The Epidemiology of Chronic Major Depressive Disorder and Dysthymic Disorder: Results From the National Epidemiologic Survey on Alcohol and Related Conditions

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Objective: To examine the prevalence of chronic major depressive disorder (CMDD) and dysthymic disorder, their sociodemographic correlates, patterns of 12-month and lifetime psychiatric comorbidity, lifetime risk factors, psychosocial functioning, and mental health service utilization.

Method: Face-to-face interviews were conducted in the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (n = 43,093).

Results: The 12-month and lifetime prevalences were greater for CMDD (1.5% and 3.1%, respectively) than for dysthymic disorder (0.5% and 0.9%, respectively). Individuals with CMDD and dysthymic disorder shared most sociodemographic correlates and lifetime risk factors for major depressive disorder. Individuals with CMDD and dysthymic disorder had almost identically high rates of Axis I and Axis II comorbid disorders. However, individuals with CMDD received higher rates of all treatment modalities than individuals with dysthymic disorder.

Conclusions: Individuals with CMDD and dysthymic disorder share many sociodemographic correlates, comorbidity patterns, risk factors, and course. Individuals with chronic depressive disorders, especially those with dysthymic disorder, continue to face substantial unmet treatment needs.

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Epidemiologic studies estimate 12-month and lifetime prevalence of major depressive disorder (MDD) in the United States to be 5.3% and 13.2%, respectively.[1] Depression is expected to be the second greatest cause of disability by 2020.[2,3] Studies of clinical samples suggest that 10%–30% of individuals with MDD develop a chronic course despite adequate treatment,[4–9] indicating that chronic major depression is a major public health problem.

There are 2 major categories of chronic unipolar depression: chronic major depressive disorder (CMDD) and dysthymic disorder. *Chronic major depressive disorder* is defined as MDD in which criteria for major depressive episode (MDE) are continually met for at least 2 years.[10] Studies in clinical samples indicate that individuals with CMDD have high rates of comorbid personality disorders, lifetime history of substance use disorders, family history of mood disorders, and history of psychiatric hospitalization.[7,11]

Dysthymic disorder, a closely related construct, is characterized by a chronic depressed mood that persists most of the day for more days than not for at least 2 years and is associated with symptoms below the severity threshold for MDD.[10,12,13] Most knowledge about dysthymic disorder derives from clinical studies. In clinical samples, individuals with dysthymic disorder commonly experience superimposed MDEs[13–16] and protracted clinical courses.[15,17–19] Older age, lower levels of education, comorbid anxiety disorder, greater familial loading for chronic depression, and history of childhood sexual abuse predict greater depressive symptom severity and worse psychosocial functioning.[20]

Three studies have reported the prevalence of dysthymic disorder in the United States.[21–23] The Epidemiologic Catchment Area survey (n = 18,572) found a 3.1% lifetime prevalence of *DSM-III* dysthymic disorder, with greater risk among women under the age of 65, unmarried individuals, and young persons of low income.[23] Dysthymic disorder was associated with MDD, panic disorder, and substance abuse. Because this study used the *DSM-III* definition of dysthymic disorder, it also found bipolar disorder to be associated with dysthymic disorder. Individuals with dysthymic disorder used general health and psychiatric services at higher rates than the general population.[23] The National Comorbidity Survey (NCS [n = 8,098]) found a 2.5% 12-month and 6.4% lifetime prevalence of dysthymic disorder,[22] whereas the National Comorbidity Survey-Replication (NCS-R [n = 9,282])[21] reported a 12-month prevalence of 1.5%. Outside the United States, using *DSM-III-R* criteria, the Netherlands Mental Health Survey and Incidence Study (NEMESIS [n = 7,076]) reported a 2.3% 12-month and 6.3% lifetime prevalence of dysthymic disorder.[24] The NCS, NCS-R, and NEMESIS did not examine the correlates or treatment patterns of dysthymic individuals.

Important questions remain regarding the epidemiology of chronic depression. Despite the recognized burden of MDD for the individual and for society and the greater difficulties associated with treatment of chronic cases,[25–28] no epidemiologic study to date has investigated the prevalence, sociodemographic and clinical characteristics, and course of CMDD in a nationally representative sample. Only 1 study,[23] conducted over 2 decades ago, examined correlates

For Clinical Use

- The nosologic entities chronic major depressive disorder (CMDD) and dysthymic disorder share features related to risk factors, comorbidity, and clinical course.
- Both CMDD and dysthymic disorder show high rates of comorbidity with most psychiatric disorders, with similar patterns for Axis I and II disorders.
- Dysthymia might remain unnoticed in the clinical setting, as individuals with dysthymia may delay seeking treatment or not seek treatment at all. Some individuals with dysthymia may consider their symptoms a fixed feature of their personality.

of dysthymic disorder, and no study has investigated the patterns of mental health service use by adults with CMDD or dysthymic disorder in the community. Furthermore, studies of clinical samples have found little difference between different types of chronic depressive disorders on measures of symptomatology, comorbidity, functional impairment, family history, and treatment response.[29,30] No epidemiologic study, however, has yet compared the sociodemographic and clinical characteristics, comorbidity, risk factors, psychosocial functioning, and treatment-seeking patterns of these 2 groups.

The present study was designed to fill these gaps in knowledge by drawing on a large, nationally representative epidemiologic study, the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), which included assessments of a broad range of Axis I and II *DSM-IV* psychiatric disorders with good to excellent psychometric properties. Specifically, we sought to (1) examine the prevalence and sociodemographic correlates of CMDD and dysthymic disorder; (2) compare patterns of psychiatric comorbidity for 12-month and lifetime CMDD and dysthymic disorder; (3) compare psychosocial functioning, family history of various psychiatric disorders, and risk factors for lifetime CMDD and dysthymic disorder, and (4) estimate their rates of mental health service utilization.

METHOD

Sample

The 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a nationally representative sample of the adult population of the United States conducted by the US Census Bureau, under the direction of the National Institute of Alcoholism and Alcohol Abuse (NIAAA), is described in detail elsewhere.[31,32] The NESARC targeted the civilian, noninstitutionalized population, ages 18 years and older, residing in the 50 states and the District of Columbia. The final sample included 43,093 respondents drawn from individual households and group quarters, such as dormitories and half-way houses. African Americans, Latinos, and young adults (aged 18 to 24 years) were oversampled, with data then adjusted to account for oversampling and respondent and household nonresponse. The overall survey response rate was 81%. The weighted data were adjusted, using the 2000 Decennial Census, to be representative of the US civilian population across numerous sociodemographic variables.

Diagnostic Assessment

Sociodemographic measures included age, sex, race-ethnicity, nativity, marital status, place of residence, and geographic region. Socioeconomic measures included education (less than high school, completed high school, or some college or higher), family and personal income ($0–$19,999, $20,000–$34,999, $35,000–$69,999, or $70,000 or higher), and insurance type (public, private, or no insurance) measured as categorical variables.

All diagnoses were made according to *DSM-IV* criteria using the NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule-Version for *DSM-IV* (AUDADIS-IV), a valid, reliable, fully structured diagnostic interview designed for use by nonclinician professional interviewers.[33] Due to concerns about the validity of psychotic diagnoses in general population surveys as well as the length of the interview, possible psychotic disorders were elicited by asking respondents if a doctor or other health professional had ever told them that they had schizophrenia or a psychotic disorder. Most Axis I diagnoses included in the AUDADIS-IV fall into 3 groups: (1) substance use disorders (including any alcohol abuse/dependence, any drug abuse/dependence, and nicotine dependence), (2) mood disorders (MDD, dysthymic disorder, and bipolar disorder), and (3) anxiety disorders (panic disorder, social anxiety disorder, specific phobia, and generalized anxiety disorder). Other disorders included pathological gambling and personality disorders. Personality disorders (avoidant, dependent, obsessive-compulsive, paranoid, schizoid, histrionic, antisocial) and conduct disorder were assessed on a lifetime basis only.

Following the *DSM-IV*, all these disorders were considered "primary" disorders since they excluded mental disorders due to substance use or medical conditions. Detailed test-test reliability and validity of AUDADIS-IV measures of *DSM-IV* disorders have been reported elsewhere.[34,35] Test-retest reliability was good for MDD ($\kappa = 0.65–0.73$), and reliability ($\kappa > 0.74$) and validity were good to excellent for substance use disorders.[34,36–43] Reliability was fair to excellent for other mood and anxiety disorders ($\kappa = 0.40–0.60$) and personality disorders ($\kappa = 0.40–0.67$). Clinical reappraisal showed that AUDADIS-IV measures and psychiatrists' diagnoses agreed well for dysthymic disorder ($\kappa = 0.49–0.67$) and MDD ($\kappa = 0.64–0.68$).[34]

Chronic major depressive disorder was diagnosed when *DSM-IV* criteria for MDD were reported continually present

for at least 2 years. Lifetime *DSM-IV* CMDD was thus defined as having had at least 1 MDE with these characteristics over the life course without a history of manic, mixed, or hypomanic episodes (ie, excluding bipolar I and bipolar II disorders). This was assessed in the major depression module among respondents meeting MDD criteria who stated that their most recent or longest MDE lasted at least 2 consecutive years. Respondents with lifetime CMDD whose most recent episode onset occurred at least 2 years before the time of the interview and who reported remaining symptomatic at the time of the assessment were classified as having 12-month (current) CMDD.

Diagnostic criteria for dysthymic disorder were met if the individual endorsed depressed mood for most of the day, for more days than not, for at least 2 years. While depressed, the individual had to have met 2 or more additional criteria: (1) poor appetite/overeating, (2) insomnia/hypersomnia, (3) low energy/fatigue, (4) low self-esteem, (5) poor concentration/difficulty making decisions, and (6) feeling of hopelessness. It was further required that during this interval there had been no periods of euthymia lasting more than 2 months. Consistent with *DSM-IV* criteria, meeting lifetime criteria for manic/hypomanic episodes or cyclothymic disorder precluded the diagnosis of dysthymic disorder, and respondents could not have met *DSM-IV* criteria for MDE during the first 2 years of the disorder. They could, however, have had an MDE if the episode had remitted for at least 2 months before the onset of dysthymic disorder or if the MDE onset occurred after the first 2 years of the first onset of dysthymic disorder. To maintain consistency with *DSM-IV* criteria and to employ the definition conservatively, we used information from the AUDADIS-IV MDD module, which inquired about the onset and duration of MDEs, and the dysthymic disorder module, which inquired about depressed mood for 2 years and included the criteria described above. Our dysthymic disorder sample, thus operationalized was consistent with the *DSM-IV* definition of dysthymic disorder, which currently comprises 3 ways of meeting the diagnostic criteria for dysthymic disorder (*DSM-IV* Criterion D): those who met full criteria for dysthymic disorder (in the last 2 years) with no lifetime history of MDE; those reporting onset of dysthymic disorder at least 2 years before their first MDE; and those for whom the endpoint of an MDE preceded the onset of dysthymic disorder by a time period calculated to be at least 2 months. Twelve-month prevalence was defined as the percentage of respondents who met criteria for dysthymic disorder at the interview after having at least 2 years of symptoms as with CMDD and met the aforementioned criteria.

We also included variables measuring any substance use, any alcohol use, nonprescription drug use, any tobacco use (in the last 12 months and lifetime), and use of alcohol to relieve depressive symptoms. The reliability of the alcohol consumption and drug use measures has been documented to range from good to excellent.[44]

The study further included variables considered risk factors for depressive disorders that have been extensively studied in MDD. For consistency with previous research,[45–47] we queried about lifetime risk factors for depression based on the developmental model of MDD proposed by Kendler and colleagues.[45–47]

Following the model, we organized the factors into 3 sets: (1) familial influences, including family history of depression, substance and alcohol disorders, and antisocial personality disorder; (2) risk factors with childhood onset, including parental loss before age 18, vulnerable family environment (defined as history of separation from a biologic parent before age 18), early onset of anxiety disorder (viz, before age 18), conduct disorder and low self-esteem (defined as present most of the time throughout their lives); and (3) risk factors manifested into adulthood, including history of separation or divorce, low emotional reactivity, and social support.

Subjects were classified as having low social support if they answered positively to the question, "Are there very few people that you're really close to outside of your immediate family?" Emotional reactivity was assessed using the question, "Do you rarely show much emotion?" Low self-esteem was determined if responding positively to the at least 1 of the questions, "Do you believe that you're not as good, as smart, or as attractive as most other people?" or "Are you usually quiet or do you have very little to say when you meet new people because you believe they are better than you are?"

To examine the characteristics of our dysthymic disorder sample we also compared the risk factors of the 3 subsamples of individuals with dysthymic disorder: (1) those who met criteria for dysthymic disorder with no lifetime history of MDEs; (2) those who met dysthymic disorder criteria for at least 2 years and later had an MDE; and (3) those who had dysthymic disorder after an MDE, the latter remitting for at least 2 months. Furthermore, we also compared risk factors among individuals with dysthymic disorder, chronic MDD, and nonchronic MDD (those with MDEs that lasted less than 2 years). We indicate the differences with the main analyses (full results of the additional analyses are available on request).

Psychosocial functioning in the past 12 months was assessed using subscales from the 12-item Short Form Health Survey, version 2 (SF-12v2), a reliable and valid measure of disability used in population surveys: physical component summary, social functioning scale, role emotional scale, and mental health scale.[48] Each SF-12v2 disability scale yields a norm-based score with a mean of 50 and standardized range of 0–100. Higher scores indicate less disability.

Lifetime assessments included mean age at onset, mean number of MDEs, and mean duration of longest chronic depressive episode (either CMDD or dysthymic disorder).

Mental Health Treatment

To estimate rates of mental health service utilization, respondents with either form of chronic depression were classified as receiving treatment if they sought help from a counselor, therapist, doctor, or psychologist; were evaluated

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in an emergency room; were hospitalized for psychiatric reasons for at least 1 night; or were prescribed medications. Treatment-utilization questions were disorder specific (ie, separate questions for dysthymic disorder and MDD). Analyses were conducted on respondents diagnosed with the disorder of interest in the time frame under consideration (lifetime). Mean age at first mental health service contact was also assessed.

Statistical Analyses

All means, percentages, and odds ratios (ORs) were based on weighted data. Because the combined standard error of 2 means (or percents) always equals or is less than the sum of the standard errors of those 2 means, we conservatively consider 2 nonoverlapping confidence intervals (CIs) to differ significantly from one another.[49,50] We consider significant ORs those whose CI does not include 1. All standard errors and 95% CIs were estimated using Software for Survey Data Analysis (SUDAAN)[51] to adjust for design characteristics of the survey.

In a small percentage of cases (3.9% of those with CMDD and 13.3% of those with dysthymic disorder, constituting 0.1% of the sample), individuals met criteria for both diagnoses at some point during their lifetime (although not simultaneously, since CMDD rules out concurrent dysthymic disorder). Our main analyses included all individuals with a lifetime diagnosis of both CMDD and dysthymic disorder in the dysthymic disorder group but, to examine the robustness of our assumption, we conducted identical analyses categorizing the individuals with both diagnoses in the CMDD group (results available from C.B.). Since the results were almost identical in both analyses, we report the results in which individuals carrying both diagnoses are classified as having dysthymic disorder.

Supplementary Analyses

To guard against the possibility of variations in the results due to the operationalization of dysthymic disorder, we conducted identical analyses using the subsample of respondents with lifetime pure dysthymic disorder (no lifetime MDEs). We also conducted additional analyses comparing dysthymic disorder and nonchronic MDD (ie, all MDEs < 2 years). We present the analyses comparing individuals with pure dysthymic disorder and CMDD and those comparing dysthymic disorder and nonchronic MDD indicating the differences with the main analyses. Full results of the additional analyses are available from us on request.

RESULTS

Prevalence and Sociodemographic Correlates

The 12-month and lifetime prevalences of CMDD were 1.5% and 3.1%, respectively. The 12-month and lifetime prevalences of dysthymic disorder were 0.5% and 0.9%, respectively.

The odds of lifetime diagnoses of CMDD or dysthymic disorder were both greater in women than in men (Table 1). Blacks, Asians, and Hispanics had lower odds, whereas Native Americans had greater odds for lifetime CMDD, compared to whites. US-born individuals were significantly more likely than foreign-born individuals to have a lifetime diagnosis of CMDD but not dysthymic disorder.

Individuals aged 45 to 64 years had greater odds of having CMDD and dysthymic disorder than those aged 18 to 29 years. Additionally, individuals older than 29 years had greater odds of CMDD than those 18–29 years. Lower educational attainment was associated with greater odds of dysthymic disorder but not of CMDD. Personal and family annual income above $20,000 were associated with lower odds of both CMDD and dysthymic disorder. The only exception was a family income between $20,000 and $35,000, which did not differ between individuals with CMDD and the general population. Widowhood increased the odds of both diagnoses when compared to married status, whereas having never been married decreased the odds for CMDD. Individuals living in rural areas had increased risk for CMDD. There were no other differences by geographic region. Individuals with either CMDD or dysthymic disorder were more likely to have public insurance than those with neither disorder.

Moreover, individuals with dysthymic disorder were more likely than those with CMDD to be male, black, Hispanic, foreign-born, and never married but less likely to be 30 or more years old and to have individual or family incomes between $35,000 and $69,999.

Risk Factors

Odds for positive first-degree relative history of depression, substance use disorders, and antisocial personality disorder were all significantly greater for both CMDD and dysthymic disorder than the general population (Table 2). For both disorders, the highest odds were those for family history of depression. Most of the risk factors of Kendler's model evaluated in our study were associated with both types of chronic depression. The 2 exceptions were parental loss and conduct disorder, which did not statistically differ for CMDD compared to the general population. All the childhood and adulthood risk factors increased the odds for dysthymic disorder.

The most frequent risk factors were early onset of an anxiety disorder and lack of social support in adulthood. Compared to the general population, low self-esteem was associated with the highest odds for both types of chronic depression. Prevalence of risk factors was also compared between dysthymic disorder and CMDD. Individuals with dysthymic disorder were more likely to present childhood risk factors, such as parental loss and conduct disorder, before age 15 and less likely to have a history of divorce/loss of a spouse than individuals with CMDD.

Dysthymic Disorder Sample

The dysthymic disorder sample comprised individuals with pure dysthymic disorder (0.68% of the general population or 73.12% of individuals with dysthymic disorder,

Table 1. Sociodemographic/Socioeconomic Characteristics for Lifetime Dysthymic Disorder and Chronic Major Depressive Disorder (CMDD)

Characteristic	Dysthymic Disorder, n = 456 (0.9%), % (95% CI)	CMDD, n = 1,377 (3.1%), % (95% CI)	General Population, n = 41,260 (96.0%), % (95% CI)	Dysthymic Disorder, OR (95% CI)[a]	CMDD, OR (95% CI)[a]	Dysthymic Disorder vs CMDD, OR (95% CI)
Sex						
Male	40.05 (34.15–46.26)	29.84 (26.96–32.89)	48.57 (47.93–49.22)	0.71 (0.55–0.92)	0.45 (0.39–0.52)	1.57 (1.17–2.08)
Female[b]	59.95 (53.74–65.85)	70.16 (67.11–73.04)	51.43 (50.78–52.07)	1.00	1.00	1.00
Race/ethnicity						
White[b]	69.98 (63.41–75.83)	78.63 (75.28–81.63)	70.65 (67.34–73.76)	1.00	1.00	1.00
Black	11.64 (8.10–16.47)	7.84 (6.34–9.65)	11.16 (9.95–12.51)	1.05 (0.73–1.51)	0.63 (0.52–0.77)	1.67 (1.07–2.60)
Native American	3.23 (1.88–5.51)	3.83 (2.77–5.26)	2.06 (1.76–2.40)	1.59 (0.90–2.80)	1.67 (1.18–2.36)	0.95 (0.49–1.82)
Asian	4.04 (1.79–8.83)	2.46 (1.42–4.25)	4.43 (3.46–5.66)	0.92 (0.39–2.16)	0.50 (0.30–0.84)	1.84 (0.66–5.13)
Hispanic	11.10 (7.48–16.17)	7.24 (5.36–9.72)	11.70 (9.42–14.44)	0.96 (0.66–1.39)	0.56 (0.43–0.72)	1.72 (1.19–2.49)
Nativity						
US-born[b]	85.44 (79.47–89.90)	91.67 (88.79–93.86)	85.20 (81.93–87.97)	1.00	1.00	1.00
Foreign-born	14.56 (10.10–20.53)	8.33 (6.14–11.21)	14.80 (12.03–18.07)	0.98 (0.69–1.40)	0.52 (0.41–0.67)	1.87 (1.25–2.82)
Age, y						
18–29[b]	18.32 (13.89–23.78)	11.29 (9.32–13.61)	22.17 (21.43–22.93)	1.00	1.00	1.00
30–44	22.65 (18.39–27.55)	29.61 (26.49–32.93)	31.01 (30.37–31.66)	0.88 (0.61–1.29)	1.88 (1.48–2.37)	0.47 (0.30–0.73)
45–64	45.10 (39.34–51.01)	43.58 (40.27–46.94)	30.53 (29.92–31.14)	1.79 (1.25–2.56)	2.80 (2.24–3.51)	0.64 (0.42–0.98)
65+	13.93 (10.77–17.82)	15.52 (13.34–17.99)	16.29 (15.63–16.96)	1.03 (0.69–1.54)	1.87 (1.41–2.48)	0.55 (0.33–0.93)
Education						
< High school	20.47 (16.42–25.21)	16.67 (14.23–19.44)	15.57 (14.61–16.58)	1.33 (1.01–1.74)	1.10 (0.90–1.34)	1.21 (0.86–1.69)
High school	24.89 (20.10–30.39)	29.56 (26.47–32.85)	29.36 (28.25–30.50)	0.85 (0.64–1.14)	1.03 (0.88–1.21)	0.83 (0.59–1.17)
College[b]	54.64 (49.02–60.14)	53.77 (50.25–57.25)	55.07 (53.79–56.34)	1.00	1.00	1.00
Individual income						
0–$19,000[b]	59.86 (53.98–65.47)	53.96 (50.31–57.56)	46.92 (45.77–48.07)	1.00	1.00	1.00
$20,000–$34,000	20.58 (16.31–25.62)	20.67 (17.95–23.68)	22.73 (22.00–23.48)	0.71 (0.53–0.96)	0.79 (0.66–0.95)	0.90 (0.63–1.27)
$35,000–$69,000	14.55 (11.05–18.93)	19.02 (16.44–21.91)	22.12 (21.37–22.89)	0.52 (0.38–0.70)	0.75 (0.62–0.90)	0.69 (0.49–0.97)
> $70,000	5.01 (2.64–9.30)	6.35 (4.79–8.38)	8.23 (7.51–9.01)	0.48 (0.24–0.93)	0.67 (0.51–0.89)	0.71 (0.37–1.37)
Family income						
0–$19,000[b]	36.31 (31.27–41.67)	28.49 (25.45–31.74)	23.27 (22.34–24.24)	1.00	1.00	1.00
$20,000–$34,000	19.63 (15.35–24.75)	21.36 (18.87–24.08)	20.16 (19.50–20.83)	0.62 (0.46–0.85)	0.87 (0.72–1.04)	0.72 (0.50–1.04)
$35,000–$69,000	25.44 (20.34–31.31)	29.47 (26.04–33.14)	32.28 (31.61–32.96)	0.51 (0.38–0.68)	0.75 (0.61–0.91)	0.68 (0.47–0.97)
> $70,000	18.63 (14.24–23.99)	20.68 (17.68–24.04)	24.29 (22.93–25.70)	0.49 (0.36–0.68)	0.70 (0.57–0.85)	0.71 (0.50–1.01)
Marital status						
Married[b]	46.07 (40.58–51.65)	53.69 (50.44–56.92)	62.03 (61.09–62.96)	1.00	1.00	1.00
Widowed	32.90 (28.10–38.09)	32.22 (29.38–35.19)	16.84 (16.38–17.31)	2.63 (2.07–3.35)	2.21 (1.92–2.55)	1.19 (0.90–1.58)
Never married	21.03 (16.48–26.45)	14.09 (12.11–16.33)	21.13 (20.19–22.10)	1.34 (0.98–1.84)	0.77 (0.64–0.92)	1.74 (1.20–2.52)
Urbanicity						
Urban[b]	81.59 (74.80–86.87)	75.75 (71.23–79.76)	80.41 (77.00–83.42)	1.00	1.00	1.00
Rural	18.41 (13.13–25.20)	24.25 (20.24–28.77)	19.59 (16.58–23.00)	0.93 (0.65–1.32)	1.31 (1.14–1.51)	0.70 (0.49–1.02)
Region						
Northeast	24.57 (16.03–35.73)	19.39 (13.83–26.50)	19.63 (13.69–27.34)	1.18 (0.85–1.63)	0.91 (0.73–1.13)	1.30 (0.91–1.86)
Midwest	22.89 (16.30–31.16)	23.18 (17.72–29.72)	23.15 (17.37–30.14)	0.93 (0.65–1.33)	0.92 (0.74–1.14)	1.01 (0.70–1.46)
South	29.29 (21.93–37.93)	33.60 (27.75–39.99)	35.32 (29.08–42.10)	0.78 (0.57–1.07)	0.87 (0.71–1.07)	0.89 (0.63–1.27)
West[b]	23.25 (15.94–32.61)	23.83 (17.74–31.22)	21.90 (15.68–29.73)	1.00	1.00	1.00
Insurance						
Private[b]	59.35 (53.65–64.82)	63.36 (59.89–66.70)	68.30 (66.73–69.82)	1.00	1.00	1.00
Public	23.33 (18.78–28.59)	18.55 (16.04–21.36)	12.70 (12.04–13.38)	2.11 (1.61–2.77)	1.57 (1.31–1.89)	1.34 (0.97–1.86)
No insurance	17.32 (13.34–22.18)	18.09 (15.62–20.85)	19.01 (17.79–20.29)	1.05 (0.76–1.44)	1.03 (0.84–1.25)	1.02 (0.72–1.45)

[a]Compared to the general population.
[b]Reference group.
Abbreviation: OR = odds ratio.

n = 329), individuals with a dysthymic disorder that was followed by a MDE (0.17% of the general population or 18.28% of individuals with dysthymic disorder, n = 79), and individuals with dysthymic disorder after a 2-month remission from an MDE (0.08% of the general population or 8.60% of individuals with dysthymic disorder, n = 48). Individuals with dysthymic disorder followed by MDE were more likely to have all family risk factors, a vulnerable family environment, early-onset anxiety disorder, and low self-esteem, than those with pure dysthymic disorder. Individuals with MDE followed by dysthymic disorder after a 2-month remission were more likely than those with pure dysthymic disorder to have low self-esteem and low social support. Furthermore, those with MDE followed by dysthymic disorder after a 2-month remission were less likely than those with dysthymic disorder followed by an MDE to have a family history of substance use disorders and parental loss (full results available upon request).

Dysthymic Disorder, CMDD, and Nonchronic MDD

Individuals with CMDD were more likely to have a family history of substance use disorders and antisocial personality disorder, low self-esteem, and a history of divorce/loss of a spouse than those with nonchronic MDD. Furthermore, those with dysthymic disorder were more likely to have a history of parental loss, vulnerable family environment, and

Table 2. Risk Factors for Lifetime Dysthymic Disorder and Chronic Major Depressive Disorder (CMDD)

Risk Factor	Dysthymic Disorder, n = 456 (0.9%), % (95% CI)	CMDD, n = 1,377 (3.1%), % (95% CI)	General Population, n = 41,260 (96.0%), % (95% CI)	Dysthymic Disorder, OR (95% CI)[a]	CMDD, OR (95% CI)[a]	Dysthymic Disorder vs CMDD, OR (95% CI)
Family						
Family history of depression	62.50 (56.59–68.06)	64.82 (61.43–68.07)	30.26 (28.98–31.57)	3.84 (2.98–4.96)	4.25 (3.66–4.92)	0.90 (0.68–1.19)
Family history of alcohol problems	48.42 (42.26–54.64)	54.29 (51.02–57.51)	33.16 (31.96–34.37)	1.89 (1.49–2.41)	2.39 (2.10–2.73)	0.79 (0.60–1.03)
Family history of drug problems	26.03 (21.38–31.30)	31.02 (27.96–34.26)	15.79 (15.10–16.51)	1.88 (1.45–2.42)	2.40 (2.07–2.78)	0.78 (0.58–1.05)
Family history of antisocial personality disorder	32.96 (27.26–38.65)	35.14 (32.10–38.32)	16.83 (15.98–17.71)	2.40 (1.86–3.11)	2.68 (2.34–3.07)	0.90 (0.67–1.19)
Childhood						
Parental loss	14.39 (10.96–18.68)	9.71 (8.00–11.73)	9.71 (9.35–10.08)	1.56 (1.14–2.14)	1.00 (0.81–1.23)	1.56 (1.08–2.27)
Vulnerable family environment	38.81 (33.54–44.36)	32.91 (29.82–36.16)	28.52 (27.78–29.26)	1.59 (1.27–1.99)	1.23 (1.07–1.42)	1.29 (0.98–1.71)
Early onset of anxiety disorder	52.09 (45.73–58.38)	49.20 (45.57–52.84)	33.71 (32.42–35.03)	2.14 (1.66–2.75)	1.90 (1.64–2.21)	1.12 (0.85–1.47)
Conduct disorder	3.10 (1.24–7.56)	1.09 (0.62–1.91)	1.03 (0.90–1.18)	3.07 (1.19–7.94)	1.06 (0.59–1.89)	2.91 (1.07–7.93)
Low self-esteem	24.92 (20.36–30.11)	27.04 (24.05–30.24)	10.85 (10.24–11.50)	2.73 (2.11–3.53)	3.04 (2.55–3.63)	0.90 (0.66–1.22)
Adult						
Social support	64.24 (58.19–69.87)	58.06 (54.69–61.37)	44.87 (43.48–46.26)	2.21 (1.72–2.84)	1.70 (1.48–1.96)	1.30 (0.98–1.73)
History of divorce/ loss spouse	43.65 (38.56–48.87)	50.38 (47.11–53.65)	28.81 (27.76–29.89)	1.91 (1.54–2.37)	2.51 (2.20–2.86)	0.76 (0.60–0.97)
Low emotional reactivity	23.11 (18.83–28.02)	21.47 (18.90–24.28)	17.75 (17.07–18.46)	1.39 (1.07–1.81)	1.27 (1.08–1.48)	1.10 (0.82–1.48)

[a]Compared to the general population.
Abbreviation: OR = odds ratio.

low self-esteem than those with nonchronic MDD (results available upon request).

Comorbidity

Approximately three-quarters of respondents with either dysthymic disorder or CMDD had an additional lifetime psychiatric disorder, usually including at least 1 Axis I disorder (Table 3). Compared to the general population, individuals with CMDD and dysthymic disorder had significantly greater odds for almost all Axis I and Axis II disorders, both lifetime and in the past 12 months (Tables 3 and 4). The few exceptions included alcohol abuse, which was not associated with dysthymic disorder or CMDD; conduct disorder and pathological gambling, associated with dysthymic disorder but not CMDD; and drug abuse and dependent personality disorder, associated with CMDD but not with dysthymic disorder. For both dysthymic disorder and CMDD, the odds for generalized anxiety disorder compared to the general population (5.7 and 8.3, respectively) were among the highest for any comorbid diagnosis. Further, approximately one-third of respondents with dysthymic disorder reported at least 1 lifetime MDE.

Approximately one-third of individuals with CMDD or dysthymic disorder met criteria for at least 1 personality disorder. The personality disorders with highest prevalence linked to either chronic mood disorder were obsessive-compulsive and paranoid personality disorders, which were also the most prevalent personality disorders in the general population.[52] However, compared to the general population, the highest odds were for avoidant personality disorder for both CMDD and dysthymic disorder and dependent personality disorder for CMDD. Any Axis I disorder and specific phobia (and, consequently, presence of any anxiety disorder) were significantly more prevalent among individuals with lifetime CMDD than dysthymic disorder, whereas conduct disorder was more prevalent among individuals with dysthymic disorder than CMDD. There were no other significant differences in lifetime prevalence of comorbid Axis I or II disorder for the 2 diagnoses.

Individuals with 12-month dysthymic disorder had higher prevalence than the general population of all Axis I disorders, except specific phobia and alcohol and drug abuse. Individuals with CMDD had significantly higher rates of all Axis I disorders except alcohol abuse and pathological gambling. Twelve-month comorbidity rates did not significantly differ between CMDD and dysthymic disorder.

Lifetime and Current Substance Use

Lifetime tobacco, alcohol, and drug use were significantly higher for individuals with either chronic depressive disorder than the general population but did not statistically differ between these 2 groups (Table 3). Similarly, tobacco and drug use rates in the past 12 months for both CMDD and dysthymic disorder significantly exceeded those of the general population, but they did not differ between the 2 disorders (Table 4). Lifetime and past 12 months' self-medication was significantly higher in individuals with CMDD and dysthymic disorder. The only exception was past 12 months' nonprescription medicine use in individuals with dysthymic disorder. There were no differences between the 2 groups (Tables 3 and 4).

Past 12-Month Psychosocial Functioning

Individuals meeting 12-month criteria for either chronic mood disorder had significantly lower scores on all SF-12v2 subscales compared to the general population, indicating

Table 3. Lifetime Psychiatric Comorbidity, Substance Use, and Self-Medication Rates for Lifetime Dysthymic Disorder and Chronic Major Depressive Disorder (CMDD)

Variable	Dysthymic Disorder, n = 456 (0.9%), % (95% CI)	CMDD, n = 1,377 (3.1%), % (95% CI)	General Population, n = 41,804 (97.2%), % (95% CI)	Dysthymic Disorder, OR (95% CI)[a]	Chronic MDD, OR (95% CI)[a]	Dysthymic Disorder vs CMDD, OR (95% CI)
Any psychiatric disorder[b]	77.22 (70.70–82.65)	78.91 (76.02–81.55)	48.53 (46.76–50.31)	2.92 (2.16–3.95)	3.97 (3.37–4.67)	0.73 (0.52–1.03)
Any Axis I disorder[b]	72.97 (66.49–78.60)	75.45 (72.57–78.12)	45.35 (43.50–47.21)	2.53 (1.90–3.36)	3.70 (3.19–4.30)	0.68 (0.50–0.94)
Any substance use disorder	53.14 (47.22–58.97)	54.74 (51.42–58.03)	37.73 (36.04–39.44)	1.87 (1.47–2.38)	2.00 (1.73–2.31)	0.94 (0.71–1.23)
Alcohol use disorder	41.59 (35.97–47.44)	41.15 (37.88–44.50)	29.83 (28.30–31.40)	1.68 (1.33–2.11)	1.65 (1.43–1.90)	1.02 (0.78–1.33)
Alcohol abuse	17.36 (13.30–22.35)	19.06 (16.35–22.10)	17.76 (16.74–18.84)	0.97 (0.70–1.35)	1.09 (0.90–1.32)	0.89 (0.61–1.30)
Alcohol dependence	24.22 (19.67–29.44)	22.09 (19.17–25.32)	12.06 (11.39–12.77)	2.33 (1.79–3.02)	2.07 (1.72–2.48)	1.13 (0.84–1.52)
Drug use disorder	18.84 (14.47–24.17)	19.02 (16.65–21.64)	9.97 (9.35–10.62)	2.10 (1.52–2.90)	2.12 (1.79–2.51)	0.99 (0.71–1.38)
Drug abuse	11.01 (7.36–16.15)	11.26 (9.21–13.70)	7.60 (7.13–8.09)	1.50 (0.97–2.34)	1.54 (1.23–1.94)	0.97 (0.61–1.55)
Drug dependence	7.83 (5.40–11.24)	7.76 (6.13–9.77)	2.37 (2.14–2.63)	3.50 (2.32–5.27)	3.46 (2.65–4.52)	1.01 (0.63–1.62)
Nicotine dependence	30.05 (24.95–35.70)	32.59 (29.47–35.87)	17.12 (16.18–18.11)	2.08 (1.61–2.69)	2.34 (2.01–2.72)	0.89 (0.66–1.19)
Major depression	27.12 (22.46–32.34)	100.00	10.33 (9.81–10.87)	3.23 (2.50–4.17)		
Any anxiety disorder	36.19 (30.51–42.29)	47.57 (44.27–50.90)	16.02 (15.17–16.90)	2.97 (2.30–3.84)	4.76 (4.15–5.46)	0.63 (0.47–0.82)
Panic disorder	13.50 (10.34–17.45)	17.21 (14.86–19.83)	4.78 (4.48–5.09)	3.11 (2.29–4.22)	4.14 (3.43–5.00)	0.75 (0.53–1.06)
Social anxiety disorder	12.23 (9.06–16.32)	16.55 (14.15–19.26)	4.53 (4.17–4.91)	2.94 (2.09–4.13)	4.18 (3.47–5.04)	0.70 (0.49–1.01)
Specific phobia	13.42 (10.11–17.60)	22.18 (19.25–25.42)	8.94 (8.37–9.54)	1.58 (1.15–2.18)	2.90 (2.44–3.46)	0.54 (0.38–0.78)
Generalized anxiety disorder	16.86 (12.65–22.12)	22.71 (20.08–25.57)	3.42 (3.13–3.74)	5.72 (4.08–8.04)	8.29 (6.99–9.85)	0.69 (0.47–1.01)
Conduct disorder	3.10 (1.24–7.56)	1.09 (0.62–1.91)	1.03 (0.90–1.18)	3.07 (1.19–7.94)	1.06 (0.59–1.89)	2.91 (1.07–7.93)
Pathological gambling	1.41 (0.56–3.52)	0.68 (0.36–1.29)	0.41 (0.34–0.49)	3.51 (1.35–9.10)	1.69 (0.86–3.30)	2.08 (0.66–6.59)
Any psychotic disorder	1.77 (0.82–3.77)	2.15 (1.34–3.44)	0.23 (0.17–0.30)	7.86 (3.47–17.83)	9.59 (5.46–16.86)	0.82 (0.33–2.01)
Any personality disorder	38.13 (32.41–44.19)	36.79 (33.61–40.08)	13.87 (13.20–14.57)	3.83 (2.97–4.93)	3.61 (3.14–4.16)	1.06 (0.79–1.41)
Avoidant personality disorder	8.85 (5.89–13.07)	10.78 (8.77–13.17)	2.02 (1.83–2.24)	4.70 (2.99–7.38)	5.85 (4.59–7.45)	0.80 (0.50–1.30)
Dependant personality disorder	0.94 (0.36–2.40)	2.18 (1.42–3.32)	0.43 (0.35–0.53)	2.17 (0.85–5.56)	5.11 (3.25–8.04)	0.43 (0.16–1.15)
Obsessive-compulsive disorder	15.85 (12.01–20.62)	17.37 (14.68–20.44)	7.50 (7.07–7.96)	2.32 (1.68–3.22)	2.59 (2.13–3.15)	0.90 (0.61–1.31)
Paranoid personality disorder	13.82 (10.39–18.15)	12.08 (10.05–14.44)	4.08 (3.79–4.39)	3.77 (2.72–5.32)	3.23 (2.59–4.03)	1.17 (0.80–1.70)
Schizoid personality disorder	11.31 (8.04–15.68)	9.84 (7.85–12.28)	2.83 (2.60–3.08)	4.37 (2.99–6.41)	3.75 (2.89–4.85)	1.17 (0.73–1.87)
Histrionic personality disorder	4.09 (2.46–6.73)	4.06 (2.79–5.85)	1.75 (1.59–1.93)	2.39 (1.39–4.12)	2.37 (1.62–3.48)	1.01 (0.53–1.92)
Antisocial personality disorder	10.21 (7.01–14.62)	8.64 (7.01–10.61)	3.41 (3.14–3.71)	3.22 (2.12–4.88)	2.68 (2.11–3.40)	1.20 (0.75–1.92)
Any substance use[c]	92.60 (88.91–95.13)	91.57 (89.54–93.24)	85.68 (84.51–86.78)	2.09 (1.38–3.18)	1.82 (1.42–2.32)	1.15 (0.70–1.91)
Any tobacco use	58.67 (53.32–63.82)	58.81 (55.41–62.13)	46.35 (44.84–47.88)	1.64 (1.32–2.05)	1.65 (1.44–1.90)	0.99 (0.77–1.28)
Any alcohol use	88.80 (84.55–91.99)	86.94 (84.25–89.24)	82.53 (81.23–83.76)	1.68 (1.19–2.37)	1.41 (1.13–1.76)	1.19 (0.77–1.83)
Any drug use	37.50 (32.19–43.14)	37.65 (34.49–40.92)	22.18 (21.20–23.20)	2.11 (1.66–2.67)	2.12 (1.84–2.44)	0.99 (0.77–1.28)
Self-medication[d]						
Alcohol use to relieve symptoms	22.30 (17.79–27.58)	21.76 (19.27–24.49)	3.57 (3.28–3.88)	7.76 (5.85–10.29)	7.52 (6.27–9.01)	1.03 (0.76–1.41)
Use of nonprescription medicine	9.10 (5.94–13.71)	9.94 (7.94–12.37)	1.30 (1.13–1.49)	7.62 (4.72–12.32)	8.40 (6.31–11.17)	0.91 (0.57–1.45)

[a]Compared to the general population.
[b]Any psychiatric disorder and any Axis I disorder does not include either dysthymic disorder or CMDD.
[c]Any substance use includes any tobacco use, any alcohol use, and any drug use.
[d]Either self-medication for dysthymic disorder or CMDD.
Abbreviation: OR = odds ratio.

greater disability on physical and all psychosocial measures (Table 4). For both disorders, the lowest scores were on the role emotional scale. Individuals with CMDD scored significantly higher than those with dysthymic disorder on the social functioning scale.

Lifetime Course and Mental Health Treatment

There were no significant differences in the age at onset of CMDD and dysthymic disorder, mean number of lifetime major depression episodes, or the duration of the longest episode (Table 5). Over half of individuals with dysthymic disorder (57.1%), and a significantly greater percentage with CMDD (72.5%), received some type of mental health treatment in their lifetime, but age at first treatment did not differ across disorders for those who sought treatment. Rates of outpatient, inpatient, and pharmacologic treatment were significantly greater for CMDD. After adjusting for sociodemographic variables, we found that all treatment modalities except for pharmacologic treatment remained significantly higher for individuals with CMDD.

Supplementary Analyses

Pure dysthymic disorder versus CMDD. Although there were some differences between identical analyses of the sample, including only individuals with pure dysthymic disorder (with no lifetime MDEs), the overall pattern of results

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Table 4. Past 12-Month Psychiatric Comorbidity, Substance Use, Self-Medication Rates, and Level of Disability for Dysthymic Disorder and Chronic Major Depressive Disorder (CMDD)

Variable	Dysthymic Disorder, n = 261 (0.5%), % (95% CI)	CMDD, n = 655 (1.5%), % (95% CI)	General Population, n = 42,177 (98.0%), % (95% CI)	Dysthymic Disorder, OR (95% CI)[a]	CMDD, OR (95% CI)[a]	Dysthymic Disorder vs CMDD, OR (95% CI)
Any Axis I disorder[b]	45.37 (37.61–53.36)	55.01 (49.78–60.13)	25.90 (24.73–27.11)	2.38 (1.73–3.26)	3.48 (2.83–4.27)	0.68 (0.46–1.00)
Any substance use disorder	26.51 (20.37–33.73)	32.25 (27.66–37.22)	18.57 (17.67–19.52)	1.58 (1.12–2.23)	2.08 (1.68–2.58)	0.76 (0.51–1.13)
Alcohol use disorder	13.03 (8.59–19.29)	12.69 (9.48–16.77)	8.37 (7.91–8.86)	1.64 (1.03–2.61)	1.59 (1.15–2.19)	1.03 (0.59–1.80)
Alcohol abuse	5.03 (2.46–10.02)	5.78 (3.87–8.55)	4.63 (4.28–5.01)	1.09 (0.52–2.29)	1.26 (0.82–1.94)	0.86 (0.37–2.01)
Alcohol dependence	8.01 (4.69–13.33)	6.91 (4.45–10.59)	3.74 (3.48–4.02)	2.24 (1.25–4.01)	1.90 (1.19–3.04)	1.71 (0.57–2.43)
Drug use disorder	5.85 (2.95–11.28)	4.90 (2.93–8.08)	1.94 (1.75–2.14)	3.15 (1.52–6.51)	2.58 (1.52–4.36)	1.21 (0.50–2.93)
Drug abuse	2.69 (0.97–7.24)	3.16 (1.68–5.88)	1.52 (1.37–1.70)	1.78 (0.62–5.10)	2.10 (1.09–4.05)	0.84 (0.25–2.85)
Drug dependence	5.42 (2.60–10.96)	3.44 (1.75–6.67)	0.56 (0.47–0.66)	10.21 (4.69–22.23)	6.07 (2.96–12.43)	1.61 (0.57–4.50)
Nicotine dependence	21.00 (15.56–27.72)	24.76 (20.55–29.51)	12.54 (11.79–13.32)	1.85 (1.29–2.67)	2.29 (1.80–2.90)	0.81 (0.52–1.25)
Major depression	26.94 (19.95–35.30)	100.00	4.10 (3.84–4.38)	NA	NA	NA
Any anxiety disorder	29.85 (22.68–38.15)	37.62 (32.47–43.08)	10.59 (9.98–11.24)	3.59 (2.49–5.18)	5.04 (4.00–6.33)	0.71 (0.46–1.08)
Panic disorder	11.84 (7.30–18.66)	9.99 (7.40–13.34)	2.00 (1.84–2.17)	6.60 (3.88–11.21)	5.31 (3.79–7.42)	1.21 (0.66–2.22)
Social anxiety disorder	7.60 (4.26–13.21)	10.76 (7.62–14.98)	2.61 (2.37–2.86)	3.07 (1.64–5.76)	4.46 (3.03–6.56)	0.68 (0.34–1.35)
Specific phobia	10.79 (6.45–17.51)	18.04 (14.31–22.50)	6.95 (6.46–7.47)	1.62 (0.93–2.83)	2.94 (2.23–3.88)	0.55 (0.29–1.03)
Generalized anxiety disorder	15.33 (10.75–21.39)	17.20 (13.36–21.85)	1.76 (1.59–1.95)	10.10 (6.63–15.40)	11.12 (8.15–15.18)	0.87 (0.53–1.42)
Conduct disorder	3.92 (1.16–12.35)	2.14 (1.07–4.22)	1.02 (0.89–1.17)	3.95 (1.14–13.69)	2.09 (1.03–4.24)	1.86 (0.44–7.92)
Pathological gambling	0.00	0.20 (0.05–0.82)	0.16 (0.12–0.21)	NA	1.26 (0.30–5.35)	NA
Any psychotic disorder	3.12 (1.39–6.86)	3.09 (1.73–5.49)	0.29 (0.23–0.37)	11.02 (4.66–26.03)	10.38 (5.48–19.68)	1.01 (0.37–2.77)
Any substance use[c]	69.52 (61.99–76.14)	77.63 (73.07–81.61)	71.83 (70.72–72.92)	0.89 (0.64–1.25)	1.36 (1.08–1.72)	0.66 (0.44–0.99)
Any tobacco use	40.19 (32.76–48.09)	39.64 (34.89–44.60)	28.13 (27.03–29.27)	1.72 (1.24–2.38)	1.67 (1.37–2.04)	1.02 (0.69–1.51)
Any alcohol use	57.32 (49.60–64.70)	64.44 (59.31–69.26)	65.54 (64.38–66.68)	0.71 (0.52–0.96)	0.95 (0.77–1.18)	0.74 (0.52–1.06)
Any drug use	11.97 (7.77–17.98)	10.23 (7.33–14.09)	6.11 (5.74–6.51)	2.09 (1.28–3.40)	1.74 (1.22–2.49)	1.19 (0.66–2.17)
Self-medication[d]						
Alcohol use to relieve symptoms	11.38 (7.46–16.98)	8.38 (5.93–11.73)	1.30 (1.16–1.45)	9.77 (6.06–15.75)	6.68 (4.52–9.86)	1.40 (0.77–2.57)
Use of nonprescription medicine	0.66 (0.17–2.58)	1.78 (1.01–3.09)	0.30 (0.23–0.39)	2.24 (0.55–9.23)	6.05 (3.20–11.42)	0.37 (0.08–1.66)
	Mean (95% CI)	Mean (95% CI)	Mean (95% CI)	*t* score	*P* value	*t* score	*P* value	*t* score	*P* value
SF-12v2									
Physical component summary	45.51 (43.29–47.74)	47.26 (45.99–48.53)	50.63 (50.41–50.85)	−4.64	<.0001	−5.25	<.0001	−1.38	.17
Social function scale	41.26 (39.27–43.26)	44.35 (42.91–45.79)	51.92 (51.78–52.05)	−10.74	<.0001	−10.53	<.0001	−2.59	.01
Role emotional scale	40.44 (38.07–42.80)	42.21 (40.79–43.62)	51.14 (50.98–51.31)	−9.07	<.0001	−12.60	<.0001	−1.34	.19
Mental health scale	41.55 (39.37–43.73)	42.40 (41.16–43.64)	52.33 (52.16–52.50)	−9.91	<.0001	−15.98	<.0001	−0.68	.50

[a]Compared to the general population.
[b]Any psychiatric disorder and any Axis I disorder does not include either dysthymic disorder or CMDD.
[c]Any substance use includes any tobacco use, any alcohol use, and any drug use.
[d]Either self-medication for dysthymic disorder or CMDD.
Abbreviations: NA = not applicable, OR = odds ratio, SF-12v2 = 12-item Short Form Health Survey, version 2.

remained the same. Most differences involved changes in the level of significance of the findings (but never change in direction) due to the smaller size of the sample excluding from the dysthymic disorder group individuals with lifetime MDE. The odds of having public insurance and living in the northeast, which were not statistically significant when comparing dysthymic disorder versus CMDD in the main analyses, became significantly greater for individuals with pure dysthymic disorder, whereas the odds of living in a rural area, having a family history of substance use disorder, lifetime GAD, social anxiety disorder (SAD), panic disorder, nicotine dependence, and avoidant personality disorder became significantly lower for individuals with pure dysthymia. Twelve-month SAD, any anxiety disorder, any substance use disorder, and alcohol use became significantly lower for individuals with pure dysthymic disorder. There were no differences in being 65 years or older, having a history of parental loss, the social functioning scale, and rates of pharmacologic treatment among individuals with pure dysthymic disorder and CMDD (results available upon request).

Dysthymic disorder versus nonchronic MDD. The comparison between individuals with dysthymic disorder and those with nonchronic MDD (episodes < 2 years) revealed several differences, as expected. The odds of having public insurance, living in the northeast, being widowed, having less than high school education, and having past 12-month conduct disorder became significantly greater for individuals with dysthymic disorder. The odds of having a family income between $20,000–$34,000 or greater than $70,000, any lifetime psychiatric disorder, panic disorder, SAD, any substance use disorder in past 12 months, nicotine dependence, any anxiety disorder, and SAD and the physical component scale became significantly lower for individuals with dysthymic

Table 5. Lifetime Course and Treatment-Seeking for Dysthymic Disorder and Chronic Major Depressive Disorder (CMDD)

Variable	Dysthymic Disorder, n = 456 (0.9%), Mean (95% CI)	CMDD, n = 1,377 (3.1%), Mean (95% CI)	Dysthymic Disorder vs CMDD	
			t Score	*P* Value
Age at onset, y	31.46 (29.54–33.38)	31.30 (30.22–32.38)	−0.84	.41
No. of MDEs	5.58 (3.82–7.34)	6.87 (5.70–8.04)	−1.28	.21
Age at first treatment, y	35.96 (33.50–38.42)	35.43 (34.06–36.80)	1.05	.30
Duration of longest episode, y	5.35 (4.57–6.12)	6.11 (5.45–6.78)	−1.43	.16
	% (95% CI)	% (95% CI)	OR (95% CI)	AOR[a] (95% CI)
Any treatment	57.10 (51.58–62.44)	72.46 (69.28–75.42)	0.65 (0.49–0.85)	0.74 (0.56–0.98)
Treated as outpatient	49.24 (43.93–54.56)	64.73 (61.22–68.08)	0.66 (0.51–0.86)	0.74 (0.57–0.95)
Treated as inpatient (hospitalized)	8.66 (6.30–11.79)	15.68 (13.69–17.91)	0.71 (0.50–0.99)	0.62 (0.42–0.90)
Emergency room admittance	7.30 (5.10–10.34)	12.46 (10.46–14.79)	0.70 (0.46–1.07)	0.62 (0.40–0.97)
Received pharmacologic treatment	43.97 (38.58–49.51)	58.75 (55.33–62.10)	0.71 (0.55–0.93)	0.79 (0.60–1.04)

[a]Adjusted by age, sex, race, nativity, marital status, urbanicity, family and individual income, region, and insurance.
Abbreviations: AOR = adjusted odds ratio, MDE = major depressive episode, OR = odds ratio.

disorder. On the other hand, the odds of being male, never being married, being 30 years or older, having a parental history of divorce, having a lifetime conduct disorder, past 12-month alcohol use, and the social functioning scale no longer differed among individuals with dysthymic disorder and nonchronic MDD. With regards to treatment, any treatment, hospitalization, and outpatient treatments were no longer significant in the unadjusted analyses. Likewise, there were no differences for any type of treatment, pharmacologic treatment, emergency room, hospitalization, and outpatient treatment in the adjusted analyses (results upon request).

DISCUSSION

In a large, nationally representative sample of US adults, we found that (1) the prevalence of CMDD exceeds the prevalence of dysthymic disorder; (2) CMDD and dysthymic disorder share most sociodemographic correlates; (3) individuals with CMDD and dysthymic disorder have high rates of Axis I and Axis II comorbidity, with an almost identical pattern in both disorders; (4) the prevalence of most previously identified risk factors for MDD and level of psychosocial functioning and disability are similar in CMDD and dysthymic disorder; and (5) whereas more than half of individuals with each disorder have a lifetime history of treatment seeking for depression, individuals with CMDD have higher treatment rates than individuals with dysthymic disorder.

Our study found lower prevalence of CMDD and dysthymic disorder than previously estimated.[21–23] The prevalence of MDD appears to be increasing in the United States and in NESARC findings,[1] which suggests that our lower estimates of CMDD and dysthymic disorder are unlikely due to true decreases in prevalence. A more likely explanation is that differences in prevalence estimates of CMDD and dysthymic disorder reflect changes in their operationalization across *DSM* editions or in the assessment instruments.[22,23] Inclusion of individuals with bipolar disorder in previous studies[21,22] may have led to overestimation of dysthymic disorder prevalence in previous studies. Furthermore, other studies did not assess CMDD, which may have led to the inclusion of some cases of CMDD in dysthymic disorder samples, given how dysthymic disorder was defined in the *DSM-III* and the differences in instruments to assess for the disorders. Although less likely, improvements in the quality of antidepressant treatment may have also contributed to decreasing the chronicity of depressive disorders.[53]

Nevertheless, even the conservative estimates from our study indicate that about 4% of the general population met lifetime criteria for a chronic depressive disorder, and half of those met criteria at the time of the interview. This finding is consistent with studies documenting that one-fourth to one-third of individuals with unipolar depression present chronic episodes.[4–9] The prevalence of CMDD and dysthymic disorder, the high number of depressive episodes experienced by individuals suffering from them, the extended length of some of those episodes, and their impact on the quality of life highlight the public health significance of chronic depressive disorders.

Consistent with epidemiologic studies of depressive disorders,[1,54–56] we found that women have an increased risk for both CMDD and dysthymic disorder. Our sample also confirmed other previously identified correlates of depressive disorders, such as lower educational status and lower personal and family income.[22,23] Previous studies have associated early-onset MDD and chronic depression with significant psychosocial consequences such as lower educational attainment[57,58] and marriage rates,[57,59] especially among women.[60] Our findings document that those results hold for CMDD and dysthymic disorder and that the strength of associations with sociodemographic correlates is similar in both diagnoses. Furthermore, risk factors for MDD[45,46] increase the risks of CMDD and dysthymic disorder by an equal magnitude. The increased odds of chronic depression (CMDD and dysthymic disorder) in older age have been hypothesized to represent a residual state that follows MDD.[23]

Similarities between CMDD and dysthymic disorder also extended to patterns of psychiatric comorbidity. Individuals with either CMDD or dysthymic disorder had high rates of Axis I and II comorbidity, as found in previous studies.[61–63]

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Individuals with either disorder had greater odds of most psychiatric disorders relative to individuals without chronic depression. Our findings suggest that comorbidity patterns for CMDD and dysthymic disorder in a large community sample are almost identical in both the lifetime and 12-month time frames. The chronicity of depression over time may overshadow differences in acute symptom severity between CMDD and dysthymic disorder and lead to clinical presentations.

The rate of previously known risk factors for MDD,[47,64,65] such as family history of several psychiatric disorders (including depression), and childhood and adulthood risk factors were also similar in CMDD and dysthymic disorder. Our findings accord with family studies[66,67] that have found similar patterns of familial aggregation of psychiatric disorders (particularly mood disorders) among individuals with various chronic depressive disorders, regardless of whether the index diagnosis was CMDD or dysthymic disorder.[68,69] Furthermore, CMDD and dysthymic disorder had similar ages of onset and number of MDEs. To the extent that shared risk factors and course suggest commonalities between nosologic entities,[70,71] these findings suggest the similarity between CMDD and dysthymic disorder. Longitudinal studies of clinical samples and studies examining the validity of the distinction between the various forms of chronic depressive disorders have also suggested important similarities between CMDD and dysthymic disorder.[20,29,30,72] Prospective studies have reported that almost all patients with dysthymic disorder eventually experience exacerbations that meet criteria for MDEs and have suggested that these different subtypes of chronic depression represent phases of the same disorder.[15] Future studies should examine whether there are also genetic and neuroimaging similarities between CMDD and dysthymic disorder, as well as the clinical utility of maintaining them as 2 separate nosologic entities.

Both CMDD and dysthymic disorder were associated with delays in seeking and failure to seek treatment. Treatment rates for individuals with CMDD were significantly higher than those with dysthymic disorder, resembling those previously reported for individuals with episodic MDD.[1] Chronic MDD may be more likely to attract notice and lead to treatment than dysthymic disorder, which many individuals may consider a fixed feature of their personality.[66,73] Our data suggest a significant increase in the treatment rate of dysthymic disorder from the approximately 25% reported in the only prior estimate 20 years ago.[23] This increase in treatment rates is consistent with recent trends in the treatment of MDD.[74–76] Greater access to care, educational campaigns, and advent of safer and better tolerated pharmacologic treatment have been hypothesized to improve the use of mental health services by patients with MDD,[75] and these factors may have encouraged treatment of dysthymic disorder. Nevertheless, our data continue to document substantial unmet need among chronically depressed individuals, despite the availability of evidence-based treatments.[77,78] Although the severity and functional impairment of these disorders may promote treatment seeking, their chronicity may lead individuals to misinterpret their symptoms as unmodifiable personality traits, interfering with their recognition and impeding their treatment.[73]

Our study has the limitations common to most large epidemiologic studies. First, subtle distinctions in the course of the disorders and assessment with structured interviews and reliance on interviewed self-report raise the possibility of misclassification, recall bias, and increased error variance. Second, diagnoses were gathered by lay interviewers. Nonetheless, the reliability of AUDADIS-IV diagnoses ranges from good to excellent. Third, because the NESARC sample only included civilian households and group quarters populations 18 years and older, information was unavailable on adolescents and incarcerated individuals. Fourth, the cross-sectional design precludes identifying the directionality between dysthymic disorder and CMDD and their correlates. Fifth, some individuals in the sample met criteria for the 2 diagnoses at some point during their lifetime, which could have contributed to artificially increasing the similarity between dysthymic disorder and CMDD. However, the same pattern of results emerged regardless of whether those individuals were included in the CMDD or dysthymic disorder group, suggesting that our findings are robust to sample specification. Sixth, to limit subject burden, the comorbidity assessments, although extensive, did not include all major Axis I or Axis II diagnoses.

Despite these limitations, the NESARC constitutes the largest nationally representative survey to date and the first to include detailed information on *DSM-IV* dysthymic disorder and CMDD. Chronic major depressive disorder and dysthymic disorder appear to have important similarities in sociodemographic correlates, patterns of comorbidity, risk factors, course, and unmet treatment needs. Studies examining genetic and other biologic markers are still needed to help improve the nosology of CMDD and dysthymic disorder and the adequacy of their treatment.

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside US Food and Drug Administration–approved labeling has been presented in this article.
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