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BRIEF COMMUNICATION

Rate and Predictors of Persistent Major Depressive Disorder in a Nationally Representative Sample

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Abstract This study examined predictors of persistent major depressive disorder over 10 years, focusing on the effects of clinical variables, physical health, and social support. Data from the National Survey of Midlife Development in the United States in 1995–1996 and 2004–2006 were analyzed. Logistic regression was used to predict non-recovery from major depression among individuals who met clinical-based criteria for major depressive disorder at baseline. Fifteen percent of the total sample was classified as having major depression in 1995–1996; of these individuals, 37 % had major depression in 2004–2006. Baseline variables that were significantly associated with persistent major depression at follow-up were being female, having never married, having two or more chronic medical conditions, experiencing activity limitation, and less contact with family. Therefore, treatment strategies focused on physical health, social support, and mental health needs are necessary to comprehensively address the factors that contribute to persistent major depressive disorder.

Keywords Major depressive disorder · Social support · Chronic medical condition · Anxiety

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Introduction

While most individuals recover from an episode of major depression, a significant proportion of people experience long-term symptoms. Around two-thirds of the individuals with major depressive disorder (MDD) recover within 1–2 years (Melartin et al. 2004; Mueller et al. 1996; Vinamaki et al. 2006). For some individuals, however, the course of depression includes periods of recurrence and recovery, while others experience sustained depressive symptoms over the course of many years (Mueller et al. 1996; Solomon et al. 1997).

The majority of information about the factors that contribute to recovery from or persistence of MDD comes from studies of clinic-based and inpatient samples. Persistence of MDD is associated with greater severity and longer duration of the depressive episode (Melartin et al. 2004; Meyers et al. 2002; Mueller et al. 1996; Nasser and Overholser 2005; Szadoczky et al. 2004) and having had a previous episode of depression (Ezquiaga et al. 1999; Mueller et al. 1996). Comorbid psychiatric disorders, particularly anxiety and personality disorders, are consistently linked with non-recovery or longer duration of depressive symptoms (Ezquiaga et al. 1999; Leskela et al. 2006; Melartin et al. 2004; Viinamaki et al. 2006). Comorbid medical disorders also have deleterious effects; Hughes et al. (1993) found that individuals under 60 years old with major depression whose chronic medical conditions interfered with everyday activities were more likely to have elevated depressive symptoms 6 months later. In a systematic review of depression studies in primary care, Gilchrist and Gunn (2007) found that risk factors for persistent depression were suicidal thoughts, severity and chronicity of symptoms, low quality of life, less education, and unemployment. Conversely, better depression outcomes are associated with greater

social support (Ezquiaga et al. 2004; Gilchrist and Gunn 2007; Leskela et al. 2006; Nasser and Overholser 2005; Szadoczky et al. 2004; Zlotnick et al. 1996), being married (Meyers et al. 2002; Mueller et al. 1996), receiving adequate antidepressant treatment (Meyers et al. 2002), and experiencing fewer stressful life events (Leskela et al. 2006; Zlotnick et al. 1996).

These clinic-based studies provide an overview of the multiple variables that influence the course of depressive symptoms. Most of the studies included a longitudinal study design with follow-up periods ranging from 3 months (e.g., Meyers et al. 2002; Nasser and Overholser 2005) to 1–2 years (Leskela et al. 2006; Melartin et al. 2004; Szadoczky et al. 2004; Zlotnick et al. 1996) to 15 years in the case of the National Institutes of Mental Health Collaborative Depression Study (Mueller et al. 1996). However, these studies are limited by small samples of inpatients and/or outpatients, which prevents generalization to a wider population. Many people with depression do not receive treatment, delay in seeking treatment, or do not adhere to treatment (Pampallona et al. 2002; Wang et al. 2005) and, therefore, would not be captured in clinic-based studies.

A few community-based and nationally representative studies provide insight into factors associated with depression in the broader community. The main predictors of depressive symptoms include low social support (Bisschop et al. 2004; Hough et al. 1999; McLeod et al. 1992; Spijker et al. 2004; Strine et al. 2009), comorbid anxiety (Gayman et al. 2008; Hasin et al. 2005; Strine et al. 2009), having a chronic medical illness (Spijker et al. 2004; Young et al. 2001), and factors related to chronic medical illness, such as pain, activity and physical limitations (Gayman et al. 2008; Strine et al. 2009), and illness demands (Hough et al. 1999). Three of these studies (Hasin et al. 2005; Hough et al. 1999; Strine et al. 2009), however, examine depressive symptoms cross-sectionally and are therefore unable to comment on persistence of depression. Young et al. (2008) and McLeod et al. (1992) use diagnostic measures of MDD, as opposed to depressive symptoms; however Young and colleagues group both depressive and anxiety disorders together.

According to existing literature, persistent depression is influenced by a number of clinical, health-related, and psychosocial factors. Many previous studies, however, have been limited by sample size, population, follow-up time, and measurement of depression. Therefore, we examined the predictors of persistent MDD over the course of 10 years in a nationally representative sample. Predictors of interest include demographic characteristics, clinical factors (baseline depression severity, comorbid anxiety, treatment, insurance for mental health treatment), health-related variables (chronic medical conditions and activity limitation), and social support (emotional support, tangible support, and contact with family and friends).

Method

Sample

Midlife Development in the United States (MIDUS) is an interdisciplinary investigation of the behavioral, psychological, and social factors that influence health and well-being (Ryff et al. 2007). MIDUS data was collected through phone and mail surveys in two waves in 1995–1996 (MIDUS I) and 2004–2006 (MIDUS II). Respondents for MIDUS I were drawn from a nationally representative random-digit-dial (RDD) sample of noninstitutionalized, English-speaking adults aged 25–74 selected from working telephone banks in the coterminous United States. Men and older adults were oversampled. The response rate for the MIDUS I telephone interview was 70 %. Of the telephone respondents, 87 % completed the mail survey, for an overall response rate of 61 % (n = 3,487). For MIDUS II, 65 % of the original participants completed the telephone and mail surveys (n = 2,257). MIDUS I also included 3 additional samples: oversamples from five metropolitan areas in the United States, siblings of individuals in the RDD sample, and a RDD sample of twin pairs (Ryff et al. 2007). The sample for our analysis included participants from the main RDD sample who had depression at wave I and also participated in wave II. Of the 502 respondents with depression in MIDUS I, 309 (62 %) completed the follow-up.

Measures

Diagnosis of major depression was assessed using the World Health Organization Composite International Diagnostic Interview Short Form (CIDI-SF), which is based on the criteria in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition* (Kessler et al. 1998). The CIDI-SF was administered as part of the telephone survey to assess symptoms of major depression in the past 12 months and results in a dichotomous variable denoting whether or not a person is classified as having major depression. The psychometric properties of the CIDI-SF have been shown to be strong, with good agreement with the full CIDI and Structured Clinical Interview for DSM-III-R (Aalto-Setala et al. 2002; Blazer et al. 1994; Kessler et al. 1998).

Demographic variables include age, gender, race, income, education level, working status, and marital status. Race was categorized as white and non-white. Income was divided into below 200 % of poverty for an individual ($15,000 in 1995) and at or above 200 % of poverty. Education was categorized as having up to a general education development (GED) certificate, completing high

school degree, completing some college, and graduating college or more. Working status was categorized as currently working or non-working. Marital status was categorized as married; separated, divorced, or widowed; and never married.

Clinical variables included baseline depression severity, comorbid anxiety disorder, visits to a mental health professional, taking prescription medication for mental or emotional problems, and insurance coverage for mental health. We used the continuous measure of depression from the CIDI-SF as the measure of baseline severity. Presence or absence of comorbid generalized anxiety disorder was also determined by the CIDI-SF. Respondents were asked how many times they saw a professional for mental health problems in the prior 12 months; responses were dichotomized into saw a professional or did not see a professional. Medication taking was assessed by the question, "During the past 30 days, have you taken prescription medication for nerves, anxiety, or depression?" Insurance coverage for mental health was assessed by, "Do you have health insurance that covers the cost of any mental health visits?"

Health variables were number of chronic medical conditions and activity limitation due to physical or mental health. Respondents were asked if they experienced or were treated for any of the following seven chronic medical conditions in the past 12 months: asthma, bronchitis, or emphysema; arthritis, rheumatism, other bone or joint disease; HIV/AIDS; high blood pressure; diabetes; multiple sclerosis, epilepsy, or other neurological disorders; stroke. Chronic medical conditions were categorized as having no chronic medical conditions, having one chronic medical condition, and having two or more chronic medical conditions. Activity limitation was categorized as whether or not an individual was unable to work or carry out normal activities due to physical or mental health for one or more days in the past 30 days.

Three types of social support were assessed: emotional support, unpaid assistance, and social contact with family and friends. Emotional support and unpaid assistance were assessed by the number of hours per month the respondent received support or assistance from spouse or partner, family members, and friends. Social contact with family and friends was categorized into being in contact one time or fewer per week or more than once a week.

Statistical Analyses

Data were analyzed with SPSS version 17. Sampling weights were applied to all analyses to adjust for possible selection bias and differential non-response. Descriptive statistics were used to characterize the sample. Chi square and *t* tests were used to assess baseline differences in demographic, clinical, and psychosocial variables between individuals who were depressed and not depressed at follow-up. Variables that were significant at the bivariate level were entered into a logistic regression to determine unadjusted and adjusted odds ratios (OR). Adjusted models included all variables significant in the bivariate analyses. Statistical tests with a p value less than 0.05 were considered to be significant.

Results

The percentage of individuals meeting the criteria for MDD in the past 12 months in the full 1995–1996 MIDUS sample was 14.9 % (weighted n = 331). The mean age of people with depression was 41.4 years, with a standard deviation (SD) of 11.1 years. The majority of respondents were female (66 %), white (92 %), working (62 %), and married (52 %). Just over half of the participants (51 %) had one or more chronic condition. Additionally, about half of the sample had a personal income of less than $15,000 in the past 12 months. In 2004–2006, 36.5 % (weighted n = 121) of the individuals who were depressed at baseline met the criteria for major depression and 63.5 % (weighted n = 210) were classified as not depressed.

Among people classified as having depression in 1995–1996, significant bivariate associations were found between depression in 2004–2006 the following baseline variables: being female ($\chi^2 = 12.78, p < 0.0001$), having an income below $15,000 ($\chi^2 = 4.02, p = 0.045$), having less than a high school education ($\chi^2 = 10.44,\ p = 0.015$), having never married ($\chi^2 = 7.63, 0.022$), having a comorbid anxiety disorder ($\chi^2 = 7.78, p = 0.005$), taking a prescription for mental health problems ($\chi^2 = 7.47,\ p = 0.006$), having two or more physical chronic diseases ($\chi^2 = 15.99$, $p = 0.001$), experiencing activity limitations ($\chi^2 = 24.35$, $p < 0.0001$), and having contact with family members less than one time per week ($\chi^2 = 13.14,\ p = 0.001$). People who were depressed at time 2 had significantly higher mean depression symptoms at baseline (mean 5.99, SD 0.99) compared to people who were not depressed (mean 5.54, SD 1.03; t value $= -3.98, df = 329, p < 0.0001$). No bivariate associations were found between depression at time 2 and age, race, working status, insurance coverage for mental health treatment, having seen a mental health professional, contact with friends, emotional support, or tangible support.

In the multivariate logistic regression model, among people who met the criteria for MDD at baseline, the baseline variables that were significantly associated with depression status at follow-up were gender, marital status, chronic medical conditions, activity limitation, and contact with family (omnibus test: $\chi^2 = 58.28,\ df = 14,\ p < 0.0001$). People with two or more chronic medical conditions had 2.89 times the odds of remaining depressed compared to

individuals with no chronic medical conditions (95 % CI 1.25–6.55, $p = 0.013$). Women had 2.48 the odds of remaining depressed compared to men (95 % CI 1.25–4.93, $p = 0.009$). People who had never married had 2.42 times the odds of being depressed compared to married individuals (95 % CI 1.01–5.81, $p = 0.047$). People who experienced activity limitation due to physical or mental health had 2.19 times the odds of being depressed compared to people who did not have activity limitations (95 % CI 1.21–3.97, $p = 0.01$). People who were in contact with their family members less than once a week had 2.07 times the odds of being classified as depressed 10 years later than people who were in greater contact (95 % CI 1.51–3.72, $p = 0.015$). Income, being separated, divorced, or widowed compared to being married, education level, having general anxiety disorder at baseline, having one chronic medical condition compared to none, baseline depression severity, and taking prescriptions for mental health problems were not significantly associated with non-recovery from depression in 2004–2006 in the adjusted model.

Discussion

Of the individuals who were classified as having major depressive disorder in the past 12 months in 1995–1996, 37 % were also depressed in 2004–2006, suggesting that a substantial minority of individuals continue to experience persistent MDD. This rate of persistent depression is likely a conservative estimate because people classified as MDD at follow-up may experience a relapse at a later time. Poor physical health and lack of social support, along with demographic and clinical factors, were important predictors of persistent MDD over the course of 10 years. Significant predictors of MDD persistence included having two or more chronic medical conditions, female gender, never having been married, activity limitation, and less contact with family.

The majority of individuals (64 %) who were classified as having major depressive disorder in 1995–1996 were no longer classified as having MDD in 2004–2006. The proportion of individuals in this study who recovered from depression is somewhat lower than what has been found in the literature. Many investigators report that about two-thirds of individuals recover from Major Depression within 1–2 years (Melartin et al. 2004; Parker et al. 2000; Viinamaki et al. 2006). Results from the National Institutes of Mental Health Collaborative Depression Study (CDS) indicate that the probability of remaining ill for 5 years was 11.5 % (Keller et al. 1992) and that 93 % of participants recovered by year 10 (Mueller et al. 1996). There are several possible explanations for the discrepancy. First, the MIDUS study includes a nationally representative sample, whereas the participants in the CDS and other similar studies were recruited from clinics when they sought treatment. According to an analysis of the 1995 MIDUS, 58 % of individuals with MDD received mental health treatment in the previous year, but only 17 % received care that was concordant with evidence-based guidelines (Wang et al. 2000). Therefore, the individuals in this analysis may have been less likely to receive any or adequate care compared to persons in clinic samples. Second, individuals in the MIDUS study were not assessed continuously over the 10 years; therefore a classification of MDD in 2004–2006 may represent a continuation of symptoms, a relapse, or recurrence.

Of the demographic variables, gender and marital status were significantly associated with persistence of MDD in the multivariate model. While women have a higher rate of depression compared to men (Kessler et al. 1993), investigators report mixed findings on the impact of gender on recovery from depression (Herrman et al. 2002; Meyers et al. 2002; Spijker et al. 2004; Zlotnick et al. 1996).

Clinical variables in this analysis were not strongly associated with persistence of MDD over the course of 10 years. Comorbid generalized anxiety disorder, baseline depression severity, and taking a prescription for nerves, anxiety, or depression were significantly associated with persistent depression in the unadjusted logistic regression models, but the associations became non-significant when in the multivariate model. These findings are in contrast to the results from several other studies (Ezquiaga et al. 1998; McLeod et al. 1992; Melartin et al. 2004; Meyers et al. 2002; Nasser and Overholser 2005). In a nationally representative sample, Young et al. (2008) found that only about a third of individuals with depressive or anxiety disorders receive appropriate treatment. Additionally, specialty mental health services use decreased among people who recovered, but remained the same for individuals with persistent mental illness (Young et al. 2008). Similarly, a low percentage of individuals with MDD in the MIDUS sample received adequate mental health treatment (Wang et al. 2000).

Physical health variables, specifically number of chronic medical conditions and days of limited activity, were also important in predicting persistence of depression. Chronic medical conditions and mental disorders are highly comorbid; data from the National Comorbidity Survey Replication indicates that approximately 68 % of individuals with mental disorders have at least one chronic medical condition (Druss and Walker 2011). The complex and reciprocal relationship between chronic medical conditions and depression has been recognized; physical conditions may lead to or exacerbate depression and vice versa (Chapman et al. 2005; Gayman et al. 2008; Katon 2003). The results of this study indicate that having two or more

chronic medical conditions contributes to experiencing depression 10 years later. However, only having one chronic medical condition did not increase the odds of being classified as having MDD in 2004–2006. Compared to individuals with zero or one chronic medical condition, people with multiple chronic medical conditions potentially have worse health, must adhere to complex self-management regimens, and experience more stress, which could all contribute to depression (Bayliss et al. 2003; Stewart et al. 1989). Additionally, days of activity limitation in 1995–1996 were significantly associated with a greater risk of depression 10 years later, independent of the number of chronic medical conditions a person had. In a qualitative study, Bayliss et al. (2003) found that individuals with multiple chronic conditions felt that the compound effects of and physical limitations resulting from their conditions were major barriers to self-care. Vilhjalmson (1998) reports that chronic medical conditions affect depression both directly and indirectly by increasing domestic, work-related, and financial stress.

The social support variable that predicted depression over the course of 10 years was frequency of contact with family. Individuals who were in contact with family less than once a week were more likely to have MDD in 2004–2006. Likewise, people who were married were less likely to have persistent depression compared to those who have never married. These findings are supported by the work of other researchers who have found that higher family and partner support and better family functioning improves the chances of recovery from depression (Ezquiaga et al. 1998; Keitner et al. 1992; Nasser and Overholser 2005; Spijker et al. 2004). Social support from family and friends may contribute to recovery by depression by providing a sense of belonging and intimacy, reducing loneliness, and potentially facilitating access to other resources or assistance in initiating or maintaining treatment regimens (Cohen et al. 2000).

There are several limitations of this study that should be considered. The MIDUS dataset includes information from two time points that are 10 years apart; individuals were not assessed for MDD repeatedly over the course of the study. Therefore, we could not assess relapses and recurrences of depression that occurred between surveys and we were unable to determine if the people who were classified as having MDD in 2004–2006 were depressed continuously over the 10 years or were experiencing a relapse. The MIDUS survey did not assess lifetime history of depression or the number of episodes of major depression a person experienced before taking part in the study. Despite these limitations, this present study also has several strengths, including the use of a nationally representative dataset, longitudinal design, and validated clinical diagnostic tool for depression (CIDI-SF).

The results of this study have implications for clinical practitioners and researchers. Although most individuals recover from major depressive disorder, a significant minority continues to deal with depression over the course of many years. Many individuals with depression receive treatment in primary care (Kessler et al. 2005); therefore providers should regularly monitor depressive symptoms and ensure adequate depression treatment as needed. Chronic medical conditions, which negatively impact depression outcomes, are also often managed in primary care. Primary care providers face challenges in adequately addressing both mental and physical health needs, often due to time constraints and competing demands (Collins et al. 2004). Collaborative care approaches, which involve a multidisciplinary team in coordinating depression and medical treatment and follow-up, are effective in facilitating significant reductions in depressive symptoms (Butler et al. 2008; Gilbody et al. 2006; Thielke et al. 2007). These approaches are recommended for treating mental disorders and medical comorbidities in primary care (Druss and Walker 2011). Future research should continue to examine the complex nature of the relationship between chronic medical disorders and comorbid psychiatric conditions. Addressing these conditions and strengthening social support systems could be important strategies for reduce the burden of depression.

References

Aalto-Setala, T., Haarasilta, L., Marttunen, M., Tuulio-Henriksson, A., Poikolainen, K., Aro, H., & Lonnqvist, J. (2002). Major depressive episode among young adults: CIDI-SF versus SCAN consensus diagnoses. *Psychological Medicine, 32*(7), 1309–1314.

Bayliss, E. A., Steiner, J. F., Fernald, D. H., Crane, L. A., & Main, D. S. (2003). Descriptions of barriers to self-care by persons with comorbid chronic diseases. *Annals of Family Medicine, 1*(1), 15–21.

Bisschop, M. I., Knegsman, D. M. W., Beekman, A. T. F., & Deeg, D. J. H. (2004). Chronic diseases and depression: The modifying role of psychosocial resources. *Social Science and Medicine, 59*(4), 721–733.

Blazer, D. G., Kessler, R. C., McGonagle, K. A., & Swartz, M. S. (1994). The prevalence and distribution of major depression in a national community sample: The National Comorbidity Survey. *American Journal of Psychiatry, 151*(7), 979–986.

Butler, M., Kane, R., McAlpine, D., Kathol, R.G., Fu, S.S., Hagedorn, H., & Wilt, T. J. (2008). Integration of Mental Health/Substance Abuse and Primary Care No. 173 (Vol. AHRQ Publication No. 09-E003). Rockville: Minnesota Evidence-Based Practice Center, Agency for Healthcare Research and Quality.

Chapman, D. P., Perry, G. S., & Strine, T. W. (2005). The vital link between chronic disease and depressive disorders. *Preventing Chronic Disease, 2*(1), A14.

Cohen, S., Gottlieb, B. H., & Underwood, L. G. (2000). Social relationships and health. In S. Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support measurement and*

intervention: A guide for health and social scientists (pp. 3–25). Oxford: Oxford University Press.

Collins, K. A., Westra, H. A., Dozois, D. J., & Burns, D. D. (2004). Gaps in accessing treatment for anxiety and depression: Challenges for the delivery of care. *Clinical Psychology Review, 24*(5), 583–616.

Druss, B. G., & Walker, E. R. (2011). Mental disorders and medical comorbidity. *The Synthesis Project. Research Synthesis Report*, *21*, 1–26.

Ezquiaga, E., Garcia, A., Bravo, F., & Pallares, T. (1998). Factors associated with outcome in major depression: A 6-month prospective study. *Social Psychiatry and Psychiatric Epidemiology, 33*(11), 552–557.

Ezquiaga, E., Garcia, A., Pallares, T., & Bravo, M. F. (1999). Psychosocial predictors of outcome in major depression: A prospective 12-month study. *Journal of Affective Disorders, 52*(1–3), 209–216.

Ezquiaga, E., Garcia-Lopez, A., de Dios, C., Leiva, A., Bravo, M., & Montejo, J. (2004). Clinical and psychosocial factors associated with the outcome of unipolar major depression: A one year prospective study. *Journal of Affective Disorders, 79*(1–3), 63–70.

Gayman, M. D., Turner, R. J., & Cui, M. (2008). Physical limitations and depressive symptoms: Exploring the nature of the association. *Journal of Gerontology: Social Sciences, 63B*(4), S219–S228.

Gilbody, S., Bower, P., Fletcher, J., Richards, D., & Sutton, A. J. (2006). Collaborative care for depression—A cumulative meta-analysis and review of longer-term outcomes. *Archives of Internal Medicine, 166*(21), 2314–2321.

Gilchrist, G., & Gunn, J. (2007). Observational studies of depression in primary care: What do we know? *BMC Family Practice, 8*, 28.

Hasin, D. S., Goodwin, R. D., Stinson, F. S., & Grant, B. F. (2005). Epidemiology of major depressive disorder: Results from the National Epidemiologic Survey on alcoholism and related conditions. *Archives of General Psychiatry, 62*(10), 1097–1106.

Herrman, H., Patrick, D. L., Diehr, P., Martin, M. L., Fleck, M., Simon, G. E., & Buesching, D. P. (2002). Longitudinal investigation of depression outcomes in primary care in six countries: The LIDO study. Functional status, health service use and treatment of people with depressive symptoms. *Psychological Medicine, 32*(5), 889–902.

Hough, E. S., Brumitt, G. A., & Templin, T. N. (1999). Social support, demands of illness, and depression in chronically ill urban women. *Health Care for Women International, 20*(4), 349–362.

Hughes, D. C., DeMallie, D., & Blazer, D. G. (1993). Does age make a difference in the effects of physical health and social support on the outcome of a major depressive episode? *American Journal of Psychiatry, 150*(5), 728–733.

Katon, W. J. (2003). Clinical and health services relationships between major depression, depressive symptoms, and general medical illness. *Biological Psychiatry, 54*(3), 216–226.

Keitner, G. I., Ryan, C. E., Miller, I. W., & Norman, W. H. (1992). Recovery and major depression: Factors associated with twelve-month outcome. *American Journal of Psychiatry, 149*(1), 93–99.

Keller, M. B., Lavori, P. W., Mueller, T. I., Endicott, J., Coryell, W., Hirschfeld, R. M., & Shea, T. (1992). Time to recovery, chronicity, and levels of psychopathology in major depression. A 5-year prospective follow-up of 431 subjects. *Archives of General Psychiatry, 49*(10), 809–816.

Kessler, R. C., Andrews, G., Mroczek, D., Ustun, B., & Wittchen, H. U. (1998). The World Health Organization Composite International Diagnostic Interview Short Form (CIDI-SF). *International Journal of Methods in Psychiatric Research, 7*(4), 171–185.

Kessler, R. C., Demler, O., Frank, R. G., Olfson, M., Pincus, H. A., Walters, E. E., … Zaslavsky, A. M. (2005). US prevalence and treatment of mental disorders: 1990–2003. *New England Journal of Medicine, 352*(24), 2515–2523.

Kessler, R. C., McGonagle, K. A., Swartz, M., Blazer, D. G., & Nelson, C. B. (1993). Sex and depression in the National Comorbidity Survey. I: Lifetime prevalence, chronicity and recurrence. *Journal of Affective Disorders, 29*(2–3), 85–96.

Leskela, U., Rytsala, H., Komulainen, E., Melartin, T., Sokero, P., Lestela-Mielonen, P., & Isometsa, E. (2006). The influence of adversity and perceived social support on the outcome of major depressive disorder in subjects with different levels of depressive symptoms. *Psychological Medicine, 36*(6), 779–788.

McLeod, J. D., Kessler, R. C., & Landis, K. R. (1992). Speed of recovery from major depressive episodes in a community sample of married men and women. *Journal of Abnormal Psychology, 101*(2), 277–286.

Melartin, T. K., Rytsala, H. J., Leskela, U. S., Lestela-Mielonen, P. S., Sokero, T. P., & Isometsa, E. T. (2004). Severity and comorbidity predict episode duration and recurrence of DSM-IV major depressive disorder. *Journal of Clinical Psychiatry, 65*(6), 810–819.

Meyers, B. S., Sirey, J. A., Bruce, M., Hamilton, M., Raue, P., Friedman, S. J., … Alexopoulos, G. (2002). Predictors of early recovery from major depression among persons admitted to community-based clinics—An observational study. *Archives of General Psychiatry, 59*(8), 729–735.

Mueller, T. I., Keller, M. B., Leon, A. C., Solomon, D. A., Shea, M. T., Coryell, W., & Endicott, J. (1996). Recovery after 5 years of unremitting major depressive disorder. *Archives of General Psychiatry, 53*(9), 794–799.

Nasser, E. H., & Overholser, J. C. (2005). Recovery from major depression: The role of support from family, friends, and spiritual beliefs. *Acta Psychiatrica Scandinavica, 111*(2), 125–132.

Pampallona, S., Bollini, P., Tibaldi, G., Kupelnick, B., & Munizza, C. (2002). Patient adherence in the treatment of depression. *British Journal of Psychiatry, 180*, 104–109.

Parker, G., Wilhelm, K., Mitchell, P., & Gladstone, G. (2000). Predictors of 1-year outcome in depression. *Australian and New Zealand Journal of Psychiatry, 34*(1), 56–64.

Ryff, C. D., Almeida, D. M., Ayanian, J. S., Carr, D. S., Cleary, P. D., Coe, C., … Williams, D. (2007). Midlife Development in the United States (MIDUS II), 2004–2006 [Computer file]. ICPSR04652-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Solomon, D. A., Keller, M. B., Leon, A. C., Mueller, T. I., Shea, M. T., Warshaw, M., …, Endicott, J. (1997). Recovery from major depression. A 10-year prospective follow-up across multiple episodes. *Archives of General Psychiatry, 54*(11), 1001–1006.

Spijker, J., de Graaf, R., Bijl, R. V., Beekman, A. T. F., Ormel, J., & Nolen, W. A. (2004). Determinants of persistence of major depressive episodes in the general population. Results from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Journal of Affective Disorders, 81*(3), 231–240.

Stewart, A. L., Greenfield, S., Hays, R. D., Wells, K., Rogers, W. H., Berry, S. D., …, Ware, J. E., Jr. (1989). Functional status and well-being of patients with chronic conditions. Results from the Medical Outcomes Study. *Journal of the American Medical Association, 262*(7), 907–913.

Strine, T. W., Kroenke, K., Dhingra, S., Balluz, L. S., Gonzalez, O., Berry, J. T., & Mokdad, A. H. (2009). The associations between depression, health-related quality of life, social support, life satisfaction, and disability in community-dwelling US adults. *Journal of Nervous and Mental Disease, 197*(1), 61–64.

Szadoczky, E., Rozsa, S., Zambori, J., & Furedi, J. (2004). Predictors for 2-year outcome of major depressive episode. *Journal of Affective Disorders, 83*(1), 49–57.

Thielke, S., Vannoy, S., & Unutzer, J. (2007). Integrating mental health and primary care. *Primary Care, 34*(3), 571–592.

Viinamaki, H., Haatainen, K., Honkalampi, K., Tanskanen, A., Koivumaa-Honkanen, H., Antikainen, R., …, Hintikka, J. (2006). Which factors are important predictors of non-recovery from major depression? A 2-year prospective observational study. *Nordic Journal of Psychiatry, 60*(5), 410–416.

Vilhjalmsson, R. (1998). Direct and indirect effects of chronic physical conditions on depression: A preliminary investigation. *Social Science and Medicine, 47*(5), 603–611.

Wang, P. S., Berglund, P., & Kessler, R. C. (2000). Recent care of common mental disorders in the United States: Prevalence and conformance with evidence-based recommendations. *Journal of General Internal Medicine, 15*(5), 284–292.

Wang, P. S., Berglund, P., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*(6), 603–613.

Young, A. S., Klap, R., Sherbourne, C. D., & Wells, K. B. (2001). The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry, 58*(1), 55–61.

Young, A. S., Klap, R., Shoai, R., & Wells, K. B. (2008). Persistent depression and anxiety in the United States: Prevalence and quality of care. *Psychiatric Services, 59*(12), 1391–1398.

Zlotnick, C., Shea, M. T., Pilkonis, P. A., Elkin, I., & Ryan, C. (1996). Gender, type of treatment, dysfunctional attitudes, social support, life events, and depressive symptoms over naturalistic follow-up. *American Journal of Psychiatry, 153*(8), 1021–1027.