Prevalence and Association of Defense Mechanisms With Common Psychiatric Disorders:

A National Study

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Abstract

Objective: Although defense mechanisms are central concepts in psychiatry, whether individual disorders (or categories of disorders) are associated with a specific profile of defense mechanisms or whether defense mechanisms are general markers of severity of psychopathology is unknown.

Methods: We drew on data from the National Epidemiological Survey on Alcohol and Related Conditions (N = 43,093) to investigate associations of 12 pathological defense mechanisms with mood, anxiety, and substance use disorders. Logistic regressions were fit with mental disorders as predictors, defense mechanisms as outcomes, and respondent age, sex, and race/ethnicity as covariates.

Results: Compared to individuals with no disorders, those with mood, anxiety, or substance use disorders generally had a higher prevalence of defense mechanisms. Specifically, the prevalence of any pathological mechanism was 30.0% (95% CI, 29.4%–30.7%) for individuals with no disorders, 67.6% (95% CI, 65.9%–69.2%) for individuals with mood disorders, 62.8% (95% CI, 61.3%–64.2%) for individuals with anxiety disorders, and 49.8% (95% CI, 48.7%–51.0%) for individuals with substance use disorders. Broad diagnostic categories or individual psychiatric disorders were not associated with specific defense profiles.

Conclusion: Our findings suggest that defense mechanisms and psychiatric disorders represent correlated but different dimensions of psychopathology, which may respond to different treatment approaches.

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Defense mechanisms, which can be defined as an individual's automatic psychological responses to internal or external stressors or emotional conflict,[1] are central concepts in psychoanalysis, psychodynamic psychiatry, and psychology. Defense mechanisms are generally considered an aspect of personality functioning or style and thus different from Axis I disorders.

Based on work in clinical samples and longitudinal studies, defense mechanisms are often organized in 4 levels[2]: pathological, immature, neurotic, and adaptive. Pathological defense mechanisms, which are considered the least adaptive, involve gross distortion of reality.[3,4] At the next level are immature defenses, which distort interpersonal reality and tend to be most prominent in personality disorders.[5] Neurotic defense mechanisms are less maladaptive than pathological and immature ones, but they can still lead to psychological distress when used inflexibly or with rigidity. Mature defenses, which are the most adaptive, are strategies for coping that are more often used flexibly and sometimes consciously. In the context of dimensional models of personality, in which personality disorders are dysfunctional extremes of normally distributed traits,[6,7] this hierarchy of defense mechanisms can also provide indications of personality disorder severity.

Although most work on defense mechanisms has focused on clinical samples, we recently examined the prevalence and correlates of 12 defense mechanisms in a large representative sample of US adults.[8] The analysis found that neurotic, immature, and pathological defense mechanisms are common in the general population, including among individuals with no psychiatric disorders, and that they are associated with lower

Clinical Points

- Defense mechanisms are central in psychiatry, but whether they are associated with specific disorders has not been studied in large generalizable samples.
- Defense mechanisms are not associated with specific disorders.
- Defense mechanisms and psychiatric disorders represent different aspects of psychopathology that may respond to different treatments.

psychosocial functioning particularly when they are ego-dystonic. Pathological and immature defenses were associated with younger age, having been never married, lower educational attainment, and lower income. Pathological defenses were also more strongly associated with immature defenses than neurotic defenses.

Because personality subtypes, personality disorders, and defense mechanisms can predict treatment outcome and influence treatment approaches,[9–13] a better understanding of the relationship between defense mechanisms and common psychiatric disorders could help inform clinical care. For example, a depressed individual with frequent use of projection might distrust whether treatment decisions (such as changes in medication or frequency of visits) are for his benefit, whereas splitting is well-known to present challenges for split treatment. By contrast, a depressed patient who uses affect isolation might have more difficulty engaging in treatment or verbalizing his or her feelings, while a patient with obsessive/controlling behavior might more readily become dissatisfied with the speed or extent of treatment improvement and become overly self-critical.

Several studies in clinical samples have sought to elucidate whether individual psychiatric disorders (or categories of disorders) are associated with specific profiles of defense mechanisms. A study of 167 psychiatric patients and 36 controls found that neurotic defense mechanisms discriminated all psychiatric patients, except those with social anxiety, from healthy controls. Immature defense mechanisms also differentiated all psychiatric patients from controls and distinguished patients with depression from those with panic disorder or obsessive-compulsive disorder.[14] A second study compared 30 individuals with depressive disorders to 30 with anxiety disorders and 30 without lifetime history of psychiatric disorders. In this study, individuals with depressive disorders were more likely than those with anxiety disorders to use immature defense mechanisms.[15] By contrast, Bond and Vaillant found in a sample of 74 psychiatric patients that *DSM-III* diagnosis did not predict the defense mechanisms patients used and concluded that diagnosis and defense mechanisms are independent dimensions.[16] A study assessing use of immature defenses showed that impairments in defensive structure had the strongest association with clinical severity, including number of suicide attempts, number of psychiatric hospital stays, and severity of *ICD-10* diagnosis.[17]

Previous studies in this area have been conducted in clinical samples. As a result, their results may not extend to the general population. We are not aware of studies that have examined these questions in a nationally representative sample of adults. Thus, we sought to build on previous research by examining associations between defense mechanisms and psychiatric disorders in the National Epidemiological Survey on Alcohol and Related Conditions (NESARC), a large, nationally representative sample of US adults. Based on previous studies and clinical experience, we hypothesized that (1) individuals with psychiatric disorders would endorse a greater number of defense mechanisms than those without psychiatric disorders and (2) individuals with mood disorders would endorse greater number of defense mechanisms than those with anxiety disorders. No a priori hypotheses were made regarding whether adults with substance use disorders would have higher or lower prevalence of defense mechanisms than those with mood and anxiety disorders.

METHODS

Sample

The 2001–2002 NESARC (Wave 1) and the 2004–2005 follow-up (Wave 2) were a nationally representative sample of the noninstitutionalized adult US population conducted by the US Census Bureau, under the direction of the National Institute on Alcoholism and Alcohol Abuse, as described elsewhere.[18] The Wave 1 response rate was 81.0%. Excluding ineligible respondents (eg, deceased), the Wave 2 response rate was 86.7%, resulting in a cumulative response rate of 70.2% (n = 34,653). Wave 2 NESARC weights include a component that adjusts for nonresponse, demographic characteristics and psychiatric diagnoses, to ensure that the Wave 2 sample approximated the target population, that is, the original sample minus attrition between the two waves.[18]

Assessment

Psychiatric disorders were assessed using the Alcohol Use Disorder and Associated Disabilities Interview Schedule, *DSM-IV* version (AUDADIS-IV), a valid and reliable structured diagnostic instrument.[19–21] Current (ie, last 12 month) Axis I diagnoses included substance use disorders (alcohol abuse, alcohol dependence, drug abuse, and drug dependence), mood disorders (major depressive disorder, dysthymic disorder, and bipolar disorder), and anxiety disorders (panic disorder, social

anxiety disorder [SAD], specific phobia, and generalized anxiety disorder [GAD]). Consistent with our prior analysis,[8] we used 12 defense mechanisms assessed by items in the AUDADIS-IV to assess underlying defensive operations (published in reference #2 and available on request from the first author). The items that approximate 12 defense mechanisms were classified in 3 adaptive levels based on system developed by Vaillant[2] and informed by the *DSM-IV* Defensive Functioning Scale[22]: pathological (psychotic distortion and delusional projection), immature (autistic fantasy, projection, withdrawal, acting out, splitting, idealization, devaluation, and omnipotence), and neurotic (isolation of affect and obsessive/controlling behavior). As expected, since items were extracted from the interview section of personality disorders, no mature defense mechanisms were assessed in the survey.

Statistical Analyses

Weighted prevalence of pathological, immature, and neurotic defense mechanisms was estimated for the overall NESARC Wave 2 sample. To examine the strength of association between psychiatric disorders and defense mechanisms accounting for baseline sociodemographic characteristics, we estimated the odds ratios (ORs) of endorsing a defense mechanism when adjusting for age, sex, and race/ethnicity. Logistic regression models were fit with mental disorder as the independent variable of interest, defense mechanism as the dependent variable, and respondent age, sex, and race/ethnicity as covariates. All covariates were entered simultaneously in the logistic regression, since the goal was to adjust for potential baseline differences among groups, rather than to develop a predictive model.

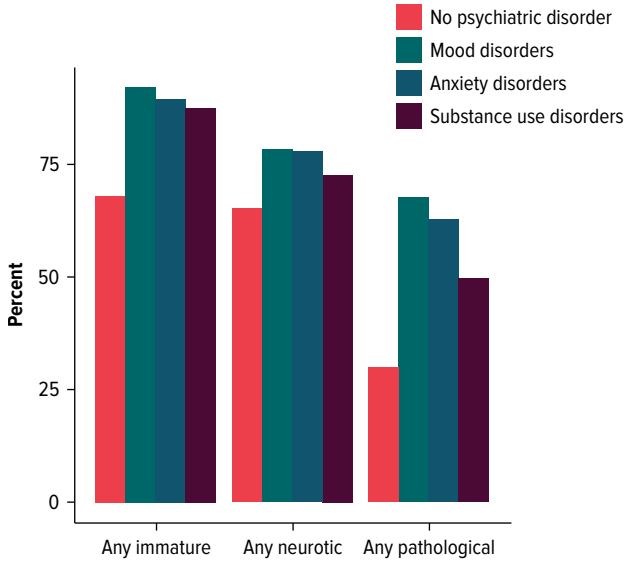
To present a more detailed picture that could inform clinical practice, we first estimated the ORs by broad diagnostic categories (mood disorders, anxiety disorders, and substance use disorders compared to no disorder [reference]), followed by individual disorders within those categories. This approach allows to examine patterns of large diagnostic groups as well as to examine differences across disorders within the same group. We consider 2 ORs to be statistically significant when their 95% confidence intervals (95% CIs) do not overlap. All analyses were conducted with SUDAAN to account for the complex sampling design, including clustering of observations and use of statistical weights.

RESULTS

When considering the broad diagnostic categories (no disorder, mood disorders, anxiety disorder, substance use disorders), individuals with mood disorders generally had greater prevalence of defense mechanisms than those with anxiety disorders who, in turn, had greater prevalence of all categories defense mechanisms than those with substance use disorders. Individuals with no psychiatric disorders had the lowest prevalence for all categories defense mechanisms. Specifically, the prevalence of any pathological mechanism was 30.0% (95% CI, 29.4%–30.7%) for individuals with no disorders, 67.6% (95% CI, 65.9%–69.2%) for individuals with mood disorders, 62.8% (95% CI, 61.3%–64.2%) for individuals with anxiety disorders, and 49.8% (95% CI, 48.7%–51.0%) for substance use disorders. The prevalence of any neurotic mechanism was 65.3% (64.6%–65.9%) for individuals with no disorders, 78.4% (95% CI, 76.8%–80.1%) for individuals with mood disorders, 78.1% (95% CI, 76.6%–79.5%) for individuals with anxiety disorders, and 72.6% (95% CI=, 71.4%–73.8%) for substance use disorders. The prevalence of any immature mechanism was 68.1% (95% CI, 67.4%–68.7%) for individuals with no disorders, 92.3% (95% CI, 90.6%–93.9%) for individuals with mood disorders, 89.3% (95% CI, 87.8%–90.7%) for individuals with anxiety disorders, and 87.9% (95% CI, 86.7%–89.1%) for individuals with substance use disorders (Figure 1).

Figure 1.

Prevalence of Broad Classes of Defense Mechanisms (Immature, Neurotic, and Pathological) by Whether a Person has a Psychiatric Disorder Including Mood, Anxiety, and Substance Use Disorders



A similar pattern emerged when adjusting for sociodemographic characteristics. Defense mechanisms were generally more strongly associated with mood disorders than with anxiety disorders, although that difference did not reach statistical significance for

Table 1.

Odds Ratios (ORs) of Defense Mechanism in the NESARC by Disorder Category Adjusting for Age, Sex, and Race

Defense mechanism	Number of individuals endorsing mechanism (weighted %)	Disorder		
		Mood disorders OR (95% CI)	Anxiety disorders OR (95% CI)	Substance use disorders OR (95% CI)
Any pathological	13,968 (38.11)	3.76 (3.61–3.91)	3.15 (3.02–3.29)	1.86 (1.80–1.93)
Psychotic distortion	8,961 (24.73)	2.32 (2.23–2.42)	2.33 (2.25–2.42)	1.59 (1.52–1.66)
Delusional projection	9,637 (25.35)	4.66 (4.47–4.85)	3.56 (3.41–3.72)	2.09 (2.00–2.17)
Any immature	26,711 (75.67)	4.34 (4.05–4.65)	3.13 (2.92–3.36)	2.49 (2.35–2.63)
Autistic fantasy	7,615 (19.74)	2.25 (2.14–2.37)	1.71 (1.64–1.80)	1.87 (1.81–1.95)
Projection	13,073 (34.22)	2.57 (2.48–2.67)	2.28 (2.21–2.36)	1.79 (1.72–1.87)
Withdrawal	6,936 (18.98)	2.56 (2.45–2.68)	2.10 (2.01–2.20)	1.38 (1.32–1.44)
Acting out	9,996 (27.96)	2.84 (2.70–2.98)	2.19 (2.11–2.27)	2.60 (2.50–2.70)
Splitting	8,089 (21.59)	4.85 (4.61–5.10)	3.55 (3.40–3.71)	2.56 (2.48–2.65)
Idealization	13,184 (36.24)	1.93 (1.85–2.02)	1.90 (1.82–1.98)	1.66 (1.60–1.72)
Devaluation	6,637 (17.33)	2.23 (2.13–2.33)	2.00 (1.91–2.10)	1.84 (1.76–1.91)
Omnipotence	12,650 (35.00)	1.93 (1.85–2.02)	1.90 (1.82–1.98)	1.69 (1.64–1.74)
Any neurotic	23,432 (69.47)	1.77 (1.67–1.88)	1.75 (1.67–1.84)	1.25 (1.20–1.31)
Affect isolation	12,686 (36.03)	2.07 (1.98–2.17)	1.81 (1.74–1.88)	1.65 (1.59–1.71)
Obsessive/controlling behavior	18,293 (55.16)	1.31 (1.26–1.37)	1.37 (1.31–1.43)	0.99 (0.95–1.02)

Abbreviation: NESARC = National Epidemiological Survey on Alcohol and Related Conditions.

idealization, omnipotence, and obsessive/controlling behavior. Furthermore, the ORs for psychotic distortion were numerically, although not significantly, greater for anxiety than for mood disorders. Anxiety disorders, in turn, were significantly more strongly associated with all mechanisms of defense than substance use disorders. The only two exceptions to this pattern were acting out, which was significantly more strongly associated with substance use disorders than with anxiety disorders, and autistic fantasy was numerically but not significantly more strongly associated with substance use disorders (Table 1).

When looking at specific disorders within diagnostic categories, among mood disorders, bipolar disorder was significantly more strongly associated than dysthymic disorder with all defense mechanisms except for affect isolation and obsessive/controlling behavior for which there were no significant differences. The ORs for dysthymic disorder were numerically higher than for major depressive disorder for defense mechanisms. However, the differences only achieved significance for any pathological defense mechanism and for withdrawal. In addition, the OR for autistic fantasy was significantly greater for major depressive disorder, and the OR for omnipotence was numerically, but not statistically greater for major depressive disorder than for dysthymic disorder (Table 2).

Among anxiety disorders, specific phobia had smaller ORs than panic disorder, GAD, and SAD for all defense mechanisms. The only exceptions to this pattern were the omnipotence and obsessive/controlling behavior, whose ORs did not significantly differ between specific phobia and panic disorder. Differences in the magnitude of ORs among panic disorder, GAD, and SAD were smaller. In general, panic disorder had numerically smaller ORs than GAD, which in turn had numerically smaller ORs than GAD, but those differences rarely reached statistical significance. There were some exceptions to this pattern: SAD had significantly greater ORs of any immature defense mechanism, withdrawal, any neurotic, and affect isolation than both panic disorder and GAD; SAD had significantly greater OR of acting out than GAD (but not panic disorder); SAD had greater OR of delusional projection, than panic disorder, but not SAD; SAD and GAD had greater OR of projection than panic disorder; GAD had significantly greater OR of autistic fantasy than panic disorder and SAD; GAD had significantly greater OR of idealization than SAD, but not panic disorder; GAD also had numerically (but not significantly) greater OR of omnipotence than SAD, but not panic disorder. Panic disorder had numerically greater OR of psychotic distortion, acting out, devaluation, and affect isolation than GAD but not SAD (Table 3).

Consistent with findings in mood and anxiety disorders, substance use disorders showed a pattern of ordering effects. The OR for most defense mechanisms tended to be greater for drug dependence, followed by drug abuse, alcohol dependence, and alcohol abuse. As for mood and anxiety disorders, there were some exceptions to this pattern. The ORs for drug abuse were only significantly greater than for alcohol dependence for psychotic distortion, and acting out, whereas the ORs for alcohol dependence were significantly greater for projection and withdrawal. The ORs between drug abuse and drug dependence were not significantly different for psychotic distortion, any immature mechanism, and any

Table 2.

Odds Ratios (ORs) of Defense Mechanism Among Individuals With Mood Disorders Adjusting for Age, Sex, and Race

Defense mechanism	Number of individuals endorsing mechanism (weighted %)	Disorder		
		Bipolar disorder OR (95% CI)	Dysthymic disorder OR (95% CI)	Major depressive disorder OR (95% CI)
Any pathological	13,968 (38.11)	6.41 (5.88–6.98)	3.15 (2.72–3.65)	2.51 (2.39–2.63)
Psychotic distortion	8,961 (24.73)	3.21 (2.98–3.45)	1.89 (1.67–2.13)	1.68 (1.60–1.77)
Delusional projection	9,637 (25.35)	7.51 (7.03–8.03)	3.41 (2.97–3.91)	2.95 (2.80–3.10)
Any immature	26,711 (75.67)	11.87 (9.23–15.28)	3.01 (2.48–3.66)	3.00 (2.78–3.23)
Autistic fantasy	7,615 (19.74)	2.67 (2.45–2.90)	1.21 (1.03–1.43)	1.81 (1.71–1.92)
Projection	13,073 (34.22)	4.13 (3.87–4.40)	2.11 (1.83–2.44)	1.76 (1.68–1.85)
Withdrawal	6,936 (18.98)	3.39 (3.16–3.63)	2.45 (2.10–2.86)	1.86 (1.75–1.97)
Acting out	9,996 (27.96)	4.26 (3.96–4.59)	2.35 (2.01–2.76)	1.95 (1.84–2.06)
Splitting	8,089 (21.59)	7.45 (6.79–8.18)	3.25 (2.83–3.73)	3.04 (2.87–3.23)
Idealization	13,184 (36.24)	2.74 (2.55–2.95)	1.60 (1.39–1.84)	1.47 (1.40–1.54)
Devaluation	6,637 (17.33)	3.30 (3.07–3.54)	1.80 (1.54–2.10)	1.49 (1.41–1.58)
Omnipotence	12,650 (35.00)	2.70 (2.49–2.92)	1.35 (1.17–1.57)	1.47 (1.39–1.55)
Any neurotic	23,432 (69.47)	2.32 (2.08–2.57)	1.69 (1.46–1.96)	1.46 (1.38–1.54)
Affect isolation	12,686 (36.03)	2.75 (2.57–2.94)	2.33 (2.03–2.67)	1.58 (1.49–1.67)
Obsessive/controlling behavior	18,293 (55.16)	1.52 (1.40–1.64)	1.51 (1.31–1.73)	1.16 (1.11–1.21)

Table 3.

Odds Ratios (ORs) of Defense Mechanism Among Individuals With Anxiety Disorders Adjusting for Age, Sex, and Race

Defense mechanism	Number of individuals endorsing mechanism (weighted %)	Disorder			
		Specific phobia OR (95% CI)	Panic disorder OR (95% CI)	GAD OR (95% CI)	Social anxiety disorder OR (95% CI)
Any pathological	13,968 (38.11)	2.41 (2.31–2.51)	4.19 (3.85–4.57)	4.81 (4.47–5.18)	4.83 (4.46–5.22)
Psychotic distortion	8,961 (24.73)	2.04 (1.96–2.13)	2.76 (2.55–2.98)	2.57 (2.37–2.79)	2.77 (2.56–2.99)
Delusional projection	9,637 (25.35)	2.55 (2.42–2.69)	4.67 (4.28–5.10)	5.39 (5.05–5.75)	5.96 (5.51–6.46)
Any immature	26,711 (75.67)	2.48 (2.27–2.71)	4.48 (3.77–5.31)	4.82 (4.15–5.60)	11.30 (9.13–13.99)
Autistic fantasy	7,615 (19.74)	1.53 (1.44–1.63)	1.83 (1.69–1.98)	2.20 (2.03–2.38)	1.79 (1.66–1.94)
Projection	13,073 (34.22)	1.95 (1.85–2.05)	2.46 (2.25–2.69)	2.90 (2.71–3.09)	3.00 (2.76–3.26)
Withdrawal	6,936 (18.98)	1.70 (1.61–1.80)	2.22 (2.04–2.42)	2.52 (2.36–2.70)	4.45 (4.17–4.75)
Acting out	9,996 (27.96)	1.81 (1.73–1.90)	2.98 (2.75–3.22)	2.68 (2.51–2.86)	3.47 (3.20–3.75)
Splitting	8,089 (21.59)	2.66 (2.55–2.78)	4.80 (4.39–5.24)	5.20 (4.79–5.66)	5.18 (4.79–5.59)
Idealization	13,184 (36.24)	1.78 (1.70–1.87)	2.23 (2.01–2.46)	2.39 (2.23–2.56)	1.96 (1.82–2.12)
Devaluation	6,637 (17.33)	1.79 (1.70–1.89)	2.40 (2.19–2.63)	2.30 (2.14–2.47)	2.69 (2.46–2.93)
Omnipotence	12,650 (35.00)	1.74 (1.66–1.83)	1.98 (1.82–2.15)	2.31 (2.16–2.47)	2.07 (1.91–2.25)
Any neurotic	23,432 (69.47)	1.51 (1.42–1.61)	2.08 (1.83–2.36)	2.25 (1.93–2.62)	3.02 (2.70–3.37)
Affect isolation	12,686 (36.03)	1.62 (1.53–1.71)	2.18 (1.99–2.38)	2.09 (1.94–2.26)	3.22 (2.97–3.48)
Obsessive/controlling behavior	18,293 (55.16)	1.28 (1.21–1.35)	1.47 (1.34–1.61)	1.55 (1.41–1.71)	1.55 (1.44–1.67)

Abbreviation: GAD = generalized anxiety disorder.

neurotic defense mechanism and were numerically (but not statistically greater) for obsessive/controlling behavior for obsessive/controlling behavior (Table 4).

DISCUSSION

In a large, nationally representative sample of US adults, the prevalence of pathological defense mechanisms varied by diagnostic category. Furthermore, broad diagnostic categories or individual psychiatric disorders were not associated with specific profiles of defenses. With few exceptions, there was a general pattern in which disorders could be ordered by the prevalence of the defense mechanisms.

Individuals with no psychiatric disorders had the lowest prevalence of all defense mechanisms. Our findings are consistent with clinical experience and studies in clinical samples indicating that use of pathological, immature, and neurotic defenses is associated with

Table 4.

Odds Ratios (ORs) of Defense Mechanism Conditions Among Individuals With Substance Disorders Adjusting for Age, Sex, and Race

Defense mechanism	Number of individuals endorsing mechanism (weighted %)	Disorder			
		Alcohol abuse OR (95% CI)	Alcohol dependence OR (95% CI)	Drug abuse OR (95% CI)	Drug dependence OR (95% CI)
Any pathological	13,968 (38.11)	1.08 (1.01–1.15)	2.56 (2.39–2.75)	2.80 (2.49–3.15)	7.73 (6.52–9.17)
Psychotic distortion	8,961 (24.73)	1.00 (0.93–1.09)	1.89 (1.76–2.02)	2.72 (2.46–3.02)	3.22 (2.84–3.64)
Delusional projection	9,637 (25.35)	1.13 (1.05–1.21)	2.89 (2.71–3.08)	3.04 (2.72–3.39)	7.18 (6.18–8.36)
Any immature	26,711 (75.67)	1.69 (1.56–1.84)	4.91 (4.20–5.73)	4.56 (3.73–5.56)	5.81 (3.23–10.46)
Autistic fantasy	7,615 (19.74)	1.49 (1.41–1.59)	2.61 (2.43–2.81)	2.53 (2.31–2.77)	3.35 (2.83–3.95)
Projection	13,073 (34.22)	1.19 (1.12–1.27)	1.99 (1.85–2.14)	1.67 (1.51–1.84)	3.72 (3.28–4.22)
Withdrawal	6,936 (18.98)	0.75 (0.68–0.82)	1.60 (1.49–1.73)	1.09 (0.98–1.23)	2.66 (2.25–3.16)
Acting out	9,996 (27.96)	1.83 (1.72–1.94)	3.57 (3.35–3.81)	4.32 (3.82–4.90)	8.53 (7.01–10.38)
Splitting	8,089 (21.59)	1.28 (1.20–1.36)	3.02 (2.84–3.22)	3.47 (3.15–3.83)	8.51 (7.19–10.07)
Idealization	13,184 (36.24)	1.29 (1.20–1.39)	1.77 (1.63–1.92)	1.95 (1.78–2.13)	2.89 (2.48–3.37)
Devaluation	6,637 (17.33)	1.36 (1.28–1.45)	2.18 (2.04–2.33)	2.33 (2.16–2.52)	4.06 (3.51–4.69)
Omnipotence	12,650 (35.00)	1.56 (1.48–1.65)	2.35 (2.21–2.50)	2.26 (2.02–2.52)	3.54 (2.94–4.26)
Any neurotic	23,432 (69.47)	1.07 (1.01–1.14)	1.42 (1.32–1.53)	1.39 (1.25–1.55)	1.42 (1.22–1.66)
Affect isolation	12,686 (36.03)	1.28 (1.21–1.36)	1.67 (1.55–1.80)	1.87 (1.69–2.07)	3.08 (2.67–3.56)
Obsessive/controlling behavior	18,293 (55.16)	0.99 (0.93–1.06)	1.06 (1.001–1.13)	0.97 (0.88–1.07)	0.94 (0.79–1.12)

greater likelihood of psychopathology.[13–15,23,24] They are also consistent with our prior findings indicating that use of these defense mechanisms is associated with lower psychosocial functioning.[8] Our results are in line with the hierarchical taxonomy of defense mechanisms and the functional severity of specific psychiatric disorders.[25] For example, the finding that relative to anxiety disorders, bipolar and major depressive disorders were associated with greater use of more immature defenses suggests that these latter disorders are generally associated with more functional impairment.[26,27] Nevertheless, even among individuals with no psychiatric disorders, use of defense mechanisms was common. Since defense mechanisms are automatic psychological responses to internal or external stressors or emotional conflict, they can be activated by a broad range of common life situations. Furthermore, many individuals who do not meet criteria for formal psychiatric diagnoses may nevertheless experience subthreshold or residual symptoms and thus may not be completely free of psychopathology.

Our study did not find that broad diagnostic categories or specific psychiatric disorders were associated with specific defense mechanism profiles. These results are in line with studies of clinical samples. In their study of psychiatric patients, Bond and Vaillant found *DSM-III* diagnosis could not predict defensive style. Some studies have documented statistically significant differences in the prevalence of specific defense mechanisms between depressive and anxiety disorders.[14,15] However, closer examination of these results shows that, consistent with our findings, most defense mechanisms were numerically higher for depressive than anxiety disorders, rather than a pattern in which the prevalence of some defense mechanisms was higher in depressive disorders, whereas other mechanisms were more common in anxiety disorders.[28]

One reason defense mechanisms do not appear to have disorder-specific patterns, but rather tend to be globally more common in certain disorders than others, is that defense mechanisms often co-occur, ie, they are not independent from each other.[8,14,15] As use of one defense mechanism increases the likelihood of using others, disorders associated with greater odds of a given defense mechanism would tend to be associated with greater prevalence odds of other defense mechanisms, generating a pattern of global severity rather than disorder-specific profiles.

Our findings have nosological, clinical, and training implications. From the nosological perspective, our results are consistent with a dimensional conceptualization of psychopathology where the prevalence of defense mechanisms, which are associated with psychosocial impairment,[8] is greater among individuals with than without psychiatric disorders, but still relatively high among those without current formal disorders. Some individuals may have subthreshold disorders, isolated or residual symptoms, or certain personality traits that are associated with defense mechanisms even in the absence of full disorders. Our findings are consistent with psychological and neurobiological approaches that favor dimensional over categorical models.[29–31]

Our findings further suggest that maladaptive defense mechanisms and psychiatric disorders represent

correlated but different dimensions of psychopathology, since there were strong associations between disorders and defense mechanisms, but no specific profiles of mechanisms of defense that would characterize a disorder or group of disorders. Consequently, defense mechanisms and psychiatric disorders might respond to different interventions. Medication and psychotherapy are evidence-based interventions for many psychiatric disorders. Yet while medications are rarely, if ever, prescribed to target defense mechanisms, clinical experience and an extensive body of literature have documented the efficacy of psychotherapy in addressing maladaptive defenses.[13,24] Preliminary findings suggest that maladaptive defense mechanisms at baseline can predict treatment outcome of medication treatment,[11] and clinical experience and a growing body of empirical data suggest that improvement of mood and anxiety disorder symptoms with medication often decreases the use of maladaptive defenses.[12,13,32] An important direction for future research will be to examine whether defense mechanisms are associated with the course of psychiatric disorders in the general population and, conversely, whether improvement in psychiatric disorders is associated with reductions in defense mechanisms.

From the training point of view, our findings suggest the need for continued clinical education in psychotherapy. Psychiatrists are spending progressively more time providing medication management and less providing psychotherapy.[33,34] Advances in artificial intelligence and digital therapeutics portend a greater role of automated systems in the provision of psychotherapy, while there is a growing emphasis in neuroscience-based psychiatric education.[35,36] The high prevalence of maladaptive defense mechanisms in the general population and their strong association with psychiatric disorders suggest the need for a thorough understanding of defense mechanisms and their management as an essential aspect of psychiatric training and competence.

This study has several limitations. First, defense mechanisms were approximated using items developed to assess personality disorder criteria rather than defenses per se. In addition, some individuals may have been unaware of the use of their defense mechanisms, leading to underreporting. Nevertheless, the finding that defense mechanisms were more prevalent among individuals with than without psychiatric disorders supports the face validity of these items. Furthermore, we have previously shown that there is a gradient in psychosocial functioning from no endorsement of defense mechanism, to use without impairment, to use with impairment.[8] Second, only 12 mechanisms could be assessed. Assessment of other mechanisms, including more mature mechanisms, might have yielded different results. Third, the data, which do not include information on the timing of defense mechanism and disorder onset, do not provide information about the directionality of the associations. Fourth, the analysis is focused on Axis I disorders and does not extend to Axis II disorders in which defense mechanisms play a prominent role. Finally, because the NESARC only assessed noninstitutionalized individuals, the results may not generalize to several important institutionalized populations, such as individuals in jails or prisons or inpatient psychiatric populations.

In summary, specific pathological defenses in the general population do not seem to be associated with individual disorders or diagnostic categories. Rather, prevalence of defense mechanisms appears to be a measure of disorder severity. Overall, our findings suggest that maladaptive defense mechanisms and psychiatric disorder are correlated but different dimensions of psychopathology that may have distinct etiologies and respond to different therapeutic approaches.

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