20.2 (0.65)	23.0 (0.93)	17.4 (0.80)*	62.9 (1.33)	60.5 (1.78)	66.4 (1.90)
Any Cluster A	26.3 (1.05)	30.9 (1.62)	22.2 (1.24)*	38.3 (1.37)	35.8 (1.71)	42.0 (2.03)
Paranoid	21.8 (1.31)	27.9 (2.55)	17.5 (1.25)*	15.2 (1.02)	13.4 (1.32)	18.0 (1.37)
Schizoid	17.1 (1.40)	19.8 (2.42)	14.6 (1.59)	8.5 (0.73)	8.0 (1.03)	9.2 (1.04)

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Psychiatric Disorder	Prevalence of Narcissistic Personality Disorder Among Respondents with Other Psychiatric Disorder			Prevalence of Other Psychiatric Disorder Among Respondents with Narcissistic Personality Disorder		
	Total % (SE)	Men % (SE)	Women % (SE)	Total % (SE)	Men % (SE)	Women % (SE)
Schizotypal	43.2 (1.67)	46.7 (2.44)	39.5 (2.29)	27.5 (1.16)	25.8 (1.52)	30.0(1.76)
Any other Cluster B	28.2 (0.96)	29.6 (1.33)	26.4 (1.31)	44.9 (1.36)	43.6 (1.71)	46.8 (2.05)
Antisocial	18.9 (1.30)	18.7 (1.53)	19.8 (2.39)	11.8 (0.91)	14.4 (1.25)	7.9 (1.05)*
Borderline	38.9 (1.44)	47.0 (2.23)	32.2 (1.71)*	37.0 (1.29)	34.2 (1.63)	41.3 (2.01)*
Histrionic	32.4 (2.16)	41.2 (3.29)	23.9 (2.47)*	9.4 (0.82)	9.9 (1.13)	8.7 (1.00)
Any Cluster C	15.9 (0.78)	19.5 (1.31)	12.8 (0.91)*	24.3 (1.26)	23.2 (1.60)	25.9 (1.71)
Avoidant	18.4 (1.75)	22.5 (3.37)	15.8 (1.80)	6.9 (0.71)	5.6 (0.94)	8.9 (1.13)
Dependent	25.0 (4.39)	38.8 (8.59)	17.6 (4.08)	1.7 (0.40)	1.6 (0.58)	2.0 (0.47)
Obsessive-compulsive	16.3 (0.86)	20.1 (1.40)	12.7 (1.01)*	21.3 (1.22)	21.3 (1.56)	21.2 (1.60)

*Prevalence for females significantly different from prevalence for males ($p < 0.01$).

Table 4

Odds Ratios (OR) of Lifetime DSM-IV Narcissistic Personality Disorder and Axis I 12-Month Psychiatric Disorders by Sex

	Odds Ratios Controlled for Sociodemographic Characteristics			Odds Ratios Controlled for Sociodemographic Characteristics and Other Psychiatric Disorders		
Psychiatric Disorder	**Total OR (99% CI)**	**Men OR (99% CI)**	**Women OR (99% CI)**	**Total OR (99% CI)**	**Men OR (99% CI)**	**Women OR (99% CI)**
Any substance use disorder	**2.4** (2.03–2.75)	**2.4** (1.95–2.98)	**2.3** (1.85–2.94)	**1.5** (1.25–1.75)	**1.6** (1.30–2.05)	1.3 (1.00–1.66)
Any substance abuse	**1.8** (1.36–2.29)	**1.7** (1.23–2.33)	**2.0** (1.34–3.03)	**1.4** (1.09–1.86)	**1.4** (1.02–1.93)	1.5 (0.96–2.44)
Any substance dependence	**3.0** (2.41–3.77)	**3.3** (2.50–4.34)	**2.6** (1.77–3.74)	**1.5** (1.13–1.95)	**1.8** (1.27–2.41)	1.1 (0.69–1.74)
Any alcohol use disorder	**2.2** (1.77–2.67)	**2.3** (1.79–2.98)	**1.9** (1.33–2.64)	**1.4** (1.10–1.73)	**1.5** (1.17–2.01)	1.1 (0.70–1.63)
Alcohol abuse	**1.4** (1.03–1.87)	1.4 (0.99–1.97)	1.3 (0.81–2.15)	**1.4** (1.04–1.94)	**1.5** (1.04–2.12)	1.2 (0.65–2.25)
Alcohol dependence	**2.7** (2.15–3.45)	**3.0** (2.23–3.97)	**2.3** (1.50–3.46)	**1.4** (1.02–1.83)	**1.6** (1.14–2.27)	1.0 (0.59–1.69)
Any drug use disorder	**3.7** (2.76–5.02)	**3.6** (2.47–5.32)	**4.3** (2.59–6.99)	**1.5** (1.09–2.14)	**1.6** (1.02–2.35)	1.6 (0.92–2.86)
Any drug abuse	**2.6** (1.80–3.80)	**2.3** (1.46–3.67)	**3.8** (2.08–6.80)	1.2 (0.82–1.80)	1.1 (0.65–1.74)	1.8 (0.92–3.37)
Any drug dependence	**6.0** (3.75–9.72)	**7.4** (3.88–13.93)	**4.4** (2.07–9.50)	**1.9** (1.03–3.41)	**2.6** (1.23–5.52)	1.2 (0.47–2.89)
Nicotine dependence	**2.1** (1.81–2.51)	**2.1** (1.72–2.66)	**2.1** (1.64–2.79)	1.2 (0.99–1.47)	1.3 (1.02–1.70)	1.1 (0.81–1.48)
Any mood disorder	**4.1** (3.47–4.84)	**4.7** (3.57–6.01)	**3.6** (2.87–4.52)	**1.5** (1.24–1.85)	**1.6** (1.21–2.23)	**1.4** (1.08–1.84)
Major depressive disorder	**1.9** (1.53–2.41)	**2.4** (1.62–3.59)	**1.6** (1.21–2.12)	1.0 (0.74–1.29)	1.1 (0.68–1.74)	0.9 (0.64–1.25)
Dysthymia	**3.0** (2.00–4.36)	**3.5** (1.79–6.93)	**2.5** (1.50–4.24)	0.8 (0.48–1.22)	0.9 (0.40–2.16)	0.6 (0.35–1.17)
Bipolar I	**7.2** (5.69–9.13)	**8.4** (5.68–12.47)	**6.3** (4.66–8.59)	**2.3** (1.72–2.93)	**2.6** (1.67–4.04)	**2.0** (1.42–2.78)
Bipolar II	**3.8** (2.41–5.88)	**3.5** (1.54–8.04)	**3.9** (2.23–6.94)	1.6 (1.00–2.55)	1.2 (0.53–2.87)	**1.9** (1.07–3.51)
Any anxiety disorder	**4.3** (3.66–4.96)	**4.4** (3.51–5.62)	**4.1** (3.34–4.91)	**2.0** (1.67–2.45)	**2.1** (1.58–2.79)	**1.9** (1.54–2.44)
Panic with agoraphobia	**5.1** (3.20–8.11)	**3.7** (1.68–8.12)	**6.1** (3.55–10.43)	1.1 (0.66–1.83)	**0.6** (0.26–1.50)	1.5 (0.79–2.71)
Panic without agoraphobia	**2.8** (1.96–4.04)	**3.3** (1.86–5.84)	**2.4** (1.49–3.95)	1.0 (0.68–1.57)	1.1 (0.54–2.18)	1.0 (0.54–1.74)
Social phobia	**4.2** (3.12–5.52)	**3.8** (2.43–5.86)	**4.6** (3.02–6.93)	1.1 (0.79–1.45)	0.9 (0.56–1.52)	1.2 (0.79–1.91)
Specific phobia	**3.0** (2.47–3.69)	**2.9** (2.05–4.01)	**3.1** (2.45–4.02)	**1.5** (1.15–1.88)	1.3 (0.83–1.99)	**1.6** (1.23–2.19)
Generalized anxiety	**5.3** (4.15–6.78)	**6.7** (4.49–9.91)	**4.6** (3.37–6.39)	**1.7** (1.27–2.32)	**2.1** (1.25–3.35)	**1.6** (1.09–2.23)
Posttraumatic stress	**4.3** (3.53–5.32)	**5.1** (3.76–7.01)	**3.9** (3.04–4.94)	**1.7** (1.30–2.11)	**2.0** (1.39–2.82)	**1.5** (1.09–1.95)

Note: Estimates in **boldface** are statistically significant ($p < 0.01$).

Table 5

Odds Ratios (OR) of Lifetime DSM-IV Narcissistic Personality Disorder and Lifetime Axis I and II Psychiatric Disorders by Sex

	Odds Ratios Controlled for Sociodemographic Characteristics			Odds Ratios Controlled for Sociodemographic Characteristics and Other Psychiatric Disorders		
Psychiatric Disorder	**Total OR (99% CI)**	**Men OR (99% CI)**	**Women OR (99% CI)**	**Total OR (99% CI)**	**Men OR (99% CI)**	**Women OR (99% CI)**
Any substance use disorder	**2.1** (1.82–2.48)	**2.2** (1.70–2.81)	**2.1** (1.71–2.56)	**1.3** (1.10–1.53)	**1.4** (1.10–1.83)	1.2 (0.94–1.46)
Any substance abuse	**1.5** (1.26–1.76)	**1.5** (1.18–1.80)	**1.5** (1.21–1.97)	1.1 (0.93–1.32)	1.1 (0.92–1.42)	1.1 (0.82–1.36)
Any substance dependence	**2.4** (2.03–2.78)	**2.4** (1.91–2.88)	**2.5** (1.91–3.24)	1.2 (0.99–1.45)	1.3 (0.99–1.60)	1.2 (0.83–1.61)
Any alcohol use disorder	**1.9** (1.62–2.20)	**1.9** (1.54–2.36)	**1.9** (1.50–2.30)	1.1 (0.92–1.34)	1.2 (0.90–1.47)	1.1 (0.80–1.41)
Alcohol abuse	1.1 (0.89–1.26)	1.0 (0.82–1.26)	1.1 (0.86–1.46)	1.1 (0.90–1.37)	1.2 (0.89–1.52)	1.0 (0.74–1.37)
Alcohol dependence	**2.2** (1.86–2.57)	**2.2** (1.74–2.65)	**2.3** (1.76–3.08)	1.1 (0.88–1.40)	1.1 (0.85–1.54)	1.1 (0.77–1.65)
Any drug use disorder	**2.4** (2.03–2.82)	**2.5** (2.02–3.05)	**2.3** (1.65–3.10)	1.2 (0.94–1.40)	1.2 (0.95–1.58)	1.0 (0.71–1.51)
Any drug abuse	**2.0** (1.63–2.36)	**2.0** (1.57–2.47)	**2.0** (1.36–2.83)	1.0 (0.84–1.26)	1.0 (0.78–1.33)	1.1 (0.71–1.58)
Any drug dependence	**3.7** (2.84–4.77)	**4.1** (3.04–5.62)	**3.0** (1.96–4.51)	1.3 (0.97–1.83)	**1.6** (1.11–2.38)	0.9 (0.57–1.50)
Nicotine dependence	**1.9** (1.60–2.13)	**1.9** (1.53–2.28)	1.8 (1.46–2.30)	1.1 (0.88–1.26)	1.1 (0.87–1.41)	1.0 (0.76–1.28)
Any mood disorder	**3.2** (2.77–3.76)	**3.3** (2.64–4.03)	**3.2** (2.63–3.85)	**1.3** (1.07–1.51)	**1.3** (1.03–1.68)	1.2 (0.97–1.59)
Major depressive disorder	**1.5** (1.26–1.76)	**1.7** (1.28–2.12)	**1.4** (1.10–1.67)	0.9 (0.75–1.07)	1.0 (0.72–1.27)	0.8 (0.65–1.07)
Dysthymia	1.3 (0.98–1.82)	1.3 (0.80–2.26)	1.4 (0.90–2.05)	**0.6** (0.41–0.78)	**0.6** (0.32–0.98)	**0.6** (0.38–0.91)
Bipolar I	**5.2** (4.24–6.27)	**5.4** (3.98–7.37)	**4.9** (3.81–6.40)	**1.9** (1.47–2.34)	**2.0** (1.39–2.82)	**1.8** (1.28–2.45)
Bipolar II	**2.6** (1.81–3.62)	**2.0** (1.10–3.74)	**3.1** (2.04–4.70)	1.3 (0.91–1.93)	1.0 (0.55–1.93)	**1.7** (1.03–2.64)
Any anxiety disorder	**3.6** (3.08–4.14)	**3.5** (2.82–4.35)	**3.6** (2.93–4.49)	**1.7** (1.43–2.04)	**1.7** (1.35–2.22)	**1.7** (1.30–2.14)
Panic with agoraphobia	**4.2** (2.93–6.14)	**3.6** (1.69–7.51)	**4.9** (3.26–7.25)	1.3 (0.85–1.94)	1.0 (0.42–2.22)	1.5 (0.97–2.38)
Panic without agoraphobia	**2.4** (1.95–3.05)	**2.7** (1.90–3.71)	**2.3** (1.68–3.12)	1.1 (0.84–1.40)	1.1 (0.76–1.67)	1.1 (0.75–1.51)
Social phobia	**2.8** (2.24–3.37)	**2.6** (1.94–3.58)	**2.9** (2.15–3.94)	0.9 (0.72–1.12)	0.9 (0.63–1.24)	0.9 (0.68–1.26)
Specific phobia	**2.5** (2.07–2.91)	**2.3** (1.77–3.09)	**2.6** (2.09–3.16)	1.2 (0.98–1.46)	1.1 (0.80–1.56)	1.3 (1.01–1.61)
Generalized anxiety	**3.8** (3.15–4.64)	**3.8** (2.84–5.20)	**3.9** (3.04–5.10)	**1.4** (1.11–1.74)	1.4 (0.97–1.92)	**1.4** (1.05–1.94)
Posttraumatic stress	**4.2** (3.43–5.04)	**4.8** (3.64–6.34)	**3.7** (2.96–4.72)	**1.9** (1.53–2.36)	**2.2** (1.63–3.07)	**1.7** (1.30–2.15)
Any other personality disorder	**8.0** (6.87–9.42)	**7.1** (5.71–8.84)	**9.6** (7.60–12.03)	**5.5** (4.66–6.55)	**4.8** (3.85–5.95)	**6.7** (5.20–8.74)
Any Cluster A	**7.2** (6.06–8.65)	**6.9** (5.42–8.80)	**7.6** (5.92–9.68)	**2.7** (2.18–3.43)	**2.7** (2.01–3.64)	**2.7** (1.94–3.76)
Paranoid	**4.1** (3.16–5.30)	**4.3** (2.93–6.43)	**3.8** (2.84–5.10)	1.2 (0.91–1.57)	1.4 (0.91–2.08)	1.0 (0.72–1.42)
Schizoid	**2.9** (2.17–3.79)	**2.8** (1.84–4.32)	**2.9** (1.94–4.27)	0.9 (0.64–1.16)	0.9 (0.55–1.37)	0.8 (0.55–1.26)
Schizotypal	**13.7** (11.29–16.71)	**12.1** (9.16–16.00)	**15.9** (12.11–20.98)	**5.5** (4.38–6.88)	**5.2** (3.71–7.16)	**5.9** (4.35–8.03)

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Psychiatric Disorder	Odds Ratios Controlled for Sociodemographic Characteristics			Odds Ratios Controlled for Sociodemographic Characteristics and Other Psychiatric Disorders		
	Total OR (99% CI)	Men OR (99% CI)	Women OR (99% CI)	Total OR (99% CI)	Men OR (99% CI)	Women OR (99% CI)
Any other Cluster B	**9.2** (7.78–10.79)	**7.7** (6.11–9.66)	**12.0** (9.48–15.09)	**4.2** (3.42–5.15)	**3.5** (2.67–4.61)	**5.5** (4.13–7.43)
Antisocial	**3.0** (2.30–3.92)	**2.7** (1.99–3.69)	**4.0** (2.53–6.16)	1.2 (0.90–1.61)	1.1 (0.80–1.55)	1.5 (0.93–2.36)
Borderline	**14.5** (12.15–17.40)	**14.6** (11.05–19.21)	**15.3** (11.92–19.52)	**6.8** (5.52–8.47)	**7.0** (5.10–9.73)	**7.0** (5.18–9.43)
Histrionic	**6.6** (4.91–8.81)	**7.7** (5.19–11.28)	**5.4** (3.48–8.26)	**2.1** (1.51–2.80)	**2.5** (1.66–3.72)	1.6 (1.01–2.59)
Any Cluster C	**3.5** (2.88–4.24)	**3.4** (2.63–4.51)	**3.6** (2.75–4.65)	1.2 (0.92–1.51)	1.2 (0.88–1.71)	1.1 (0.79–1.65)
Avoidant	**3.5** (2.50–4.78)	**3.2** (1.90–5.46)	**3.8** (2.57–5.67)	0.9 (0.66–1.29)	0.9 (0.51–1.55)	1.0 (0.64–1.49)
Dependent	**5.0** (2.66–9.29)	**6.4** (2.44–16.66)	**4.1** (1.82–9.13)	1.2 (0.61–2.26)	1.5 (0.54–4.11)	0.9 (0.41–2.06)
Obsessive–compulsive	**3.5** (2.86–4.35)	**3.6** (2.70–4.77)	**3.5** (2.58–4.62)	**1.4** (1.07–1.77)	**1.5** (1.08–2.08)	1.2 (0.88–1.76)

Note: Estimates in **boldface** are statistically significant ($p < 0.01$).

Table 6

Associations* Between Lifetime Narcisstic Personality Disorder and Mental and Physical Disability

	Total		Men		Women	
SF12-v2 Score	**$\bar{x}$ (SE)**	**β (SE)**	**$\bar{x}$ (SE)**	**β**	**$\bar{x}$ (SE)**	**β**
Mental disability						
Social functioning	47.7 (0.29)	−0.26 (0.29)	48.9 (0.38)	−0.45 (0.41)	46.0 (0.45)	−0.13 (0.45)
Role emotional functioning	45.6 (0.30)	−0.65 (0.30)[a]	46.8 (0.41)	−0.92 (0.46)[a]	43.9 (0.44)	−0.43 (0.43)
Mental health	47.1 (0.31)	−0.68 (0.29) [a]	48.5 (0.39)	−0.86 (0.40) [a]	45.2 (0.45)	−0.56 (0.45)

*Multiple linear regression analyses controlled for all sociodemographic characteristics and other Axis I and II psychiatric disorders.

[a] $p < 0.05$.