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Gender Differences in Depression in Representative National Samples: Meta-Analyses of Diagnoses and Symptoms

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Abstract

In two meta-analyses on gender differences in depression in nationally representative samples we advance previous work by including studies of depression diagnoses and symptoms to 1) estimate the magnitude of the gender difference in depression across a wide array of nations and ages; 2) use a developmental perspective to elucidate patterns of gender differences across the lifespan; and 3) incorporate additional theory-driven moderators (e.g., gender equity). For major depression diagnoses and depression symptoms, respectively, we meta-analyzed data from 65 and 95 articles and their corresponding national datasets, representing data from 1,716,195 and 1,922,064 people in over 90 different nations. Overall, OR = 1.95, 95% CI [1.88, 2.03] and d = 0.27 [0.26, 0.29]. Age was the strongest predictor of effect size. The gender difference for diagnoses emerged earlier than previously thought, with OR = 2.37 at age 12. For both meta-analyses, the gender difference peaked in adolescence (OR = 3.02 for ages 13–15, and d = 0.47 for age 16) but then declined and remained stable in adulthood. Cross-national analyses indicated that larger gender differences were found in nations with greater gender equity, for major depression, but not depression symptoms. The gender difference in depression represents a health disparity, especially in adolescence, yet the magnitude of the difference indicates that depression in males should not be overlooked.

Keywords

depression; gender; meta-analysis; development; gender equity

Depression is a global health priority. According to the (World Health Organization 2016), depression accounts for fully 10 percent of the total non-fatal disease burden worldwide. Moreover, this burden falls disproportionately on girls and women. In one study, the global 12-month prevalence of major depressive disorder was 5.8% in females and 3.5% in males (Ferrari et al., 2013). The gender difference in depression – generally believed to be twice as many females experiencing major depression as males – represents a major health disparity. However, despite assertions that the gender difference in depression is among the most robust of findings in psychopathology research (e.g., Bebbington, 1996), and extensive empirical and theoretical work on gender differences in depression, this large body of

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sometimes inconsistent research has yet to be synthesized meta-analytically. The current set of meta-analyses advance previous work by including studies of depression diagnoses as well as symptoms to 1) estimate the magnitude of the gender difference in depression; 2) use a developmental lens to elucidate the patterns of gender differences across the lifespan; and 3) examine theory-driven, conceptually relevant moderators (e.g., nation-level gender equity).

Background

In the 1970s, Myrna Weissman first underscored the gender difference in depression, noting that approximately twice as many females experience depression as males among adults in clinical and community samples (Weissman & Klerman, 1977). Following this landmark article, there was a proliferation of research and theories on gender differences in depression (Bebbington, 1996; Kuehner, 2003; Nolen-Hoeksema, 1987; Piccinelli & Wilkinson, 2000; Weissman & Klerman, 1977; for an overview of explanatory models, see Hammerström, Lehti, Danielsson, Bengs, & Johansson, 2009). In the vast majority of epidemiological reports on adults, women have higher rates of major depression compared to men; on average, the ratio is 2:1 (Andrade et al., 2003; Bromet et al., 2011). However, findings also suggest that the 2:1 ratio is not universal and may vary substantially across nations. For example, in 18 countries from the WHO World Mental Health Surveys (Kessler & Usten, 2008), odds ratios (ORs, female/male) for 12-month major depressive episode (MDE[1]) ranged from 1.2 to 2.7 across 18 countries and 89,037 participants (Bromet et al., 2011). Given this variability, it is critical to use meta-analysis to estimate the overall magnitude and consistency of the gender difference in depression across different nations and with different assessments of major depression. Other widely held beliefs about gender differences, such as the gender difference in math performance, have sometimes been found to be inaccurate when the data are meta-analyzed (Hyde, Lindberg, Linn, Ellis, & Williams, 2008; Lindberg, Hyde, Petersen, & Linn, 2010). Moreover, given evidence of cross-national variations, it is important to understand nation-level variables (e.g., economic development, gender equity) that may account for variability in the magnitude of the gender difference.

In addition to examining variations in the gender difference in depression across nations, it is also critical to take a developmental perspective. Several studies indicate that, among the general population, there is no gender difference or even a somewhat higher prevalence of depression among boys than girls in childhood (Avenevoli, Knight, Kessler, & Merikangas, 2008; Twenge & Nolen-Hoeksema, 2002). The female preponderance in depression is thought to emerge by ages 13–15 (e.g., Hankin et al., 1998; Twenge & Nolen-Hoeksema, 2002; Wichstrøm, 1999; Wade, Cairney, & Pevalin, 2002). However, research on the time course of the emergence of the gender difference in adolescence has been accepted as a fundamental fact in the depression literature when it is actually based on only a few studies. For example, in a landmark article, Hankin and colleagues (1998) found that the gender difference in clinical depression emerged by ages 13–15 and then widened between ages 15

[1]Major depressive episode (MDE) and major depressive disorder (MDD) are distinct. MDD requires the presence of a major depressive episode (MDE) and the absence of a manic, mixed, or hypomanic episode. Thus, MDE includes depressive episodes that occur in both unipolar depression and bipolar disorder, whereas MDD includes only unipolar depression. However, the vast majority of lifetime and twelve-month MDE is MDD.

and 18. This conclusion has been widely accepted (the article had been cited 1693 times as of December 2016) based on findings from one sample from one region of New Zealand (see Kessler, McGonagle, Swartz, Blazer, & Nelson, 1993, for the other widely cited study on gender differences in adolescence, based on U. S. data). A meta-analysis on gender differences in depression with a developmental focus is the next major step in order to pinpoint the time course of the emerging gender difference in depression.

Additionally, developmental patterns of the gender difference beyond adolescence have been largely neglected empirically. The limited findings in adulthood are inconsistent with respect to both the magnitude and direction of the gender difference in depression (Angst et al., 2002; Mirowsky, 1996; Oksuzyan et al., 2010; Patten et al., 2016; Bebbington et al., 1998). Additionally, estimates of the gender difference in depression in older adults suggest marked variability. A meta-analysis of 24 studies among individuals ages 75 and older reported gender ratios between 1.4 and 2.2 (Luppa et al., 2012). It was one of the goals of the current meta-analyses to bring clarity to developmental patterns throughout the lifespan.

Lastly, despite much attention to the 2:1 ratio for the gender difference in *major depression*, the magnitude of the gender difference in levels of *depression symptoms* in the general population has received less attention. Psychiatric research in the past several decades has focused on the use of diagnostic categories as specified in the *Diagnostic and Statistical Manual of Mental Disorders (*DSM; American Psychiatric Association, 1980–2013) and *International Classification of Disease* (*ICD;* World Health Organization, 1992). However, there is increased recognition of the validity (e.g., Markon, Chmielewski, & Miller, 2011) and value (Cuthbert & Insel, 2013) of dimensional assessments, as well as the impairment associated with sub-threshold levels of symptoms that do not meet diagnostic criteria. Indeed, adolescents and adults with subthreshold depression symptoms and minor depression still experience significant impairment (e.g., Lewinsohn, Solomon, Seeley, & Zeiss, 2000) and are at elevated risk for later development of major depression and suicidal behaviors (Cuijpers, de Graaf, & van Dorsselaer, 2004; Fergusson, Horwood, Ridder, & Beautrais, 2005; Klein, Shankman, Lewinsohn, & Seeley, 2009). These important subthreshold levels are captured in symptom questionnaires; however, extant research on the magnitude of gender differences in depression symptoms is limited. One meta-analysis reported effect sizes ranging from $d = -0.06$ at age 12 to $d = +0.22$ at ages 14 and 15 (positive values indicate more depression symptoms among girls; Twenge & Nolen-Hoeksema, 2002). Although this study represented a step forward in the research literature, it was limited to the Children's Depression Inventory (CDI; Kovacs, 1985) scale and samples of 8- to 16-year-old participants in the United States and Canada ($n = 43{,}916$). Given the impairment associated with high levels of depression symptoms in the absence of a diagnosis, it is critical to estimate the magnitude of the gender difference in depression symptoms more comprehensively: throughout the lifespan, across nations, and with multiple symptom measurements.

Thus, in the current set of meta-analyses using nationally representative samples, we estimated the magnitude of the gender difference in (1) major depression diagnoses and (2) levels of depression symptoms. Moreover, meta-analysis allowed us to chart the developmental course of the gender difference from childhood through late adulthood. Meta-

analysis also enabled us to test whether the gender difference is universal across nations or whether there are cultural factors such as gender inequality that account for cross-national variations.

Gender Differences in Depression across the Lifespan

Based on both developmental psychopathology theory and past research (reviewed above), age was used as a moderator in the current set of meta-analyses to answer one of our fundamental questions: What is the pattern of gender differences in depression across the lifespan?

There now is consensus that the gender difference in depression has a multifactorial etiology (Cyranowski, Frank, Young, & Shear, 2000; Hyde, Mezulis, & Abramson, 2008). Theories of developmental psychopathology contend that there are multiple pathways to the gender difference in depression involving combinations and interactions of risk factors that span multiple levels of analysis (Cicchetti & Rogosch, 2002). Importantly, these pathways to the gender difference in depression occur in a developmental context. Theories highlight how specific vulnerability factors come on-line at critical developmental periods in adolescence and/or interact with stressors in adolescence to produce the gender difference in adolescence (reviewed by Hyde et al., 2008b). For example, there is a confluence of hormonal and neurodevelopmental changes that vary by sex during the pubertal transition and may influence the gender difference in depression. Thus, a developmental approach is key to understanding patterns in the gender difference across the adolescent transition and to understand if the gender difference persists across the lifespan.

In contrast to the focus on the emergence of the gender difference in adolescence, researchers have largely ignored development in adulthood when theorizing about and examining gender differences in depression. The field of developmental psychopathology encourages a lifespan perspective, as the process of adaptation continues from childhood through adulthood (Cicchetti & Rogosch, 2002). For example, with regard to depression, little is known about levels of stress for women compared with men across adulthood, nor about the importance of various life transitions in adulthood. Theorizing about gender differences in depression will be enriched by an understanding of developmental patterns across adulthood and it was one of the goals of these meta-analyses to elucidate those developmental patterns.

Gender Differences in Depression across Nations

Past research indicates variability in the magnitude of the gender difference in depression across nations. We used sociological theory and social-structural theory to guide our use of nation-level economic and gender equity indicators as moderators in the current set of meta-analyses.

Sociological theories

Sociological approaches to mental health emphasize the role of poverty, violence, and gender inequality as factors contributing to the gender difference in depression. Abundant

evidence suggests a relationship between financial hardship and depression in both sexes (Reiss, 2013). Because of the feminization of poverty (Belle, 1990; Belle & Doucet, 2003), and the link between poverty and depression, gender differences might also be linked to income inequality and a national's overall wealth. Similar to financial hardship, victimization is also related to depression in both males and females. To the extent that women report higher rates of violent victimization, this may contribute to the gender difference in depression (Koss et al., 1994). Lastly, gender inequality is linked to discrimination against women, which may contribute to the gender difference (Belle & Doucet, 2003). Thus, in the current meta-analyses we investigated nation-level economic factors and gender-equity indicators as moderators of the gender differences in depression.

Social-structural theory

Eagly and Wood's social-structural theory (1999; Wood & Eagly, 2012) also provides a framework for understanding the relationship between gender inequality and the magnitude of psychological gender differences. According to the theory, a society's division of labor by gender drives all other psychological gender differences. These gender differences result from individuals' adaptations to the particular restrictions on or opportunities for their gender in their society. The theory predicts that *larger* gender differences should be observed in nations with *more* gender inequality. Evidence for this theory exists for several psychological gender differences, including mate preferences, mathematics performance, and some aspects of sexuality (Eagly & Wood, 1999; Else-Quest, Hyde, & Linn, 2010; Petersen & Hyde, 2010; Zentner & Mitura, 2012). However, other studies have found *smaller* gender differences in nations with more gender inequality. This pattern has been found for outcomes such as self-reports of personality traits and attitudes about mathematics (Else-Quest et al., 2010; Wood & Eagly, 2012). In the current meta-analyses, we sought to determine which of these patterns would occur (larger or smaller gender differences in nations with more gender inequality) when the outcome was gender differences in depression.

Cross-national variations: Research on economic and gender equity factors

Research on the relationship between nation-level economic factors and gender differences in depression is sparse. A study including 18 countries from the WHO World Mental Health Surveys (Kessler & Usten, 2008) reported that the relationship between gender and MDE did not differ significantly between high-income and low- to middle-income countries, suggesting that economic development does not explain the varying magnitudes of gender differences in different countries (Bromet et al., 2011). Alternatively, a different measure of nation-level economic development may be more sensitive in detecting a relationship to the gender difference in depression. In the current set of meta-analyses, we used two different measures of economic development (income category and income inequality; defined below) and included a more complete set of nations to examine the relationship between nation-level economic factors and gender differences in depression more comprehensively.

Nation-level gender equity indicators are increasingly being used in psychological research (Else-Quest & Grabe, 2012); however, few studies have investigated the relationship between nation-level gender equity and gender differences in depression. Two large multi-

nation studies have reported conflicting results, finding that the gender gap in depression was *smaller* and *larger*, respectively, in low gender-equity countries compared to high gender-equity countries (Hopcroft & Bradley, 2007; Van de Velde, Huijts, Bracke, & Bambra, 2013). This relationship is especially complex given the multiple available measures of gender equity. We selected domain-specific indicators of gender equity (rather than composite indicators) that should, theoretically, be tied to gender differences in depression (e.g., contraceptive prevalence, representing a woman's ability to control her own reproduction).

Additional Factors Influencing the Gender Difference in Depression

In addition to examining age and cross-national variations in national wealth and gender equity as moderators, we also explored whether the magnitude of the gender difference in depression varied according to ethnicity (in U.S. samples only) and over time, i.e., whether it is growing larger or smaller.

Ethnicity in the U.S. and Intersectionality

The extant literature indicates that the prevalence of major depression in the United States varies both by gender and by ethnicity (e.g., Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2006). However, few studies have tested whether gender differences in depression vary by ethnicity. The importance of this question is highlighted in intersectionality theory, which emphasizes that all people belong to multiple social categories and that these categories are intertwined (Cole, 2009; Else-Quest & Hyde, 2016a). According to this approach, the category of gender should not be considered in isolation, but should be analyzed as it intersects with other categories such as ethnicity. Empirical evidence for these assertions is abundant; space does not permit a thorough review here (for reviews, see Else-Quest & Hyde, 2016a, b).

The limited research on ethnicity, gender, and depression in the United States does not indicate variation by ethnicity in the gender difference in depression (Barnes, Keyes, & Bates, 2013; Breslau et al., 2006; Oquendo et al., 2001; Siegel, Aneshensel, Taub, Cantwell, & Driscoll, 1998). Nonetheless, other meta-analyses on gender differences for related constructs have found notable variations across U.S. ethnic groups. For example, a meta-analysis of gender differences in self-esteem found a small difference favoring Caucasian males over Caucasian females, $d = 0.20$, but no gender difference for African American samples, $d = -0.04$ (Kling, Hyde, Showers, & Buswell, 1999). Therefore, it was important to test whether gender differences in depression vary across U.S. ethnic groups. We did not conduct analyses stratified by ethnicity in other nations because ethnic groups are distinct in each country and often are not reported.

Trends over time

One recent narrative review concluded that internalizing problems for girls increased from the late 20th century to the 21st century (Bor, Dean, Najman, & Hayatbakhsh, 2014). The findings for boys were mixed as to whether they experienced an increase. In contrast, Seedat and colleagues (2009) found a significant narrowing in the gender difference in depression

in recent cohorts. We therefore tested meta-analytically whether gender differences in depression are widening or narrowing over time.

Sampling Issues

The current set of meta-analyses synthesized data from representative samples, based on an approach pioneered by Hedges and Nowell (1995). They argued that the strongest scientific evidence about gender differences does not come from small studies of convenience samples, but instead comes from larger studies based on representative samples of populations. The Hedges and Nowell strategy has since been used in other meta-analyses on gender differences in cognitive abilities (e.g., Else-Quest et al., 2010; Reilly et al., 2015). Beginning around 1990, with the formation of cross-national collaboration groups studying psychiatric epidemiology (e.g., Cross National Collaborative Group, 1992), data sets based on representative samples became available for gender differences in depression. We were therefore able to use this strong methodology for the current meta-analyses.

The Current Study

Given the abundance of available research on gender differences in major depression and in depression symptoms, a meta-analysis is possible and is needed to address the following key questions:

1. How large is the gender difference in major depression? How large is the gender difference in levels of depression symptoms?
2. Following from developmental psychopathology approaches, what is the pattern of gender differences in depression across the life span? How does the direction or magnitude of the gender difference change across development (i.e., at what ages do gender differences appear or disappear, widen or narrow)?
3. Guided by sociological and social-structural theory, does the magnitude of gender differences vary as a function of the nations' gender equity or wealth?
4. Following from an intersectionality approach, are there variations across U.S. ethnic groups in the direction or magnitude of these gender differences?
5. Have gender differences in depression widened over time, i.e., across cohorts from the 1970s to 2013?

Methods

Identification of Studies and Data Sets

Database searches—Computerized database searches of PsycINFO and PubMed were used to generate an initial pool of potential articles. To identify all relevant articles and related datasets, the following search terms (selected in consultation with a university librarian) were used in PsycINFO and PubMed, respectively: (depression OR depressive OR depressed) AND (sex OR gender); depression AND (gender OR sex OR sex factors)[2]. The search terms were optimized for each database (e.g., using MESH terms in PubMed) and were conceptually similar in terms of article yield. Search limits restricted the results to

articles that discussed research with human populations and that were published between 1970 and October 4, 2016 (including online first publications). 1970 was chosen as the earliest year in order to capture reasonably contemporary research with modern symptom measures and diagnoses from structured interviews based on the DSM and ICD. PsycINFO and PubMed identified 29,003 and 28,383 articles, respectively, which were considered for inclusion. In this section and throughout this paper, we follow MARS reporting standards (American Psychological Association Publications and Communications Board, 2008; see also Moher, Liberati, Tetzlaff, Altman, & the PRISMA Group, 2009).

Abstract processing—Abstracts and citations were imported into Endnote citation manager. Duplicates were deleted, resulting in 46,512 abstracts (see Figure 1). The abstracts were examined for relevant content. At this stage, we included any studies with potentially relevant depression data and, to ensure the quality of sampling, were based on a nationally representative dataset. We included abstracts that explicitly mentioned "nationally representative." Abstracts were excluded for any of the following reasons: (a) the sample was not nationally representative (e.g., clearly a community study or a convenience sample); (b) the sample consisted of only one gender; (c) the study reported no empirical data (e.g., a review article); (d) the research was qualitative; (e) the research was conducted on nonhumans; (f) the participants in the study were younger than seven years old (this age cut-off was selected because, for the sake of uniformity, we included only self-report measures of depression symptoms and not, for example, parent or teacher report; we did not restrict the age range in the computerized database searches in order to avoid missing articles that were not tagged with an age); and (g) the abstract did not mention depression or a related construct (e.g., anxiety, stress, internalizing, emotion, psychological distress, psychiatric disorder, mental health). 44,431 abstracts were excluded due to the aforementioned reasons, resulting in 2081 remaining articles. See Figure 1 for additional information.

Article processing—The pdfs from these 2081 articles were retrieved and examined to determine whether the articles met the criteria for inclusion. At this stage, we excluded studies that were not based on national probability sampling. In other words, we included only population-based surveys representative of the country. We excluded national samples of college students, employees, veterans, twins, primary care patients, and married couples, as these samples do not represent the general population. We excluded representative samples that were limited to one large city or region or even several regions (if they were not randomly selected). We also excluded samples of inpatients or outpatients as this sampling strategy is vulnerable to the criticism that the study is detecting a gender difference in help seeking rather than an actual gender difference in depression (Nolen-Hoeksema, 1987; Pattyn, Verhaeghe, & Bracke, 2015). Nationally representative samples do include individuals currently receiving mental health treatment (unless they are institutionalized) or individuals with a history of receiving mental health treatment, so those individuals were not excluded.

[2]The broadest search term would only have included search terms related to depression. This would ensure that the identified articles included studies that were not focused on gender differences but still reported the relevant statistics. However, PsycINFO and PubMed each identified over 100,000 articles when the search term was soltely "depression," leading us to narrow the search to both depression and (gender or sex) in the search terms.

Also, to ensure quality, studies that did not meet the measurement criteria were excluded at this stage. Studies were excluded if their measurement of depression *symptoms* did not meet the following criteria: 1) minimum of 3 items; 2) self-report; 3) Cronbach's alpha ≥.70 (if provided); and 4) valid and reliable measure of depression based on previously published research[3] (e.g., we excluded studies that used a general measure of psychological distress or negative affect). If a study used a measure that combined anxiety and depression subscales, we contacted the authors to obtain the data solely for the depression subscale.

Studies were excluded in the processing of articles if their measurement of depression *diagnoses* did not include a diagnostic interview with the participant. Thus, we excluded studies reporting depression diagnoses from the following sources: health insurance claims databases, participants' self-report of physician-diagnosed depression, antidepressant use, and cut-off scores on depression symptom measures (e.g., a cut-off on the CES-D). We contacted authors who reported diagnoses based on symptom cut-off scores to obtain the continuous symptom data for the depression symptom meta-analysis.

If a particular sample of participants was used in more than one article, which was often the case with these national datasets, to maintain independence of samples, we selected the article that had the most complete data (including information on moderator variables such as age and ethnicity) and/or the largest sample size. For nationally representative *longitudinal* studies with multiple waves of data (e.g., Add Health), we included only one wave of data to maintain independence of samples. In these cases, we selected the article with baseline data (whenever possible) to obtain the largest sample size and avoid bias due to attrition.

Additional searches and author contact—If an article provided insufficient information for effect size calculations, we used three strategies to obtain relevant data for that particular national dataset: 1) we conducted computerized database searches using the dataset name and/or authors; 2) we searched the national data set websites for published tables with depression data; and 3) if the study assessed relevant information (e.g., reported on depression symptoms but did not provide the data separately for men and women), all authors of the study for whom we could find email addresses from the article, the Web directory of the authors' academic institution, or a Google search, were contacted. Given our strong interest in age and ethnicity as moderator variables, we also contacted authors for data on gender differences in depression by age and, for U.S. samples, ethnicity if that information was not provided in the original article. We received relevant information for 103 out of the 186 articles for which we contacted authors.

[3]Some researchers have questioned the construct validity of self-report depression symptom questionnaires, suggesting that these measures may assess general distress and not specifically depression in the general population (e.g., Kendall, Hollon, Beck, Hammen, & Ingram, 1987). The CES-D, which was the most frequently used symptom questionnaire in the depression symptom meta-analysis, was not designed for clinical diagnoses; however, the items are based on symptoms of major depression. Numerous validation studies are available; in one, the CES-D had a sensitivity of 100% and a specificity of 88% for 1-month major depression diagnoses (Beekman et al., 1997). The CES-D had a weighted sensitivity of 40% for all anxiety disorders in the past year, suggesting specificity for depression versus anxiety.

Overall, 112 articles from the original search met criteria for inclusion, including articles for which authors needed to be contacted for data. We added 46 new articles that were not in the original search from additional searching for nationally representative datasets.

Final sample of studies—The final sample of studies (see Figure 1) for the meta-analyses included data from 65 (diagnosis meta-analysis) and 95 (symptom meta-analysis) articles and their corresponding data sets. Two articles were used in both meta-analyses (Graham et al., 2007; Maske et al., 2016); several samples were used in both meta-analyses, e.g., MIDUS. See Tables 1 and 2 for a list of all studies.

The 65 articles (59 in peer-reviewed journals, 6 online publications from national database websites) and their corresponding data sets for the meta-analysis on depression diagnoses provided data comprising 149 samples (this number includes different countries from the same international dataset as well as different years of data collection for cross-sectional national datasets), 300 effect sizes (this number includes separate effect sizes for different age groups and ethnicities), and 1,716,195 people (53% female). These studies were published from 1993 to 2016 with data from 1991–2014 collected in 75 different countries.

The 95 articles (92 in peer-reviewed journals, 2 government publications, 1 personal communication) and their corresponding data sets for the meta-analysis on depression symptoms utilized data comprising 180 samples, 413 effect sizes, and 1,922,064 people (52% female). These studies were published from 1991 to 2016 and yielded data from 1978–2014 collected from 53 different countries.

Coding of Studies

Studies were coded for information to compute effect sizes and for moderator variables[4]. We double coded 30 studies to compute interrater agreement. The following variables were coded: (a) age of the participants (measured on a continuous scale, using the reported mean or the midpoint of the age range), $r = .99$; (b) country, κ (kappa) = 1.00, was used to identify national economic indicators and national gender equity indicators; (c) for U.S. samples, predominant (≥ 85%) ethnic group of participants (Caucasian, African American, Asian American, Hispanic, Native American, other, mixed, or unreported), $\kappa = 1.00$; and (d) year of data collection, $r = 1.00$.

In any meta-analysis, there is a potential concern that the identified studies have a publication bias, i.e., a bias toward publishing studies that found significant and larger gender differences. If present, this bias could mean that the magnitude of the gender difference is overestimated because studies finding no difference are missing from the sample of studies. As one of several ways to address this potential concern, we coded the focus of the article (gender, depression, other), $\kappa = .84$. If the majority of the articles were not focused on gender, we would not be concerned about publication bias in regard to gender. We further tested whether the magnitude of the gender difference in depression varied as a function of the article focus to determine if articles that focused on gender

[4]The majority of studies provided sample sizes for each gender and for each gender stratified by moderating variables; however, for several studies in which this information was not available, we estimated sub-group sample sizes from the total sample size.

reported larger gender differences than articles focused on depression. Gender was identified as the focus of the article if "gender" or a related term was included in the title. If gender was not identified as the focus, depression was identified as the focus of the article if "depress*" or a related term was included in the title, abstract, or keywords. If neither gender nor depression were the focus, "other" was coded.

The following measurement characteristics were also coded: (1) the type of measure used to assess depression diagnoses (diagnostic interview; e.g., CIDI, DIS) or depression symptoms (self-report measure; e.g., CES-D, BDI), $\kappa = 1.0$; (2) the manual used to diagnose depression (DSM-IV or DSM-IV-TR[5]; DSM-III or DSM-III-R; or ICD-10), $\kappa = 1.0$; (3) type of depression diagnosis (depressive episode versus depressive disorder), $\kappa = .87$; and (4) the time span for the depression diagnosis (current, 1 month, 6 months, 12 months, lifetime), $\kappa = 1.00$. If multiple time spans for the depression diagnosis were reported (e.g., 12-month and lifetime), 12-month was the preferred time span given our interest in developmental trends in gender differences in depression. For the major depression meta-analysis, all articles reported DSM major depression diagnoses or episodes (96%) or the roughly equivalent ICD-10 depressive episode (4%). Diagnoses of dysthymia were not included in this meta-analysis.

Nation-level Economic Indicators

To test the contribution of national wealth and development to gender differences in depression, we used two indicators: a categorical measure of national wealth (low-, middle-, and high-income), and income inequality. The World Bank classification of income categories was based on gross national income (GNI) per capita from 2003: high income ($9,386 or more), middle income ($766–9,385), and low income ($765 or less). Income categories were obtained from the Human Development Report 2005 (United Nations Development Programme, 2005). The GINI index was used as a measure of income inequality in a nation. It indicates the extent to which the income distribution deviates from a perfectly equal distribution across income categories, with gender not taken into account (World Bank, 2004). High scores indicate greater inequality. See Supplemental Table 1 for a list of each country and its associated indicators. For each of the economic and gender equity indicators, data are not available for all nations. Therefore, sample sizes vary in regression analyses, depending on the indicator.

Nation-level Gender Equity Indicators

We selected the following five domain-specific nation-level gender equity indicators as hypothesized moderators: contraceptive prevalence (percentage of women in a nation aged 15–49 using some form of contraception, an indicator of women's ability to control their reproduction), executive positions (percentage of executive positions held by women, a measure of women's equality in the workplace), literacy ratio (female: male ratio in

[5]All studies in the meta-analysis were conducted with DSM-IV-TR or earlier so we rely on it as the source. In DSM-IV-TR and DSM-5 (American Psychiatric Association, 2013), the criteria for a major depressive episode are nearly identical. The one exception is that the bereavement exclusion criterion was removed in DSM-5. In the DSM-IV-TR, criterion E for a major depressive episode specified "the symptoms are not better accounted for by Bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation" (American Psychiatric Association, 2000, p. 356).

percentage of the adult population that is literate, a measure of women's equality in education), intimate-partner violence against women (lifetime prevalence of physical violence against women by intimate partners) and sexism ideals (higher scores indicate attitudes favoring gender equity in response to the item "When jobs are scarce, men should have more right to a job than women").

Contraceptive prevalence, executive positions, and literacy indicators for each country were obtained from the Human Development Report 2005 (United Nations Development Programme, 2005). The intimate-partner violence measure came from the United Nations' 2010 report, *The World's Women*, for the years 2000–2006. The sexism ideals measure was obtained from the World Values Survey, Wave 4, 1999–2004 (World Values Survey, 2014). Although they were theoretically interesting, the intimate-partner violence and sexism ideals measures proved unsatisfactory because they were available for only a minority of the effect sizes in analyses. Those two measures are therefore not considered further. See Supplemental Table 1 for a list of each country and its associated indicators.

Effect Size Computation

The odds ratio (Lipsey & Wilson, 2001) was the effect size used for the meta-analysis on major depression diagnoses; Cohen's *d* (Cohen, 1988) was the effect size used for the meta-analysis on depression symptoms. All effect sizes were computed using the Campbell Collaboration effect size calculator (Wilson). Data were entered in the calculator by two individuals to ensure accuracy.

Odds ratio—The odds ratio (OR) is an effect size that evaluates whether the odds of a certain outcome (e.g., depression) is the same for two groups (e.g., males and females). For the meta-analysis on gender differences in major depression, the OR measures the ratio of the odds of major depression among females (number of depressed females divided by number of non-depressed females) to the odds of major depression among males (number of depressed males divided by number of non-depressed males). Thus, values greater than 1 indicate that females have greater odds of depression compared to males. The OR is different from a simple ratio of depressed females to depressed males.[6] Most studies in psychiatric epidemiology report ORs.

The OR for each independent sample was computed using either a 2 by 2 frequency table or the proportion depressed and total sample size for each gender. Separate effect sizes were computed for separate groups within each study (e.g., different age groups, different U.S. ethnic groups).

In synthesizing OR's meta-analytically, raw OR effect sizes were transformed using a natural log transformation. The logged ORs for individual samples were weighted by the inverse of the variance, and averaged across all studies (Lipsey & Wilson, 2001). See Table 1

[6]For example, consider a sample with 1000 females and 1000 males, where 100 females and 50 males are depressed. The ratio of depressed females to males is 2:1 (100/50). The OR is 2.11 ((100/900)/ (50/950)). If we maintain the 2:1 ratio but increase the prevalence of depression (200 depressed females, 100 depressed males), then the OR increases to 2.25.

for a list of all raw effect sizes (not log transformed) along with corresponding study information.

Cohen's *d*—Cohen's *d* (Cohen, 1988) is the effect size for the standardized mean difference between two groups on a continuous variable (e.g., the mean difference between females and males on a continuous measure of levels of depression symptoms). The *d* for each sample in the depression symptom meta-analysis was computed such that positive values indicated that females reported more symptoms than males (the mean score for females minus the mean score for males, divided by the within-groups standard deviation). Effect sizes of $d = 0.20$, $d = .50$, and $d = .80$ are considered to be small, medium, and large, respectively (Cohen, 1988). Separate effect sizes were computed for separate groups within each sample (e.g., different age groups, different ethnic groups). Raw effect sizes were corrected for bias (i.e., the upward-bias of effect sizes among small samples; Hedges, 1981); however, most correction factors were close to 1.0 given the large sample sizes. Although we corrected from Cohen's *d* to Hedges' *g*, we continue to refer to the results as *d* values. Effect size variances were calculated using these unbiased effect sizes. Then unbiased effect sizes for individual samples were weighted by the inverse of the variance and averaged across all studies (Lipsey & Wilson, 2001). See Table 2 for a list of all raw effect sizes (not corrected for bias) along with corresponding study information.

Data-Analytic Plan

Results were analyzed using SPSS/PASW Version 21 with macros provided by Wilson (2006). First, mean weighted effect sizes were computed for OR and *d*. For ease of interpretation, anti-log values are reported for mean OR. We evaluated the homogeneity statistic (Q) to determine whether the distribution of effect sizes was heterogeneous, and thus required further analysis. If the Q statistics associated with OR and *d* were significant, results were further analyzed using a mixed-effects model to account for variability between studies (Lipsey & Wilson, 2001). The mixed-effects model assumes that variability among effects sizes beyond subject-level sampling error has both systematic components (accounted for by moderator variables) and random components (i.e., error variance). When the Q statistic is significant, this mixed-effects approach is preferable to random-effects and fixed-effects models, each of which involve untenable assumptions; the random-effects model assumes that all variability among effect sizes (beyond subject-level sampling error) is due to error and therefore not systematic, and the fixed-effects model assumes that all variability in effects sizes is accounted for by moderators. Random-effects analyses also have lower statistical power than mixed-effects models. In mixed-effects models, a random-effects variance component is estimated after accounting for moderator variables. Then the inverse variance weights are recalculated with the random variance component, and the model is refit.

Moderator variables were tested in separate analyses (one moderator as the independent variable) using an analog to analysis of variance for categorical moderator variables and an analog to regression for continuous moderator variables (i.e., weighted ordinary least squares). We used mixed-effects models with estimation via full information maximum

likelihood for all moderator analyses (Wilson, 2006). Anti-log values are reported for moderator analyses using OR.

To test developmental effects sensitively, lifetime depression diagnoses and samples with large age ranges (e.g., 18–64) were excluded for analyses with age as a moderator. Furthermore, given the focus on developmental trends, we analyzed age as both a categorical and a continuous variable. The age categories were determined based on theory, existing research, and available data. We created the categories of 13–15 and 16–19 to correspond to findings in the much-cited Hankin et al. paper (1998), so that our results could be compared directly to those findings. After that, we used decades (e.g., 20–29). Below that, we formed a childhood age category that corresponded to the available data, i.e., the ages at which we had data. For age as a continuous variable, we included both linear (mean-centered) and quadratic variables for age in a multiple regression, given the potential for non-linear findings.

All analyses were run with the full data set and then re-run excluding outliers. Following procedures recommended by Tabachnick and Fidell (1996), we identified outliers as effect sizes more than 3.29 standard deviations from the mean logged OR and mean *d*. The value of 3.29 SD corresponds to $p < .001$. We report the results using the full data set, and note when results differed if outliers were excluded. Comprehensive Meta-Analysis software, Version 3 (Borenstein, Hedges, Higgins, & Rothstein, 2014) and an online program (https://vevealab.shinyapps.io/WeightFunctionModel/) were used for bias and sensitivity analyses.

Results

Analysis for Possible Bias and File Drawer Effects

We guarded against sample bias, publication bias, and file drawer effects (Rosenthal, 1979) in several ways. First, all datasets were nationally representative, indicating that any bias in sampling is minimized.

Focus of article—Second, we coded the focus of the article to determine if the identified studies were predominantly focused on gender given the computerized database search for depression *and* gender. Importantly, the majority of effect sizes were from articles that focused on depression (70% for major depression; 56% for depression symptoms), not gender (see Table 3). This indicates that most studies were published on the basis of the work on depression and not on the basis of a gender difference, so publication bias in the direction of gender differences should not be a problem.

We further tested whether effect sizes differed between articles that focused on depression rather than on gender. For the major depression meta-analysis, article focus accounted for significant variation in effect sizes (see Table 4). However, in follow-up analyses, effect sizes from articles that focused on gender were not significantly different than effect sizes from articles that focused on depression ($Q_B = 2.22$, $p = 0.14$) or something other than gender or depression ($Q_B = 0.91$, $p = 0.34$). For the depression symptom meta-analysis, article focus did not account for effect size variability. Moreover, when excluding outliers, effect sizes for articles that focused on depression and articles that focused on gender were both $d = 0.26$.

Thus, the similarity of the effect sizes for articles focused on depression and gender, combined with the small proportion of gender-focused studies, suggests that publication bias for articles finding gender differences is not a serious concern in these meta-analyses.

Unpublished data—Third, we followed up with authors to retrieve data on gender differences in depression and moderating variables (e.g., age and U.S. ethnicity) when these were not reported sufficiently in the article. For many of the studies, the gender analyses were not reported in the article or were reported in little detail. For the meta-analysis on depression diagnoses, we received data from authors for 24 (37%) of the 65 articles, such that 167 (56%) of the 300 effect sizes were based on obtained rather than published data. For the meta-analysis on depression symptoms, we received data from authors for 71 (75%) of the 95 articles, such that 357 (86%) of the 413 effect sizes were based on obtained data. This protects the data from file drawer effects.

For the major depression meta-analysis, effect sizes from unpublished data (OR = 1.83) were significantly smaller than effect sizes from published data (OR = 2.09). However, the majority of effect sizes included in this meta-analysis were from unpublished data, making potential publication bias less of a concern. For the depression symptom meta-analysis, effect sizes did not differ as a function of publication status.

Funnel plot and test for asymmetry—Fourth, we used funnel plots as a visual tool to detect small-study effects. See Supplemental Tables 2 and 3 for a plot of effect size against precision (the inverse of standard error) for both meta-analyses. It is important to note that the notion of “small-study effects” is in the context of relatively large nationally representative samples. The average sample size was 5720 (minimum = 261) for the major depression meta-analysis and 4654 (minimum = 101) for the symptom meta-analysis. Nonetheless, we used the Begg and Mazumdar (1994) rank correlation test to evaluate asymmetry in the funnel plots. We selected this test given the skewness of the sample size variable and adequate power with the large number of effect sizes in each meta-analysis. For the major depression meta-analysis, Tau = 0.07, $p = 0.07$. For the depression symptom meta-analysis, Tau = −0.03, $p = 0.49$. Thus, neither of the tests for skewness was statistically significant, indicating no evidence of bias in the set of effect sizes, for both meta-analyses.

Sensitivity analysis—Finally, we used the Vevea and Hedges Weight-Function Model for Publication Bias (Vevea & Woods, 2005). A recent review on adjusting for publication bias in meta-analysis encouraged the use of sensitivity measures (McShane, Böckenholt, & Hansen, 2016). The likelihood ratio tests (LRT) comparing the unadjusted to adjusted models (using p-value cut points of 0.05, 0.01, and 0.001) for the major depression and depression symptom meta-analyses, respectively, were not statistically significant, $p = 0.073$ and $p = 0.3226$. Although the LRT showed a marginal effect for the major depression meta-analysis, the weighted average from the unadjusted model (logged OR = 0.67) and the adjusted model (logged OR = 0.62) were quite similar. The goal of sensitivity analyses is to determine whether the results are robust to various methodological choices that were made in the process of conducting the meta-analysis. The Vevea and Woods test assesses for evidence of publication bias and provides no evidence for it in the sets of effects sizes in these two meta-analyses.

Description of the Samples for each Meta-analysis

See Table 3 for a list of descriptive information about moderator variables and other variables that describe the sample of studies for both meta-analyses. The samples of studies have similarities across the two meta-analyses. They both include mostly high-income countries and cover the lifespan. However, they differ in terms of the distribution of nations and year of data collection. The major depression analysis includes the most effect sizes from the US/Canada (46%), and the depression symptom meta-analysis includes the most effect sizes from Europe (53%). The depression symptom meta-analysis covers data collected from 1978–2014 whereas the major depression meta-analysis only includes data collected from 1991–2014.

The vast majority of effect sizes for the major depression meta-analysis were 12-month major depressive episodes based on the DSM-IV or DSM-IV-TR using a version of the CIDI. For the symptom meta-analysis, most effect sizes were based on the C ES-D measure.

Magnitude of the Gender Difference in Depression

Major depression—The random-effects estimate of the weighted mean effect size for the gender difference in major depression was OR = 1.95, 95% CI [1.88, 2.03]. The diagnosis effect size of OR = 1.95 is equivalent to $d = 0.37$. The random effects variance component was 0.07. The set of effect sizes using the fixed effects model was significantly heterogeneous, $Q_t(299) = 1961.63$, $p < .001$. Thus, moderator analyses were appropriate. We identified 7 outlier effect sizes (2% of all effect sizes) that were more than 3.29 standard deviations from the mean logged odds ratio (0.67 ± 0.96). After excluding these outliers, the random-effects estimate of the overall weighted mean effect size changed only slightly, OR = 1.94, 95% CI [1.87, 2.01].

For the benefit of U.S. policy makers, we repeated all analyses using just U.S. samples. These analyses can be found in the supplemental tables.

Depression symptoms—The random-effects estimate of the weighted mean effect size for the gender difference in depression symptoms was $d = 0.27$, 95% CI [0.26, 0.29]. The symptom effect size of $d = 0.27$ is equivalent to logged OR = 0.49 and OR = 1.64. The random effects variance component was 0.02. The set of effect sizes using the fixed effects model was significantly heterogeneous, $Q_t(412) = 9542.50$, $p < .001$. Thus, moderator analyses were appropriate. We identified 3 outlier effect sizes (1% of all effect sizes) that were more than 3.29 standard deviations from the mean (0.27 ± 0.47). After excluding these outliers, the random-effects estimate of the overall weighted mean effect size did not change, $d = 0.27$, 95% CI [0.25, 0.28].

Developmental Trends

As both a categorical variable and continuous variable, age predicted variability in effect size for diagnoses and symptoms. The patterns were highly similar in both meta-analyses. See Figure 2 (for diagnoses) and Figure 3 (for symptoms) for a graphical representation of age trends.

Major depression—Effect sizes ranged from OR = 1.71 to OR = 3.02, with ORs >2.0 during adolescence and ORs between 1.71 and 2.02 in adulthood. Note that the youngest age group available for these analyses was 12 years old, making it impossible to observe the emergence of the gender difference from childhood to adolescence. When outliers were excluded, the age 13–15 OR decreased from 3.02 to 2.92 and the age 70+ OR increased from 2.02 to 2.20.

Follow-up testing with pairs of consecutive age groups indicated that the ORs for ages 12 (2.37), 13–15 (3.02), and 16–19 (2.69) were not statistically different (Q_B= 1.19, Q_B= 1.98, *p*s > 0.15, respectively). However, significance tests for moderators in meta-analysis tend to have low statistical power (Hedges & Pigott, 2004), which would especially be the case for age 12 when only 2 effect sizes were available. The OR at ages 16–19 (2.69) was significantly larger than the OR for ages 20–29 (1.93), Q_B = 43.19, p < .001, indicating a significant decrease in the gender difference from adolescence to the 20s. Differences between 20–29 and later ages were not significant.

Depression symptoms—Effect sizes ranged from *d* = 0.09 to *d* = 0.41, peaking at ages 16–19, declining in the 20s, and staying relatively stable at roughly *d* = 0.20 after that. Removal of outliers did not change the estimates of effect sizes. In Figure 3 we present weighted effect sizes for each year in adolescence to describe in more detail the development of the gender difference in depression in adolescence (with each age having at least 5 effect sizes).

Follow-up testing with pairs of consecutive age groups indicated that the effect sizes for ages 8–12 (0.09), 13–15 (0.35), and 16–19 (0.41) were statistically different (Q_B = 23.01 and Q_B = 8.06, *p*s< .01, respectively), such that the effect size for each consecutively age group was significantly larger than the previous age group. The effect size for ages 20–29 (0.30) was significantly smaller than the effect size for ages 16–19, Q_B = 7.26, p < .01. Differences between 20–29 and later ages were not significant.

Nation-level economic indicators

See Table 4 for income category results. See Table 5 for income inequality results.

Major depression—Income category (high versus low to middle) was a significant predictor of effect size. Larger gender differences in depression were found in wealthier countries (OR = 2.00) compared to low- to middle- income countries (OR = 1.82). Income inequality was not a significant predictor.

Depression symptoms—Income category (high versus low to middle) was not a significant predictor of effect size. However, when outliers were removed, the effect became marginally significant (Q_B = 3.09, *p* = 0.08) with smaller gender differences in high-income nations (*d* = 0.26) compared to low- to middle- income nations (*d* = 0.29). Income inequality was a significant predictor of effect size, such that larger gender differences were reported in nations with low levels of income inequality. Yet, when outliers were removed, this effect become non-significant (*p* = 0.13). Neither of these results are reliable given the sensitivity when outliers were excluded.

Nation-level gender equity indicators

See Table 5 for nation-level gender equity results.

Major depression—Contraceptive prevalence and literacy ratio both predicted variability in effect size. As the percentage of women using some form of contraception increased (range = 8 – 84%), the effect size also increased. For literacy, the effect size increased as the ratio of the female: male adult literate population increased. Importantly, there was not a range restriction for the literacy variable (ratios ranged from .31 to 1.07), which can have substantial negative skew (Else-Quest & Grabe, 2012). When outliers were excluded, executive positions had a marginal effect on effect size, such that as the percentage of executive positions held by women increased (range = 2 – 58%), the effect size increased. Thus, for all three indicators, greater gender equity was associated with a larger gender difference in major depression.

Depression symptoms—Contraceptive prevalence, executive positions, and the literacy ratio did not predict variation in effect size. These conclusions, however, should be qualified because the variability for all three indicators was limited.

Additional Moderators

U.S. ethnicity—In both meta-analyses, U.S. ethnicity did not account for significant variation in effect size (see Table 4).

Trends over time—As shown in Table 5, for the major depression meta-analysis, year of data collection was a significant predictor of effect size, such that gender differences were larger more recently. To better understand this pattern, we created a categorical variable for year of data collection and obtained the following effect size estimates: 1991–1996= 1.84, k = 22; 1997–2002= 1.88, k = 134; 2003–2008= 1.91, k = 59; 2009–2014 = 2.17, k = 85. Thus, although the range of OR = 1.84 to 2.17 is not great, the positive relationship is clear. For the depression symptom meta-analysis, year of data collection did not predict variation in effect size.

Type of assessment—As shown in Table 4, diagnostic interview (WMH-CIDI v. Other) did not account for significant variation in effect sizes in the major depression meta-analysis. Symptom measure significantly predicted variation in effect size. In follow-up tests, all pair-wise comparisons were significantly different from each other, such that the smallest effect size was for the BDI (d = 0.20) and the largest effect size was for scales other than the BDI and CES-D (d = 0.31).

Other major depression moderators—As shown in Table 4, manual for major depression (e.g., DSM-IV, ICD-10), type of depression (episode versus disorder) and depression time span (1 month, 6 months, 12 months, and lifetime) did not predict effect size variation. However, when outliers were excluded, manual for major depression predicted significant variation in effect size, Q_B = 7.26, p = .013. Follow up analyses, excluding outliers, indicated that diagnoses using the ICD were significantly smaller than both diagnoses using DSM-IV/DSM-IV-TR (Q_B = 6.86, p < .01) and DSM-III/ DSM- III-R TR

(Q_B = 9.60, p < .01). However, the difference between OR = 1.73 for ICD and OR = 1.97 for both DSMs is not a large difference.

Discussion

The current meta-analyses advance research by synthesizing data from representative samples of more than 1.7 million women and men each, with three main goals: (1) to determine the magnitude of gender differences in diagnoses of major depression and in levels of depression symptoms; (2) to elucidate developmental trends in the magnitude of the gender difference, with the goal of identifying the age at which the gender difference in depression emerges in adolescence and whether the gender difference remains the same across adulthood; and (3) to identify other moderators of these gender differences, focusing especially on nation-level indicators of gender equity and national wealth. In the sections that follow, we highlight and discuss the findings related to each goal.

Magnitude of the Gender Difference in Depression

Overall, the odds ratio was 1.95 for gender differences in diagnoses of major depression; this is the first time that this odds ratio has been estimated meta-analytically and across such a large sample. For gender differences in depression symptoms, we found *d* = 0.27; this is the first meta-analytic estimate of gender differences in symptoms based on samples across the lifespan.

Analyses of moderating variables revealed variations in the *magnitude* of gender differences in depression, not the *direction* of the gender difference. That is, among different subgroups, all odds ratios for diagnoses were > 1.0, and all effect sizes for symptoms were positive. This emphasizes the consistency with which females have higher levels major depression and depression symptoms than males.

How do we interpret the magnitude of the gender difference? An *OR* of 1.95 is a medium, not a large, effect size, yet it is still a health disparity. Oversimplified thinking about the odds ratio for gender differences in major depression diagnoses can lead to beliefs that many women are depressed and few men are. This is simply not an accurate inference with an OR of 1.95. For example, in a nation where 10% of females have major depression, this means that, 5.4% of males also have major depression.

One possible negative consequence of emphasizing the preponderance of women with depression is that depression becomes a female-stereotyped disorder. Such a stereotype can be harmful to both women and men. The stereotype might lead to over-diagnosis of depression in women, and, potentially, overmedication. For men, the stereotype may mean that their depression is overlooked. It is important that clinicians do not overlook depression among men, particularly because gender biases in diagnosis have been documented (Hartung & Widiger, 1998). Men may be less likely to develop depression than women; however, this does not mean that depressed men are not distressed and impaired.

Comparison of the Diagnosis and Symptom Findings

Expressed in the Cohen's *d* metric, the two effect sizes are similar: *d* = 0.37 for major depression and *d* = 0.27 for depression symptoms. Ideally, the same samples would be included in both meta-analyses in order to perfectly compare these effect sizes; however, across a wide variety of nations, measures, and ages, the magnitude of the gender difference for depression symptoms and diagnoses was very comparable.

We would not expect findings across the two meta-analyses to be identical given key differences between measures of depression symptoms and diagnoses of major depression. For example, the typical assessment of symptoms often represents a short period of time, such as a week, whereas diagnoses involve aggregation over longer periods, often a year (Haeffel et al., 2003). Thus, most individuals who are currently experiencing a major depressive episode will, indeed, score high on a measure of depression symptoms. However, an individual who scores in the moderate-to-low range on a measure of current depression symptoms may have experienced a major depressive episode earlier that year. Despite this difference in amount of time captured by each assessment, the magnitude of the effect for both diagnoses and symptoms was similar.

In the moderator analyses, developmental trends were also highly consistent across both meta-analyses (see Table 6 for a summary of comparisons between the symptom and diagnostic findings). However, some findings did not replicate across meta-analyses (e.g., nation-level indicators, trends over time), which may be influenced by the different set of nations and studies included in the two meta-analyses. Each of these moderator findings is discussed in the sections that follow.

The Developmental Pattern of Gender Differences in Depression

Age was the strongest predictor of effect size, compared with all other moderator variables. For both meta-analyses, the effect size peaked in adolescence but then declined and remained stable in adulthood, a finding that has not been identified previously. The consistency of the findings across the two meta-analyses indicates that the findings are robust.

Adolescence—One of the goals of these meta-analyses was to ascertain the time course of the emerging gender difference in depression. In the major depression meta-analysis, we could not examine the emergence of the gender difference given that the youngest age in the studies was 12, when the OR was already 2.37. These results differ from those of Hankin and colleagues (1998), who found that that the gender gap in major depression emerged between ages 13 and 15 and then widened between ages 15 and 18. The odds ratio for the 13–15 age group in our meta-analysis was already 3.02 and declined, not widened, to OR = 2.69 for ages 16–19.

In the symptom meta-analysis, the gender difference emerged in adolescence with a trivial gender difference for ages 8–11 (see Figure 3) and then a steep increase, reaching a peak in the gender difference at age 16. The gender difference in depression symptoms emerged somewhat earlier in adolescence in our meta-analysis (*d* = .02 for ages 8–11, *d* = .14 for age

12, d = .26 for age 13, d = .38 for age 14) compared to the Twenge and Nolen-Hoeksema (2002) meta-analysis of CDI data (d = −.06 for age 12, d = .08 for age 13, d = .22 for age 14). The gender difference in adolescence in our meta-analysis was also larger (largest adolescent d = .47 for age 16) compared to the Twenge and Nolen-Hoeksema meta-analysis (largest adolescent d = .22 for ages 14 and 15). The difference in findings may be due to the greater recency of many of our studies, the greater number of nations, or the inclusion of multiple measures of depression symptoms.

Taken together, our results provide powerful evidence that the gender difference in depression emerges earlier than previously thought (by *at least* age 12 for diagnoses, *at* age 12 for symptoms), which has important implications for the timing of preventive interventions.

Adulthood—In addition to clarifying the time course of the emerging gender difference in depression in adolescence, these meta-analyses also shed light on patterns of gender differences in adulthood, an area that has been largely neglected. In both meta-analyses, the gender difference declined in early adulthood and then remained relatively stable, hovering between OR = 1.71 – 2.02 and d = 0.19 – 0.30. This pattern is a new finding and should be robust because it is based on large-scale meta-analyses and was consistent across both diagnosis and symptom measures. This finding has major implications for theories of gender differences in depression, as discussed in Theoretical Implications below.

Future empirical directions—Future research should explore how absolute levels of depression diagnoses and symptoms among males and females contribute to this pattern of a peak gender difference in adolescence, followed by a subsequent decrease and leveling off. Do males have lower depression symptoms and diagnoses in adolescence that then increase in their 20s, contributing to the observed decrease in the gender difference from adolescence to adulthood? Or do females' depression symptoms and diagnoses decrease in their 20s? Alternatively, it may be that a combination of both patterns occurs. Understanding these patterns will be important for theories of the etiology of depression and for informing prevention work. One latent growth curve analysis indicated that girls' depression symptoms accelerated early in adolescence and then leveled off, whereas boys' symptom levels accelerated in late adolescence (Salk, Petersen, Abramson, & Hyde, 2016), consistent with the first possibility above.

Theoretical implications—As noted earlier, theories guided by developmental psychopathology have focused on explaining the emergence of the gender difference in adolescence (summarized by Hyde et al., 2008b), but did not attend to development across adulthood. The strongest theory will take development into account, not only adolescent development, but also adult development. Future theoretical work will need to account not only for the peak in the magnitude of the gender difference in adolescence, but also for (a) the decline into early adulthood and (b) stability across adulthood. Here we provide examples of exciting directions in which such theorizing might go, for three factors hypothesized to be important in the development of depression: temperament, cognitive vulnerability-stress interactions, and puberty.

According to one theoretical account, *temperament*, present from infancy and early childhood, predicts later depression (summarized by Hyde et al., 2008b). In particular, individuals who are high in negative affectivity and low on positive affectivity are vulnerable to later depression. Given no gender difference in negative affectivity in infancy and childhood (Else-Quest et al., 2006), for temperament to account for the emergence of the gender difference in depression in adolescence requires an interaction between vulnerable temperament and some other factor, such as stress, with stress increasing dramatically in adolescence and increasing more for females than males. How, then, would such a theory account for the decline in the gender difference in the 20s and beyond? It might posit a narrowing of the gender gap in stress beginning in early adulthood. Empirical studies of developmental trends in gender differences in stress in adulthood are lacking and would be a fruitful avenue for future research.

Another theoretical account rests on *cognitive vulnerability-stress models* of depression, which have been well supported in samples of college students and adults (summarized by Hyde et al., 2008b). Research suggests that negative cognitive style may not emerge as a stable trait until ages 9.5 to 12.5, and the cognitive vulnerability-stress interaction does not become a reliable predictor of depression until ages 13.5 to 14.5, i.e., in early adolescence (Cole et al., 2008). According to this model, the gender difference in depression in adolescence may be accounted for by (a) higher levels of negative cognitive style in girls than boys beginning in early adolescence; (b) higher levels of stress for girls than boys beginning in early adolescence; or (c) both. How would this theoretical framework account for the narrowing of the gender gap in depression in adulthood? One possibility is that the gender gap in negative cognitive style narrows in the 20s. The other is that the gender gap in stress narrows in early adulthood. Again, strong empirical studies of these possibilities are lacking.

Another set of theories emphasizes *biological factors* in explaining the gender difference in depression (summarized by Hyde et al., 2008b). Here we focus on *puberty* and the role of pubertal timing, which have been invoked especially to explain why the gender difference in depression appears in early adolescence. Importantly, our meta-analytic findings confirm that the gender difference in depression symptoms emerges around puberty, supporting continued theorizing about the role of puberty. According to one theoretical account, early puberty is disadvantageous for girls but not boys, for outcomes such as depression (Ge, Conger, & Elder, 2001). Thus the gender difference in depression is created at least in part by girls who go through puberty early, because of any of several processes, such as early-puberty girls encountering more peer sexual harassment than boys and on-time girls (Lindberg, Grabe, & Hyde, 2007). The narrowing of the gender gap in depression in adulthood, in the early puberty account, might result from a diminution of the effects of early puberty over time (Copeland et al., 2010), especially 10 or more years later. Again, empirical data on this point are lacking, but the developmental patterns identified by our meta-analysis suggest new directions for both theory and research.

Theories in developmental psychopathology as well as sociology will also be advanced by considering why the gender difference remains relatively stable in adulthood. The following are some possible directions. First, today, at least in the U.S. and many other Western

nations, adult women's and men's work and family roles are much more equalized than before. For example, in the 21st century women constitute 47% of the U.S. labor force, compared to 30% in 1950 (Costello et al., 2003). Thus, employment is much more of a constant factor in most adult women's lives, just as it has been in men's. This may serve to level out stressors and buffers to stress across adulthood. Second, major life transitions that formerly occurred at standard ages and could be major sources of stress, no longer occur at such regular ages. Life course sociologists have called this a "de-standardization of the life course" (Bruckner & Mayer, 2005) or "disorder in the life course" (Rindfuss, Swicegood, & Rosenfeld, 1987). Today, the ages of major events such as marriage, childbirth, and divorce do not occur at the same time for all or most individuals. The result is that stressors attached to these transitions are spread out more evenly across adulthood, leading to more even rates of depression across age for both women and men, and a stable gender gap. A third possibility results from the observation that depression is a recurrent disorder (e.g., Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2000). As such, it may be that most first cases of depression occur in adolescence, and then recur at variable times in adulthood, as a result of the uneven timing of major stressors. Again, prevalence would remain stable across adulthood for both women and men, leading to a stable gender gap, created by the original gender gap in adolescence.

Cross-national Variations

For major depression diagnoses, variability in the gender difference in depression was linked to measures of national wealth and gender equity.

Several caveats are in order before interpreting the cross-national findings. First, a different set of nations was represented in the symptom meta-analysis compared with the diagnosis meta-analysis. Second, gender equity measures were missing for some nations; thus, the analyses did not capture patterns among all nations included. Third, depression may manifest differently in different cultures (Tsai & Chentsova-Dutton, 2002). The depression measures used in the current meta-analyses used standard diagnostic interviews and symptom questionnaires that are based on Western conceptualizations of depression, as codified in the DSM and the ICD. In some cases, phrases were changed, such that the terms used to describe specific symptoms were customized to the local settings (Harkness et al., 2008). However, cultural adaptations that changed diagnostic criteria were not made and, thus, measures may fail to capture some aspects of depression that appear in other cultures (e.g., Beals et al., 2005).

Economic indicators—Following from sociological theories, we examined the relationship between gender differences in depression and a nation's wealth and income inequality. There was a marginal difference between high-income nations ($d = 0.26$) and other nations (low- to middle-income; $d = 0.29$) in the magnitude of the gender difference for symptom measures. For diagnoses, the OR was significantly higher in high-income nations (2.00) than in other nations (1.82). However, the difference between these odds ratios is small, and the 95% confidence intervals overlap, suggesting that this difference is not a major effect. This absence of any substantial effect for nation-level wealth is consistent with other research (Bromet et al., 2011) indicating that economic development is not a

major factor in cross-national variations in the magnitude of gender differences in depression.

Because of the feminization of poverty, we expected to observe large gender differences in depression in nations with more income inequality. However, there was no relation to the gender effect size for diagnoses; it was negatively related for symptom measures but lost significance when outliers were excluded. Therefore, we cannot reach confident conclusions about the relationship between income inequality and the magnitude of the gender difference in depression. The findings reported here indicate that there is probably little or no relationship.

Cross-national variations: Gender equity—Guided by sociological and social-structural theory, we examined the relationship between gender equity and the gender difference in depression. In the major depression meta-analysis, gender differences in depression diagnoses were larger in nations where women had more control over their reproduction, held more executive positions, and were more similar to men in literacy rates. That is, perhaps counterintuitively, gender differences were larger in nations with more gender equity, a finding that was consistent across three indicators. On the face of it, greater contraceptive prevalence should indicate women's greater control over reproduction and a lower rate of unwanted pregnancies, which are a risk factor for depression (e.g., Mercier, Garrett, Thorp, & Siega-Riz, 2013). Yet, as noted in the introduction, some primary studies have found similar patterns to ours regarding gender differences and gender equity, for outcomes such as self-construals (Guimond et al., 2007) and emotion (Fischer, Rodriguez Mosquera, van Vianen, & Manstead, 2004).

To explain why larger psychological gender differences are sometimes found in nations with greater gender equity, we must look at the pattern according to the type of outcome measure. For *objective* measures such as mathematics performance, or for ratings of others such as mate preferences, the gender gap is smaller in more equitable nations (e.g., Else-Quest et al., 2010; Zentner & Mitura, 2012). It is in the domain of *subjective* self-ratings that gender differences are larger in more equitable nations (Wood & Eagly, 2012). Such judgments about the self require participants to construct estimates about the self. Guimond and colleagues (2007) proposed that gender differences in self-construals are larger in contexts in which individuals make intergroup social comparisons, e.g., when they compare themselves to an out-group such as the other gender. Gender differences are smaller when individuals' social comparisons are made intragroup, e.g., comparing themselves to other members of their own gender. For example, girls may come to see themselves as high in depression if they compare themselves to boys instead of girls. It is precisely in higher gender-equity nations, where males and females interact more (e.g., girls are more literate because they have more equal access to schooling with boys), that intergroup comparisons are likelier, leading to larger gender differences. In low-gender-equity nations, intergroup interactions are often greatly restricted, and gender differences on a variable such as depression are smaller due to mostly intragroup comparisons.

These findings of larger gender differences in nations with greater gender equity did not replicate with the meta-analysis of depression symptoms, suggesting that caution is needed

in interpreting the findings for diagnoses. It will be important for future research to examine the relationship between gender equity and the gender difference in depression symptoms among a set of nations that has greater variability in gender equity.

We set out to test two other gender equity indicators – interpersonal violence against women and sexism beliefs – for their relationship to gender differences in depression across nations. We had to abandon these analyses, though, because values were available for only a minority of nations. Both variables are theoretically important, and future research is needed to improve them and make them useful in analyses such as the ones reported here.

Additional Factors Influencing the Gender Difference in Depression

Ethnicity in the U.S—Guided by intersectionality theory, we examined whether effect sizes for gender differences in depression varied across U.S. ethnic groups. In both the diagnosis and symptom meta-analyses, differences among ethnic groups were not significant. Notably, gender differences were smallest for African Americans in both meta-analyses. These analyses, however, were based on small numbers of studies. Therefore, power to detect ethnic-group differences was limited. Much more work is needed on the intersection of gender and ethnicity for depression in the U.S. as well as in other nations.

Trends over time—We sought to determine whether the gender difference in depression has been widening or narrowing over time. The symptom meta-analysis found no significant trend over time and the diagnosis meta-analysis found a positive trend, meaning that gender differences are growing larger. However, this effect was small, accounting for only 2% of the variance. Specifically, the OR increased from 1.84 in 1991–1996 to 2.17 in 2009–2014. It should be noted that the diagnosis meta-analysis did not cover the 1970s and 1980s or earlier decades, because researchers were not yet conducting studies based on nationally representative samples. The gender difference in depression should be monitored for possible changes going forward.

Implications for Policy

These meta-analytic findings can inform global health policy. Given that depression is a global health priority (World Health Organization, 2016), it is imperative to understand disparities in depression and which subgroups are most in need of services. These results suggest that women are at significantly greater risk of depression diagnoses and symptoms compared to men worldwide, and that adolescent girls are at the greatest risk. Universal screening in primary care settings is imperative (O'Connor, Whitlock, Beil, & Gaynes, 2009), with a strong emphasis on screening adolescents. The emphasis on adolescents is particularly important because depression is a recurring disorder, so an episode in adolescence can predispose the individual to later episodes (e.g., Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2000). Research to identify preventive interventions is even more important (Muñoz et al., 2010). What the current meta-analyses cannot tell us is whether these interventions need to be tailored by gender. However, the magnitude of these gender findings is critically important. If global health efforts only targeted women, they would be missing a substantial proportion of depressed individuals, men.

An important clarification in regard to policy implications is that the findings of the current studies yield information only on the gender gap in depression, not on prevalence levels for either gender. For example, assuming equal numbers of males and females, an OR = 2.0 can result from a 9.05% prevalence in females and a 4.85% prevalence in males, or from an 18% prevalence in females and a 10.1% prevalence in males. Policy makers should monitor not only gender disparities, but also prevalence rates.

Strengths and Limitations

By synthesizing nationally representative studies with data from over 1.7 million participants spanning the globe in each of the two meta-analyses, we have provided a comprehensive quantitative review of data on gender differences in major depression diagnoses and depression symptoms across the lifespan. The findings represent especially strong scientific evidence because they are not based on small community or convenience samples and are instead based on representative samples with strong measurement. We also made extensive efforts to obtain data for as many national data sets as possible by conducting additional computerized searches and contacting authors. Overall, 76% of the effect sizes for the symptom meta-analysis and 56% of the effect sizes for the diagnosis meta-analysis were based on data supplied by researchers, and not published in articles, reducing concerns about publication bias.

Despite these strengths, several limitations should be acknowledged. First, we did not have sufficient data to examine gender differences in major depression for children younger than age 12 (and we had only 2 samples for age 12), even though the minimum age criterion was 7. Research is needed on gender differences in major depression for children ages 7 through 12, based on nationally representative samples. The current study also highlights the need for more nationally representative data on gender differences in major depression in developing countries. The results reported here are weighted toward European and North American samples because so much more research has been conducted in those regions.

Second, focusing on large, nationally representative datasets meant that the diagnostic interviews for major depression were conducted not by skilled clinicians, but instead by trained lay interviewers, as is standard practice in these large-scale, epidemiological studies. However, evidence indicates high reliability between clinicians and lay interviewers. For example, in one methodological study, participants were given diagnostic interviews separately by a clinician and a highly trained non-clinician (Wittchen, Robins, Cottler, Sartorius, Burke, & Regier, 1991). Results indicated high agreement between the two; for major depressive disorder, kappa = 0.97, with 99.7% agreement between the two sources (see also Brugha, Nienhuis, Bagchi, Smith, & Meltzer, 1999).

Third, both diagnostic measures and symptom questionnaire measures rely on self-reports from participants. If there are gender differences in willingness to disclose symptoms, then the resulting data may be biased. One early review concluded that the gender difference in depression is a real difference and not a measurement artifact (Weissman & Klerman, 1977). However, this issue deserves continued attention.

Fourth, our database search included only articles in English. We believe that this did not lead to the omission of nations in which English is not the predominant language for two reasons. The two meta-analyses included data from more than 90 nations. Thus, we achieved the goal of including data from a wide array of nations from all regions of the world. Moreover, mounting a study based on a nationally representative sample is a major, costly undertaking that should almost certainly result in multiple publications, at least one of them in English, so we should have detected such studies.

Conclusions

In two separate meta-analyses including nationally representative samples with over 1.7 million people each, we found evidence for a 1.95 odds ratio for gender differences in major depression and a Cohen's *d* of 0.27 for gender differences in depression symptoms. Our results provide powerful evidence that the gender difference in major depression diagnoses and depression symptoms peaks in adolescence, with the gender gap in diagnoses emerging earlier than previously thought (OR = 2.37 at age 12). The gender gap then narrows and remains stable in adulthood, a finding that has not been identified previously and has important implications for both theory and preventive interventions. Larger gender differences in major depression were found in nations with greater gender equity and in more recent studies. The gender difference in depression represents a major health disparity, especially in adolescence, yet the magnitude of the difference indicates that depression in males should not be overlooked.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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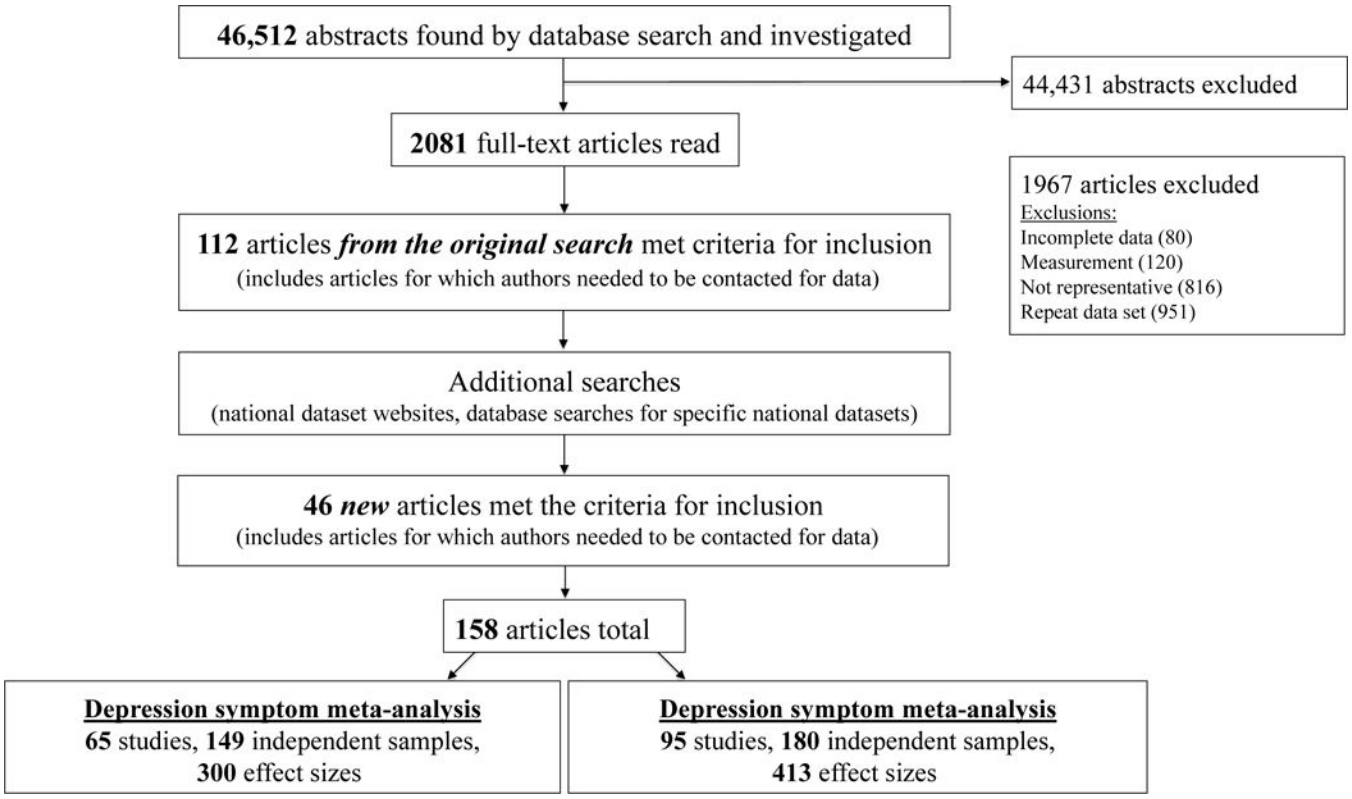

Figure 1.
Flowchart of the search and selection procedure.

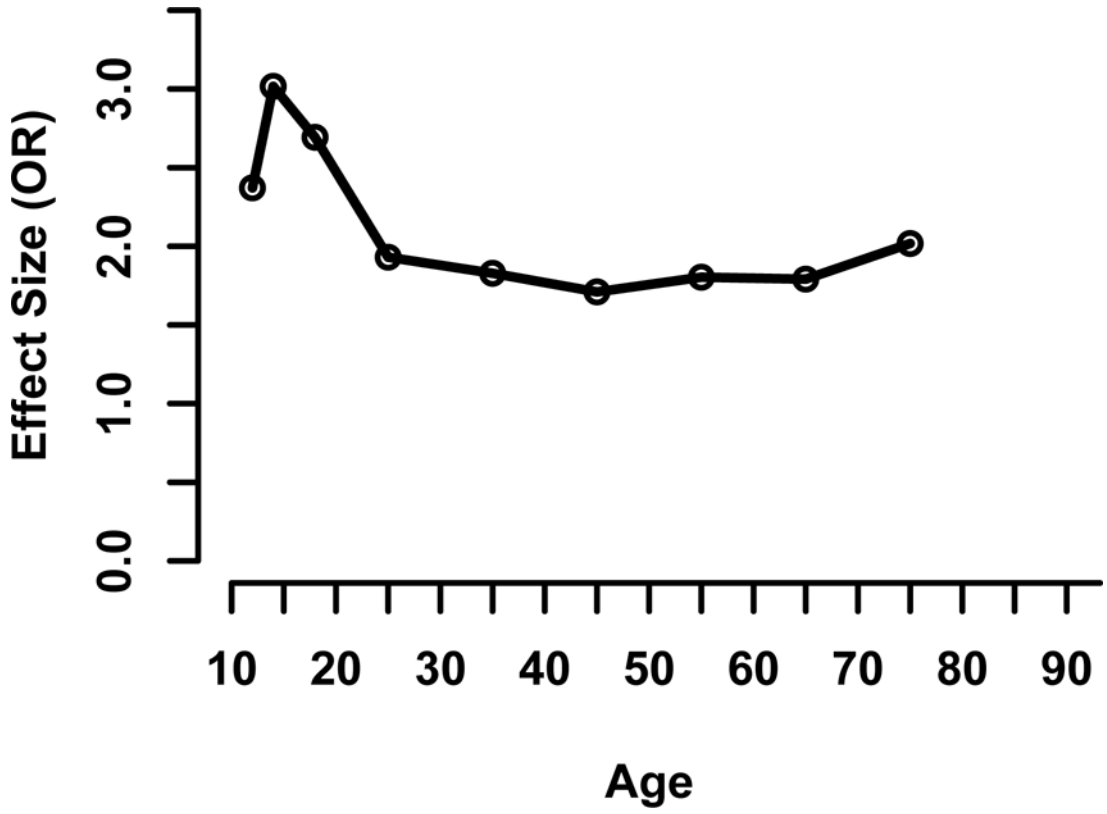

Figure 2. Effect Size for Gender Difference in Major Depression Across Age

Note. Data points represent effect sizes reported in Table 4 for the following ages: 12, 13–15, 16–19, 20–29, 30–39, 40–49, 50–59, 60–69, and 70+.

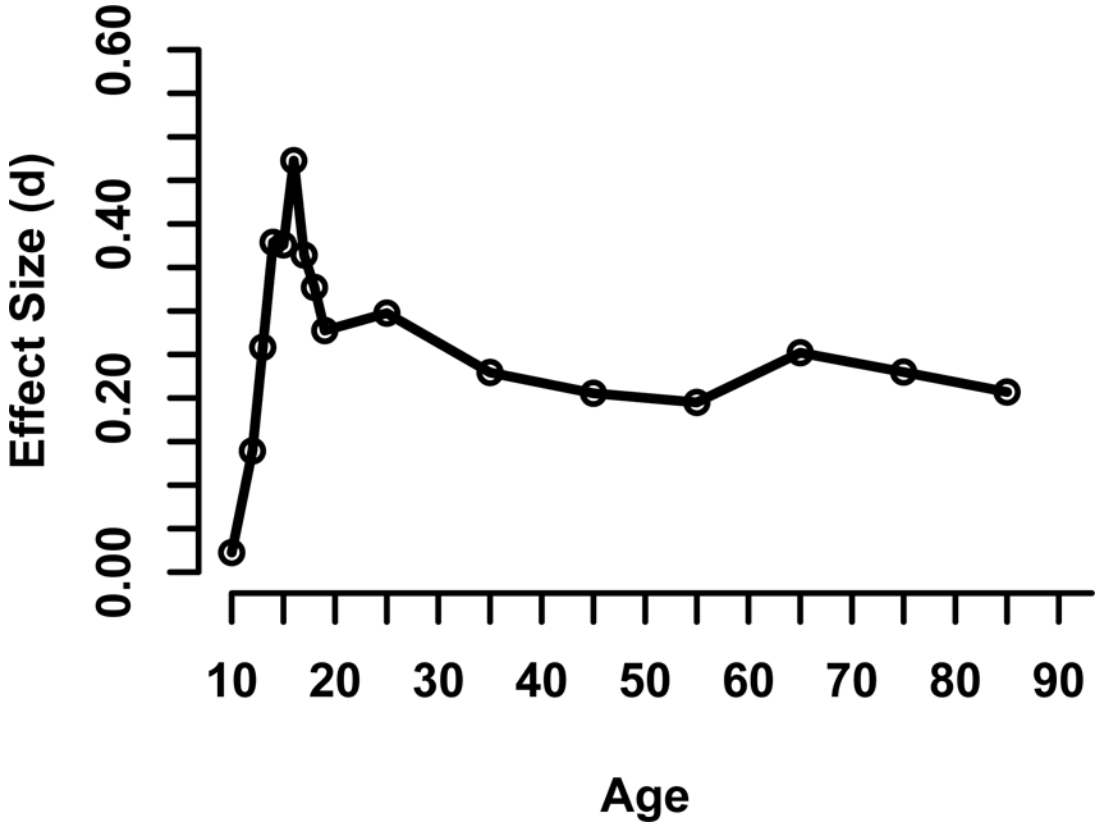

Figure 3. Effect Size for Gender Difference in Depression Symptoms Across Age

Note. Data points represent effect sizes for the following ages: 8–11 (d = 0.02), 12 (d = 0.14), 13 (d = 0.26), 14 (d = 0.38), 15 (d = 0.38), 16 (d = 0.47), 17 (d = 0.36), 18 (d = 0.33), 19 (d = 0.28), 20–29 (d = 0.30), 30–39 (d = 0.23), 40–49 (d = 0.21), 50–59 (d = 0.19), 60–69 (d = 0.25), 70–79 (d = 0.23), and 80+ (d = 0.21).

Table 1

Studies of Gender Differences in Major Depression Diagnoses

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Alaimo et al. (2002)	2.38	US	365	389	DIS	1991	15–16	Third National Health and Nutrition Examination Survey (NHANES III)	1	1	2	4
Andrews et al. (2001)*	2.40	Australia	461	608	CIDI 2.1	1997	18–24	Australian National Survey of Mental Health & Well-Being (NSMHWB)		3	1	3
Andrews et al. (2001)*	1.97	Australia	940	1249	CIDI 2.1	1997	25–34	NSMHWB		3	1	3
Andrews et al. (2001)*	1.97	Australia	1131	1349	CIDI 2.1	1997	35–44	NSMHWB		3	1	3
Andrews et al. (2001)*	1.69	Australia	815	1017	CIDI 2.1	1997	45–54	NSMHWB		3	1	3
Andrews et al. (2001)*	2.14	Australia	627	652	CIDI 2.1	1997	55–64	NSMHWB		3	1	3
Andrews et al. (2001)*	2.78	Australia	731	1061	CIDI 2.1	1997	65+	NSMHWB		3	1	3
Arokiasamy et al. (2013)	1.24	India	3302	3255	CIDI	2008	50+	WHO Study on global Aging and adult health (SAGE) - India		3	3^	3
Arokiasamy et al. (2013)	1.41	India	1042	3620	CIDI	2008	18–49	WHO SAGE- India		3	3^	3
Avenevoli et al. (2015)*	1.65	US	843	809	WMH-CIDI	2002	13	National Comorbidity Survey- Adolescent Supplement (NCS- A)	1	2	1	3
Avenevoli et al. (2015)*	5.50	US	1088	1130	WMH-CIDI	2002	14	NCS- A	1	2	1	3
Avenevoli et al. (2015)*	2.57	US	883	1004	WMH-CIDI	2002	15	NCS- A	1	2	1	3
Avenevoli et al. (2015)*	2.44	US	966	1044	WMH-CIDI	2002	16	NCS- A	1	2	1	3
Avenevoli et al. (2015)*	1.93	US	1173	1183	WMH-CIDI	2002	17–18	NCS- A	1	2	1	3
Beals et al. (2005)	1.79	US	606	817	CIDI	1998	15–54	The American Indian Service Utilization, Psychiatric Epidemiology, Risk & Protective Factors Project (AI-SUPERPFP)- Southwest Tribe	6	2	2	3
Beals et al. (2005)	1.94	US	778	840	CIDI	1998	15–54	AI-SUPERPFP- Northern Plains Tribe	6	2	2	3
Bijl et al. (1998)	1.90	Netherlands	3304	3772	CIDI 1.1	1996	18–64	Netherlands Mental Health Survey & Incidence Study (NEMESIS)		2	2	3
Boyd et al. (2015)	2.55	Bulgaria	2430	2888	WMH-CIDI	2005	18+	Bulgaria National Survey of Health & Stress W		1	1	4
Boyd et al. (2015)	1.67	Romania	1092	1265	WMH-CIDI	2006	18+	Romania Mental Health Survey W		1	1	4
Boyd et al. (2015)	2.44	Portugal	1632	2217	WMH-CIDI	2009	18+	Portugal National Mental Health Survey W		1	1	4
Boyd et al. (2015)	1.96	France	1329	1565	WMH-CIDI	2002	18+	ESEMeD W		1	1	4

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Bromet et al. (2005) *	3.58	Ukraine	462	608	WMH-CIDI	2002	18–32	Comorbid Mental Disorders during Periods of Social Disruption (CMDPSD) W		2	1	3
Bromet et al. (2005) *	2.31	Ukraine	443	728	WMH-CIDI	2002	33–47	CMDPSD W		2	1	3
Bromet et al. (2005) *	2.07	Ukraine	440	876	WMH-CIDI	2002	48–62	CMDPSD W		2	1	3
Bromet et al. (2005) *	2.07	Ukraine	447	876	WMH-CIDI	2002	63+	CMDPSD W		2	1	3
Bromet et al. (2011)	1.57	Belgium	1190	1229	WMH-CIDI	2002	18+	The European Study of the Epidemiology of Mental Disorders (ESEMeD) W		2	1	3
Bromet et al. (2011)	1.71	Germany	1660	1895	WMH-CIDI	2003	18+	ESEMeD W		2	1	3
Bromet et al. (2011)	1.60	Israel	2380	2479	WMH-CIDI	2003	21+	Israel National Health Survey W		2	1	3
Bromet et al. (2011)	2.54	Italy	2321	2391	WMH-CIDI	2002	18+	ESEMeD W		2	1	3
Bromet et al. (2011)	2.32	Netherlands	1032	1340	WMH-CIDI	2003	18+	ESEMeD W		2	1	3
Bromet et al. (2011)	1.96	Colombia	1700	2726	WMH-CIDI	2003	18–65	Colombian National Study of Mental Health W		2	1	3
Bromet et al. (2011)	2.11	Lebanon	1297	1560	WMH-CIDI	2003	18+	Lebanese Evaluation of the Burden of Ailments and Needs of the Nation W		2	1	3
Bromet et al. (2011)	2.17	South Africa	1718	2597	WMH-CIDI	2004	18+	South Africa Stress and Health Study W		2	1	3
Center for Behavioral Health Statistics & Quality (CBHSQ) (2014)	2.86	US	11363	10938	WMH-CIDI	2004	12–17	National Survey on Drug Use & Health (NSDUH)	1		1	3
CBHSQ (2014)	3.26	US	11378	11156	WMH-CIDI	2005	12–17	NSDUH	1		1	3
CBHSQ (2014)	3.05	US	11718	11153	WMH-CIDI	2006	12–17	NSDUH	1		1	3
CBHSQ (2014)	2.80	US	11524	10909	WMH-CIDI	2007	12–17	NSDUH	1		1	3
CBHSQ (2014)	3.18	US	11517	11029	WMH-CIDI	2008	12–17	NSDUH	1		1	3
CBHSQ (2014)	2.69	US	11520	11106	WMH-CIDI	2009	12–17	NSDUH	1		1	3
CBHSQ (2014)	2.93	US	11140	10820	WMH-CIDI	2010	12–17	NSDUH	1		1	3
CBHSQ (2014)	2.92	US	12028	11482	WMH-CIDI	2011	12–17	NSDUH	1		1	3
CBHSQ (2014)	2.66	US	1918	1807	WMH-CIDI	2012	12	NSDUH	1		1	3
CBHSQ (2014)	5.22	US	1840	1838	WMH-CIDI	2012	13	NSDUH	1		1	3
CBHSQ (2014)	3.28	US	1883	1872	WMH-CIDI	2012	14	NSDUH	1		1	3
CBHSQ (2014)	2.98	US	1921	1817	WMH-CIDI	2012	15	NSDUH	1		1	3
CBHSQ (2014)	3.71	US	1937	1878	WMH-CIDI	2012	16	NSDUH	1		1	3
CBHSQ (2014)	2.66	US	1877	1885	WMH-CIDI	2012	17	NSDUH	1		1	3
CBHSQ (2014)	2.14	US	1824	1713	WMH-CIDI	2013	12	NSDUH	1		1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
CBHSQ (2014)	3.76	US	1963	1849	WMH-CIDI	2013	13	NSDUH	1		1	3
CBHSQ (2014)	4.95	US	2026	1865	WMH-CIDI	2013	14	NSDUH	1		1	3
CBHSQ (2014)	3.98	US	1882	1868	WMH-CIDI	2013	15	NSDUH	1		1	3
CBHSQ (2014)	2.92	US	1940	1890	WMH-CIDI	2013	16	NSDUH	1		1	3
CBHSQ (2014)	3.12	US	1914	1760	WMH-CIDI	2013	17	NSDUH	1		1	3
CBHSQ (2014)	1.99	US	10774	11755	WMH-CIDI	2012	18–25	NSDUH	1		1	3
CBHSQ (2014)	1.89	US	1469	1593	WMH-CIDI	2012	26–29	NSDUH	1		1	3
CBHSQ (2014)	2.13	US	1559	1863	WMH-CIDI	2012	30–34	NSDUH	1		1	3
CBHSQ (2014)	1.39	US	1365	1537	WMH-CIDI	2012	35–39	NSDUH	1		1	3
CBHSQ (2014)	1.69	US	1394	1615	WMH-CIDI	2012	40–44	NSDUH	1		1	3
CBHSQ (2014)	1.73	US	1428	1737	WMH-CIDI	2012	45–49	NSDUH	1		1	3
CBHSQ (2014)	1.35	US	816	1013	WMH-CIDI	2012	50–54	NSDUH	1		1	3
CBHSQ (2014)	1.45	US	722	877	WMH-CIDI	2012	55–59	NSDUH	1		1	3
CBHSQ (2014)	1.76	US	598	736	WMH-CIDI	2012	60–65	NSDUH	1		1	3
CBHSQ (2014)	2.09	US	1360	1625	WMH-CIDI	2012	65+	NSDUH	1		1	3
CBHSQ (2014)	2.09	US	10671	11543	WMH-CIDI	2013	18–25	NSDUH	1		1	3
CBHSQ (2014)	1.80	US	1376	1603	WMH-CIDI	2013	26–29	NSDUH	1		1	3
CBHSQ (2014)	1.29	US	1529	1802	WMH-CIDI	2013	30–34	NSDUH	1		1	3
CBHSQ (2014)	1.67	US	1317	1562	WMH-CIDI	2013	35–39	NSDUH	1		1	3
CBHSQ (2014)	1.63	US	1437	1671	WMH-CIDI	2013	40–44	NSDUH	1		1	3
CBHSQ (2014)	1.34	US	1440	1631	WMH-CIDI	2013	45–49	NSDUH	1		1	3
CBHSQ (2014)	1.47	US	837	951	WMH-CIDI	2013	50–54	NSDUH	1		1	3
CBHSQ (2014)	1.61	US	711	909	WMH-CIDI	2013	55–59	NSDUH	1		1	3
CBHSQ (2014)	1.42	US	674	719	WMH-CIDI	2013	60–65	NSDUH	1		1	3
CBHSQ (2014)	3.55	US	1302	1659	WMH-CIDI	2013	65+	NSDUH	1		1	3
CBHSQ (2014)	1.90	US	21408	24366	WMH-CIDI	2005	18+	NSDUH	1		1	3
CBHSQ (2014)	1.75	US	20995	23936	WMH-CIDI	2006	18+	NSDUH	1		1	3
CBHSQ (2014)	1.91	US	21272	24165	WMH-CIDI	2007	18+	NSDUH	1		1	3
CBHSQ (2014)	1.88	US	21602	24588	WMH-CIDI	2008	18+	NSDUH	1		1	3
CBHSQ (2014)	1.77	US	21755	24319	WMH-CIDI	2009	18+	NSDUH	1		1	3
CBHSQ (2014)	1.73	US	21697	24147	WMH-CIDI	2010	18+	NSDUH	1		1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
CBHSQ (2014)	1.84	US	21750	24489	WMH-CIDI	2011	18+	NSDUH	1		1	3
Chan Chee et al. (2011)	2.28	France	529	596	CIDI-SF	2005	15–19	French Barometer Study		2	1	3
Chan Chee et al. (2011)	1.98	France	1813	2417	CIDI-SF	2005	20–34	French Barometer Study		2	1	3
Chan Chee et al. (2011)	2.46	France	2655	3690	CIDI-SF	2005	35–54	French Barometer Study		2	1	3
Chan Chee et al. (2011)	1.95	France	2081	3102	CIDI-SF	2005	55–75	French Barometer Study		2	1	3
Chan Chee et al. (2011)	2.02	France	878	1060	CIDI-SF	2010	20–34	French Barometer Study		2	1	3
Chan Chee et al. (2011)	1.52	France	1433	1725	CIDI-SF	2010	35–54	French Barometer Study		2	1	3
Chan Chee et al. (2011)	2.65	France	1122	1527	CIDI-SF	2010	55–75	French Barometer Study		2	1	3
Cho et al. (2010) *	2.40	South Korea	560	683	K-CIDI 2.1	2007	18–29	Korean National Epidemiologic Catchment Area Study- Replication (KECA-R)		2	1	3
Cho et al. (2010) *	2.55	South Korea	688	1136	K-CIDI 2.1	2007	30–39	KECA-R		2	1	3
Cho et al. (2010) *	1.26	South Korea	690	1065	K-CIDI 2.1	2007	40–49	KECA-R		2	1	3
Cho et al. (2010) *	1.85	South Korea	431	683	K-CIDI 2.1	2007	50–59	KECA-R		2	1	3
Cho et al. (2007)	3.18	South Korea	3524	2751	K-CIDI 2.1	2001	18–64	KECA		2	1	3
Coyne & Marcus (2006)	2.15	US	11612	14903	CIDI-SF	1999	18+	National Health Interview Survey	2	2	1	3
Coyne & Marcus (2006)	2.29	US	1590	2696	CIDI-SF	1999	18+	National Health Interview Survey	3	2	1	3
Danielson et al. (2005).	1.98	US	2020	2003	NSA interview	1995	12–17	National Survey of Adolescents (NSA)	1	2	1	3
de Graaf et al. (2012)	1.57	Netherlands	2977	3669	WMH-CIDI	2008	18–64	NEMESIS II		2	1	3
Farbstein et al. (2010)	2.55	Israel	497	460	DAWBA	2005	14–17	Israel Survey of Mental Health among Adolescents (ISMEHA)		3	1	2
Ford et al. (2003) *	1.51	Great Britain	1284	1340	DAWBA	1999	13–15	British Child & Adolescent Mental Health Survey		2	1	0
Gabilondo et al. (2010).	2.83	Spain	733	834	WMH-CIDI	2002	18–34	ESEMeD ^{W}		2	1	3
Gabilondo et al. (2010).	1.82	Spain	622	809	WMH-CIDI	2002	35–49	ESEMeD ^{W}		2	1	3
Gabilondo et al. (2010).	2.83	Spain	437	587	WMH-CIDI	2002	50–64	ESEMeD ^{W}		2	1	3
Gabilondo et al. (2010).	6.29	Spain	629	822	WMH-CIDI	2002	65+	ESEMeD ^{W}		2	1	3
Gavin et al. (2009)	1.92	US	1217	2217	WMH-CIDI	2002	18+	National Survey of American Life	3	2	1	4
Goodwin & Gotlib (2004)	1.75	US	1492	1540	CIDI-SF	1996	25–74	MIDUS (Midlife in the US)	1	1	2	3
Graham et al. (2007)	2.06	Canada	6214	7878	CIDI	2005	18–76	Gender Alcohol and Culture: An International Study (GENACIS)		2	1	3
Grant (1995)	1.31	US	21431	21431	AUDADIS	1992	18+	National Longitudinal Alcohol Epidemiologic Survey (NLAES)	1	2	1	4

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Gureje et al. (2006) *	0.83	Nigeria	1595	1580	WMH-CIDI	2003	18–34	Nigerian Survey of Mental Health & Wellbeing (NSMHW) W		2	1	3
Gureje et al. (2006) *	1.84	Nigeria	809	822	WMH-CIDI	2003	35–49	NSMHW W		2	1	3
Gureje et al. (2006) *	1.28	Nigeria	503	601	WMH-CIDI	2003	50–64	NSMHW W		2	1	3
Haarasilta et al. (2001)	1.36	Finland	437	505	CIDI-SF	1996	15–24	Finnish Health Care Survey (FINHCS)		2	2	3
Hasin et al. (2005) *	1.93	US	2410	2789	AUDADIS	2002	18–24	National Epidemiologic Survey on Alcohol & Related Conditions (NESARC)	1	2	1	3
Hasin et al. (2005) *	2.08	US	1407	2060	AUDADIS	2002	25–29	NESARC	1	2	1	3
Hasin et al. (2005) *	3.28	US	1834	2458	AUDADIS	2002	30–34	NESARC	1	2	1	3
Hasin et al. (2005) *	1.65	US	1989	2661	AUDADIS	2002	35–39	NESARC	1	2	1	3
Hasin et al. (2005) *	2.36	US	2034	2406	AUDADIS	2002	40–44	NESARC	1	2	1	3
Hasin et al. (2005) *	1.84	US	1876	2142	AUDADIS	2002	45–49	NESARC	1	2	1	3
Hasin et al. (2005) *	2.53	US	1603	2004	AUDADIS	2002	50–54	NESARC	1	2	1	3
Hasin et al. (2005) *	1.76	US	1236	1611	AUDADIS	2002	55–59	NESARC	1	2	1	3
Hasin et al. (2005) *	1.41	US	1025	1343	AUDADIS	2002	60–64	NESARC	1	2	1	3
Hasin et al. (2005) *	2.38	US	927	1255	AUDADIS	2002	65–69	NESARC	1	2	1	3
Hasin et al. (2005) *	1.74	US	2177	3846	AUDADIS	2002	70 +	NESARC	1	2	1	3
Instituto Nacional de Salud Publica (2014)	6.02	Mexico	1028	1176	CIDI	2010	50+	WHO SAGE- Mexico		3	3^	3
Joe et al. (2009) *	0.98	US	563	607	WMH-CIDI	2002	13–17	National Survey of American Life	3	3	1	3
Kessler et al. (2010)	2.03	US	1375	1658	WMH- CIDI	2002	18–34	National Comorbidity Survey- Replication (NCS-R) W	1	2	1	3
Kessler et al. (2010)	1.59	US	1343	1522	WMH- CIDI	2002	35–49	NCS-R W	1	2	1	3
Kessler et al. (2010)	1.54	US	854	1068	WMH- CIDI	2002	50–64	NCS-R W	1	2	1	3
Kessler et al. (2010)	3.16	US	567	894	WMH- CIDI	2002	65+	NCS-R W	1	2	1	3
Kessler et al. (1993)	1.86	US	838	927	CIDI	1991	15–24	National Comorbidity Survey (NCS)	1	1	2	3
Kessler et al. (1993)	1.53	US	1246	1378	CIDI	1991	25–34	NCS	1	1	2	3
Kessler et al. (1993)	1.65	US	1065	1178	CIDI	1991	35–44	NCS	1	1	2	3
Kessler et al. (1993)	2.97	US	696	770	CIDI	1991	45–54	NCS	1	1	2	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Kiejna et al. (2015)	1.82	Poland	1465	1430	WMH-CIDI	2011	18–29	Epidemiology of Mental Health and Access to Care Survey (EZOP) [W]		1	1	4
Kiejna et al. (2015)	1.76	Poland	1069	1050	WMH-CIDI	2011	30–39	EZOP [W]		1	1	4
Kiejna et al. (2015)	2.51	Poland	938	936	WMH-CIDI	2011	40–49	EZOP [W]		1	1	4
Kiejna et al. (2015)	2.37	Poland	1411	1782	WMH-CIDI	2011	50–64	EZOP [W]		1	1	4
Kim et al. (2015) *	2.36	South Korea	691	636	K-CIDI	2011	18–29	KECA-2011		1	1	3
Kim et al. (2015) *	2.02	South Korea	655	645	K-CIDI	2011	30–39	KECA-2011		1	1	3
Kim et al. (2015) *	2.50	South Korea	687	682	K-CIDI	2011	40–49	KECA-2011		1	1	3
Kim et al. (2015) *	2.01	South Korea	542	553	K-CIDI	2011	50–59	KECA-2011		1	1	3
Kim et al. (2015) *	3.40	South Korea	315	351	K-CIDI	2011	60–69	KECA-2011		1	1	3
Kim et al. (2015) *	3.65	South Korea	112	149	K-CIDI	2011	70+	KECA-2011		1	1	3
Lara et al. (2015)	1.80	Spain	435	523	CIDI	2012	18–49	Collaborative Research on Aging in Europe (COURAGE)- Spain		2	1	3
Lara et al. (2015)	1.95	Spain	829	931	CIDI	2012	50–64	COURAGE- Spain		2	1	3
Lara et al. (2015)	4.17	Spain	814	1051	CIDI	2012	65+	COURAGE- Spain		2	1	3
Lepine et al. (1997)	1.75	Belgium	4032	4044	MINI	1995	18+	DEPRES (Depression Research in European Society)		2	1	2
Lepine et al. (1997)	2.22	France	7162	7355	MINI	1995	15+	DEPRES		2	1	2
Lepine et al. (1997)	1.58	Germany	7798	8386	MINI	1995	14+	DEPRES		2	1	2
Lepine et al. (1997)	1.97	Netherlands	4224	3587	MINI	1995	16+	DEPRES		2	1	2
Lepine et al. (1997)	2.12	Spain	8063	8069	MINI	1995	15+	DEPRES		2	1	2
Lepine et al. (1997)	1.41	UK	7155	8588	MINI	1995	16+	DEPRES		2	1	2
Lorenzo-Blanco et al. (2013)	1.77	US	1127	1427	WMH-CIDI	2003	18+	National Latino & Asian American Study (NLAAS)	5	1	1	3
Maske et al. (2016) *	3.69	Germany	371	413	M-CIDI	2011	18–34	Germany Health Interview and Examination Survey for Adults- mental health module (DEGS1-MH)		2	1	3
Maske et al. (2016) *	4.33	Germany	291	332	M-CIDI	2011	35–44	DEGS1-MH		2	1	3
Maske et al. (2016) *	1.41	Germany	414	524	M-CIDI	2011	45–54	DEGS1-MH		2	1	3
Maske et al. (2016) *	1.21	Germany	399	444	M-CIDI	2011	55–64	DEGS1-MH		2	1	3
Maske et al. (2016) *	3.10	Germany	628	592	M-CIDI	2011	65–79	DEGS1-MH		2	1	3
McMartin et al. (2013) *	2.82	Canada	3228	3078	CIDI-SF	2001	12–14	Canadian Community Health Survey (CCHS)		2	1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
McMartin et al. (2013) *	3.22	Canada	5425	5380	CIDI-SF	2001	15–19	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.76	Canada	3350	3997	CIDI-SF	2001	20–24	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.88	Canada	3914	4586	CIDI-SF	2001	25–29	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.87	Canada	4644	5306	CIDI-SF	2001	30–34	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.85	Canada	5687	6429	CIDI-SF	2001	35–39	CCHS 1.1		2	1	3
McMartin et al. (2013) *	2.17	Canada	6073	6458	CIDI-SF	2001	40–44	CCHS 1.1		2	1	3
McMartin et al. (2013) *	2.06	Canada	5368	5647	CIDI-SF	2001	45–49	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.45	Canada	4759	5184	CIDI-SF	2001	50–54	CCHS 1.1		2	1	3
McMartin et al. (2013) *	2.23	Canada	3867	4226	CIDI-SF	2001	55–59	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.62	Canada	3136	3782	CIDI-SF	2001	60–64	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.72	Canada	2988	3625	CIDI-SF	2001	65–69	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.91	Canada	2607	3572	CIDI-SF	2001	70–74	CCHS 1.1		2	1	3
McMartin et al. (2013) *	2.27	Canada	1914	3140	CIDI-SF	2001	75–79	CCHS 1.1		2	1	3
McMartin et al. (2013) *	1.54	Canada	1783	3746	CIDI-SF	2001	80+	CCHS 1.1		2	1	3
Merikangas et al. (2012)	2.98	US	2147	2003	NIMH DISC-IV	2003	12–19	National Health & Nutrition Examination Survey (NHANES), 2001–2004	1	2	1	3
Mohammadi et al. (2005)	2.84	Iran	12660	12530	SADS	2001	18+	The national plan for epidemiologic study of psychiatric disorders in Iran		2	1	4
Mommersteeg et al. (2013) *	1.24	Burkina Faso	2272	2551	WHO WHS	2002	18+	World Health Organization (WHO) World Health Survey (WHS)		2	1	3
Mommersteeg et al. *	1.42	Chad	2196	2447	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.70	Comoros	787	972	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.64	Congo	1167	1326	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.11	Ethiopia	2391	2544	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.67	Ghana	1773	2153	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.66	Ivory Coast	1818	1361	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	2.03	Kenya	1868	2541	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	2.17	Malawi	2197	3033	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	2.00	Mali	2354	1711	WHO WHS	2002	18+	WHO World Health Survey		2	1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Mommersteeg et al.*	1.13	Mauritania	1465	2308	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.41	Mauritius	1872	2016	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.25	Namibia	1721	2524	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.01	Senegal	1641	1515	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	0.93	Swaziland	1417	1667	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.29	Tunisia	2344	2725	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.77	Zimbabwe	1489	2600	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.57	Brazil	2188	2812	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.94	Dominican Republic	2104	2430	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.85	Ecuador	2051	2602	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.48	Mexico	16377	22368	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	3.39	Paraguay	2353	2789	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	3.25	Uruguay	1449	1530	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.82	Bangladesh	2584	2966	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.01	China	1954	2039	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.21	Georgia	1165	1590	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.30	India	4849	5144	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.65	Kazakhstan	1544	2951	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.63	Lao PDR	2295	2594	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.37	Malaysia	2673	3366	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.01	Myanmar	2551	3335	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.52	Nepal	3698	4990	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	2.34	Pakistan	3565	2810	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	1.49	Philippines	4659	5416	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	0.83	Sri Lanka	3136	3596	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	0.84	UAE	617	563	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al.*	7.04	Vietnam	1572	1919	WHO WHS	2002	18+	WHO World Health Survey		2	1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Mommersteeg et al. *	3.82	Bosnia & Herzegovina	434	594	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.42	Croatia	401	589	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.46	Czech Republic	419	516	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.75	Estonia	366	645	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	2.57	Hungary	591	828	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.92	Russia	1592	2828	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	3.08	Slovakia	952	1530	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	1.70	Spain	2623	3740	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
Mommersteeg et al. *	2.03	Ukraine	1001	1844	WHO WHS	2002	18+	WHO World Health Survey		2	1	3
National Research Institute of Public Health, Russian Academy of Medical Science (2013)	3.02	Russia	1520	2376	CIDI	2009	50+	WHO SAGE- Russia		3	3^	3
Patten (2005) *	2.74	Canada	1432	1434	WMH-CIDI	2002	15–19	Canadian Community Health Survey (CCHS) 1.2		2	1	3
Patten (2005) *	1.48	Canada	1305	1502	WMH-CIDI	2002	20–24	CCHS 1.2		2	1	3
Patten (2005) *	2.20	Canada	1074	1468	WMH-CIDI	2002	25–29	CCHS 1.2		2	1	3
Patten (2005) *	1.64	Canada	1498	1731	WMH-CIDI	2002	30–34	CCHS 1.2		2	1	3
Patten (2005) *	1.51	Canada	1669	1860	WMH-CIDI	2002	35–39	CCHS 1.2		2	1	3
Patten (2005) *	1.80	Canada	1775	1738	WMH-CIDI	2002	40–44	CCHS 1.2		2	1	3
Patten (2005) *	1.67	Canada	1443	1464	WMH-CIDI	2002	45–49	CCHS 1.2		2	1	3
Patten (2005) *	2.69	Canada	1282	1517	WMH-CIDI	2002	50–54	CCHS 1.2		2	1	3
Patten (2005) *	1.34	Canada	1264	1465	WMH-CIDI	2002	55–59	CCHS 1.2		2	1	3
Patten (2005) *	0.89	Canada	1092	1235	WMH-CIDI	2002	60–64	CCHS 1.2		2	1	3
Patten (2005) *	1.37	Canada	889	1184	WMH-CIDI	2002	65–69	CCHS 1.2		2	1	3
Patten (2005) *	1.13	Canada	834	1206	WMH-CIDI	2002	70–74	CCHS 1.2		2	1	3
Patten (2005) *	0.97	Canada	599	1042	WMH-CIDI	2002	75–79	CCHS 1.2		2	1	3
Patten (2005) *	0.22	Canada	617	1365	WMH-CIDI	2002	80+	CCHS 1.2		2	1	3
Patten (2005) *	3.03	Canada	967	1057	WMH-CIDI	2012	15–19	CCHS- MH (Mental Health)		2	1	3
Patten (2005) *	1.17	Canada	923	1066	WMH-CIDI	2012	20–24	CCHS- MH		2	1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Patten (2005) *	2.09	Canada	737	880	WMH-CIDI	2012	25–29	CCHS- MH		2	1	3
Patten (2005) *	2.00	Canada	808	1061	WMH-CIDI	2012	30–34	CCHS- MH		2	1	3
Patten (2005) *	1.52	Canada	827	902	WMH-CIDI	2012	35–39	CCHS- MH		2	1	3
Patten (2005) *	1.41	Canada	877	814	WMH-CIDI	2012	40–44	CCHS- MH		2	1	3
Patten (2005) *	1.37	Canada	795	875	WMH-CIDI	2012	45–49	CCHS- MH		2	1	3
Patten (2005) *	2.04	Canada	904	1052	WMH-CIDI	2012	50–54	CCHS- MH		2	1	3
Patten (2005) *	1.86	Canada	1016	1229	WMH-CIDI	2012	55–59	CCHS- MH		2	1	3
Patten (2005) *	1.57	Canada	975	1231	WMH-CIDI	2012	60–64	CCHS- MH		2	1	3
Patten (2005) *	2.31	Canada	847	1071	WMH-CIDI	2012	65–69	CCHS- MH		2	1	3
Patten (2005) *	0.39	Canada	639	793	WMH-CIDI	2012	70–74	CCHS- MH		2	1	3
Patten (2005) *	1.13	Canada	466	718	WMH-CIDI	2012	75–79	CCHS- MH		2	1	3
Patten (2005) *	5.07	Canada	559	1024	WMH-CIDI	2012	80+	CCHS- MH		2	1	3
Peltzer & Phaswana-Mafuya (2013)	1.08	South Africa	1638	2202	WMH-CIDI	2008	50+	WHO SAGE- South Africa		2	3^	3
Pirkola et al. (2005) *	2.26	Finland	983	1094	CIDI	2001	30–44	Health 2000		2	1	3
Pirkola et al. (2005)	1.62	Finland	768	812	CIDI	2001	45–54	Health 2000		2	1	3
Pirkola et al. (2005)	2.10	Finland	486	563	CIDI	2001	55–64	Health 2000		2	1	3
Pirkola et al. (2005)	2.49	Finland	511	788	CIDI	2001	65+	Health 2000		2	1	3
Rafful et al. (2012)	1.65	Mexico	842	1218	WMH- CIDI	2002	18–29	Mexico National Comorbidity Survey (M-NCS) W		1	1	4
Rafful et al. (2012)	2.40	Mexico	852	1384	WMH- CIDI	2002	30–44	(M-NCS) W		1	1	4
Rafful et al. (2012)	2.20	Mexico	591	895	WMH- CIDI	2002	45–65	(M-NCS) W		1	1	4
Rapsey et al. (2015) *	1.91	Iraq	2091	2241	WMH- CIDI	2007	18–96	Iraq Mental Health Survey W		3	1	4
Sandanger et al. (2007)	1.55	Norway	803	888	CIDI 1.2	2001	18+	–		1	1	3
Scott et al. (2010) *	1.61	New Zealand	713	822	WMH-CIDI	2004	16–24	New Zealand Mental Health Survey (NZMHS) W		2	1	3
Scott et al. (2010) *	2.10	New Zealand	1000	1414	WMH-CIDI	2004	25–34	NZMHS W		2	1	3
Scott et al. (2010) *	1.23	New Zealand	1231	1659	WMH-CIDI	2004	35–44	NZMHS W		2	1	3
Scott et al. (2010) *	1.70	New Zealand	1023	1222	WMH-CIDI	2004	45–54	NZMHS W		2	1	3
Scott et al. (2010) *	3.28	New Zealand	730	934	WMH-CIDI	2004	55–64	NZMHS W		2	1	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Scott et al. (2010) *	3.31	New Zealand	937	1307	WMH-CIDI	2004	65+	NZMHS ^{W}		2	1	3
Shah et al. (2011)	1.84	US	838	927	DIS	1991	17–39	NHANES- III	3	2	2	4
Shah et al. (2011)	2.34	US	1246	1378	DIS	1991	17–39	NHANES- III	2	2	2	4
Shah et al. (2011)	2.16	US	1065	1178	DIS	1991	17–39	NHANES- III	5	2	2	4
Shanghai Municipal Center for Disease Control and Prevention (2012)	1.58	China	6409	6466	CIDI	2009	50+	WHO SAGE- China		3	$3^{\wedge}$	3
Skapinakis et al. (2013)	1.78	Greece	2427	2467	CIS-R	2010	18–70	Psychiatric Morbidity Survey		2	$3^{\wedge}$	1
Slade et al. (2009) *	2.92	Australia	681	790	WMH-CIDI	2007	16–24	National Survey of Mental Health and Well-Being (NSMHWB) ^{W}		2	$3^{\wedge}$	3
Slade et al. (2009) *	1.57	Australia	516	774	WMH-CIDI	2007	25–34	NSMHWB ^{W}		2	$3^{\wedge}$	3
Slade et al. (2009) *	1.17	Australia	756	882	WMH-CIDI	2007	35–44	NSMHWB ^{W}		2	$3^{\wedge}$	3
Slade et al. (2009) *	1.34	Australia	566	698	WMH-CIDI	2007	45–54	NSMHWB ^{W}		2	$3^{\wedge}$	3
Slade et al. (2009) *	2.80	Australia	604	669	WMH-CIDI	2007	55–64	NSMHWB ^{W}		2	$3^{\wedge}$	3
Slade et al. (2009) *	1.75	Australia	904	1001	WMH-CIDI	2007	65–85	NSMHWB ^{W}		2	$3^{\wedge}$	3
Spiers et al. (2012)	1.60	England	4300	4318	CIS-R	1993	16–64	National Psychiatric Morbidity Surveys (NPMS)		2	$3^{\wedge}$	1
Spiers et al. (2012)	1.17	England	3606	3622	CIS-R	2000	16–71	NPMS		2	$3^{\wedge}$	1
Spiers et al. (2012)	1.50	England	3454	3553	CIS-R	2007	16–78	NPMS		2	$3^{\wedge}$	1
Subramaniam et al. (2013) *	1.43	Singapore	1149	1144	WMH-CIDI	2010	18–34	Singapore Mental Health Study		2	1	3
Subramaniam et al. (2013) *	1.00	Singapore	1162	1197	WMH-CIDI	2010	35–49	Singapore Mental Health Study		2	1	3
Subramaniam et al. (2013) *	3.02	Singapore	978	976	WMH-CIDI	2010	50–89	Singapore Mental Health Study		2	1	3
Suttajit et al. (2012) *	2.26	Thailand	1886	1786	MINI	2008	15–24	Thai National Mental Health survey		2	1	4
Suttajit et al. (2012) *	1.52	Thailand	1831	1908	MINI	2008	25–34	Thai National Mental Health survey		2	1	4
Suttajit et al. (2012) *	1.25	Thailand	1904	1982	MINI	2008	35–44	Thai National Mental Health survey		2	1	4
Suttajit et al. (2012) *	1.57	Thailand	2875	2968	MINI	2008	45–59	Thai National Mental Health survey		2	1	4
Takeuchi et al. (2007) *	0.81	US	998	1097	WMH-CIDI	2003	18+	National Latino & Asian American Study (NLAAS)	4	2	1	3
Toussaint et al. (2008) *	2.57	US	563	709	CIDI-SF	1998	18+	-	1	1	2	3
University of Ghana Medical School (2013)	1.72	Ghana	2241	2041	CIDI	2008	50+	WHO SAGE- Ghana		3	$3^{\wedge}$	3
Vicente et al. (2006)	2.11	Chile	1281	1697	CIDI	1996	15+	Chilean Psychiatric Prevalence Study		2	2	3

Study	OR	Country	NM	NF	Interview	Year	Age	Sample	E	F	M	T
Volken (2013) *	1.25	Switzerland	7919	9936	CIDI- SF	2007	15+	Swiss Health Survey		2	1	3
Wade et al. (2002)	1.93	Canada	643	677	CIDI-SF	1995	12–19	National Population Health Survey (NPHS)		1	2	3
Wittchen et al. (2000)	2.17	Germany	1913	2268	CIDI	1998	18–65	German National Health Interview and Examination Survey		2	1	3
Zhao et al. (2006)	2.21	Canada	12991	14399	CIDI-SF	1997	20–39	NPHS		1	2	3
Zhao et al. (2006)	1.91	Canada	12386	13296	CIDI-SF	1997	40–64	NPHS		1	2	3
Zinzow et al. (2009) *	3.24	US	923	885	NSA interview	2005	12–14	National Survey of Adolescents-Replication (NSA-R)	1	2	1	2
Zinzow et al. (2009) *	2.79	US	928	868	NSA interview	2005	15–17	NSA-R	1	2	1	2
Zubrick et al. (2016) *	4.96	Australia	183	160	DISC-IV	2014	14	Second Australian Child and Adolescent Survey of Health and Well-being		2	1	3
Zubrick et al. (2016) *	3.16	Australia	168	141	DISC-IV	2014	15	Second Australian Child and Adolescent Survey of Health and Well-being		2	1	3
Zubrick et al. (2016) *	3.55	Australia	353	365	DISC-IV	2014	16	Second Australian Child and Adolescent Survey of Health and Well-being		2	1	3
Zubrick et al. (2016) *	2.08	Australia	325	309	DISC-IV	2014	17	Second Australian Child and Adolescent Survey of Health and Well-being		2	1	3

Note. Sample = sample name (not all samples had a name); Interview = diagnostic interview used; OR = untransformed Odds Ratio; NM = *n* males; NF = *n* females; Year = year of data collection; Age = age or age range (in years); E = ethnicity (only applies to U.S. samples): 1 = mixed, 2 = > 85% Caucasian, 3 = > 85% African American, 4 = > 85% Asian American, 5 = > 85% Hispanic, 6 = > 85% Native American; F = focus of article: 1 = gender, 2 = depression, 3 = other, no value = no title; M = diagnostic manual or classification system: 1 = DSM-IV or DSM-IV-TR; 2 = DSM-III or DSM-III-R; 3 = ICD-10; T = time span during which depression was diagnosed: 0 = current; 1 = 1 month, 2 = 6 months, 3 = 12 months, 4 = lifetime;

* = received additional data from author;

W = World Mental Health Survey Sample;

^ = ICD-10 depressive episode (all other diagnoses were major depressive episodes or major depressive disorders);

DIS = Diagnostic Interview Schedule (Robins et al., 1981); CIDI = Composite International Diagnostic Interview (World Health Organization, 1990, 1997; Smeets & Dingemans, 1993); WMH- CIDI = World Mental Health CIDI or CIDI 3.0 (Kessler & Ustun, 2004); CIDI-SF = CIDI- Short Form (Kessler et al., 1998); K-CIDI = Korean version of the CIDI (Cho et al., 2002); M-CIDI = German version of the CIDI (Wittchen & Pfister, 1997); DAWBA = Development and Well-Being Assessment (Goodman et al., 2000); AUDADIS = Alcohol Use Disorder and Associated Disabilities Interview Schedule (Grant et al., 2001); MINI = Mini-International Neuropsychiatric Interview (Sheehan et al., 1998); NIMH DISC-IV = National Institute of Mental Health Diagnostic Interview Schedule for Children Version IV (Shaffer et al., 2000); SADS = Schedule of Affective Disorders and Schizophrenia (Endicott & Spitzer, 1978); WHO WHS = World Health Organization World Health Survey- 2002 (World Health Organization, 2002); SCID = Structured Clinical Interview for Diagnostic and Statistical Manual (DSM)-IV Axis I Disorders (First et al., 2002); CIS-R = Clinical Interview Schedule- Revised (Lewis et al., 1992); CIS = Clinical Interview Schedule (Lewis et al., 1992).

Table 2

Studies of Gender Differences in Depression Symptoms

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Aalto et al. (2012) *	0.27	Finland	326	371	BDI	2001	30–34	Health 2000		2
Aalto et al. (2012) *	0.29	Finland	353	388	BDI	2001	35–39	Health 2000		2
Aalto et al. (2012) *	0.14	Finland	341	381	BDI	2001	40–44	Health 2000		2
Aalto et al. (2012) *	0.10	Finland	379	435	BDI	2001	45–49	Health 2000		2
Aalto et al. (2012) *	0.16	Finland	412	412	BDI	2001	50–54	Health 2000		2
Aalto et al. (2012) *	0.37	Finland	263	304	BDI	2001	55–59	Health 2000		2
Aalto et al. (2012) *	0.19	Finland	244	289	BDI	2001	60–64	Health 2000		2
Aalto et al. (2012) *	0.31	Finland	178	231	BDI	2001	65–69	Health 2000		2
Aalto et al. (2012) *	0.22	Finland	348	656	BDI	2001	70+	Health 2000		2
Abebe et al. (2016) *	0.47	Norway	12867	13146	DMI	2012	13	Ungdata		2
Abebe et al. (2016) *	0.64	Norway	11018	11184	DMI	2012	14	Ungdata		2
Abebe et al. (2016) *	0.70	Norway	12624	12369	DMI	2012	15	Ungdata		2
Abebe et al. (2016) *	0.69	Norway	8266	7811	DMI	2012	16	Ungdata		2
Almqvist et al. (1999)	−0.11	Finland	2880	2805	CDI	1990	8–9	Finnish Nationwide 1981 Birth Cohort Study		2
Andersen et al. (2009) *	0.14	Denmark	1701	2066	MDI	2000	40–49	Danish Longitudinal Study on Work, Unemployment & Health		2
Andersen et al. (2009) *	0.14	Denmark	1695	1699	MDI	2000	50–56	Danish Longitudinal Study on Work, Unemployment & Health		2
Belanger et al (2011) *	0.37	Switzerland	481	355	DTS	2002	16	Swiss Multicenter Adolescent Survey on Health (SMASH)		2
Belanger et al (2011) *	0.50	Switzerland	996	976	DTS	2002	17	SMASH		2
Belanger et al (2011) *	0.31	Switzerland	1135	1072	DTS	2002	18	SMASH		2
Belanger et al (2011) *	0.41	Switzerland	782	592	DTS	2002	19	SMASH		2
Belanger et al (2011) *	0.08	Switzerland	503	304	DTS	2002	20	SMASH		2
Bracke (1998)	0.32	Belgium	2907	3204	HDL-D	1992	16+	Panel Study of Belgian Households		1
Bushman et al. (2012) *	0.08	US	251	549	CES-D	2011	18–90	–	1	2
Cardozo et al. (2005) *	0.23	Afghanistan	240	357	SCL-D	2002	15+	Mental Health in Afghanistan Survey		1

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Cater et al. (2015) *	0.36	Sweden	203	200	HADS-D	2011	20	Resume Project		1
Cater et al. (2015) *	0.32	Sweden	215	265	HADS-D	2011	21	Resume Project		1
Cater et al. (2015) *	0.31	Sweden	253	252	HADS-D	2011	22	Resume Project		1
Cater et al. (2015) *	0.32	Sweden	265	300	HADS-D	2011	23	Resume Project		1
Cater et al. (2015) *	0.44	Sweden	250	297	HADS-D	2011	24	Resume Project		1
Chan et al. (2011)	0.16	Singapore	759	786	CES-D	2009	60–64	Panel on Health and Aging of Singaporean Elderly (PHASE), Wave 2, 2011		1
Chan et al. (2011)	0.22	Singapore	908	1039	CES-D	2009	65–74	PHASE, Wave 2, 2011		1
Chan et al. (2011)	0.28	Singapore	411	586	CES-D	2009	75+	PHASE, Wave 2, 2011		1
Clark et al. (2013) *	0.17	New Zealand	762	914	RADS-SF	2013	13	Youth'12		3
Clark et al. (2013) *	0.33	New Zealand	868	965	RADS-SF	2013	14	Youth'12		3
Clark et al. (2013) *	0.33	New Zealand	742	941	RADS-SF	2013	15	Youth'12		3
Clark et al. (2013) *	0.29	New Zealand	686	831	RADS-SF	2013	16	Youth'12		3
Clark et al. (2013) *	0.32	New Zealand	467	652	RADS-SF	2013	17	Youth'12		3
Collins et al. (2009) *	0.30	Taiwan	2534	2176	CES-D	1996	50+	Survey of Health & Living Status of the Near Elderly & Elderly		2
Crimmins et al. (2011) *	0.73	Austria	777	1072	EURO-D	2005	50+	Survey of Health, Aging, & Retirement (SHARE)		1
Crimmins et al. (2011) *	1.04	Belgium	1715	1934	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.54	Denmark	757	858	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.36	France	1367	1671	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.30	Germany	1370	1571	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	1.04	Greece	1241	1428	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.36	Italy	1126	1382	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.56	Netherlands	1348	1517	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.57	Spain	989	1364	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.96	Sweden	1407	1590	EURO-D	2005	50+	SHARE		1
Crimmins et al. (2011) *	0.66	Switzerland	455	505	EURO-D	2005	50+	SHARE		1
de Wit et al. (2009) *	0.24	Netherlands	2632	2970	MHI-D	2004	18–29	Continuous Survey of Living Conditions (CCSLC)		2
de Wit et al. (2009) *	0.22	Netherlands	3206	3780	MHI-D	2004	30–39	CCSLC		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
de Wit et al. (2009) *	0.17	Netherlands	3437	3727	MHI-D	2004	40–49	CCSLC		2
de Wit et al. (2009) *	0.17	Netherlands	3297	3331	MHI-D	2004	50–59	CCSLC		2
de Wit et al. (2009) *	0.29	Netherlands	2404	2166	MHI-D	2004	60–69	CCSLC		2
de Wit et al. (2009) *	0.31	Netherlands	1813	2020	MHI-D	2004	70–90	CCSLC		2
Dooley et al. (2015) *	−0.15	Ireland	84	90	DASS-D	2011	12	My World Survey		2
Dooley et al. (2015) *	0.11	Ireland	462	515	DASS-D	2011	13	My World Survey		2
Dooley et al. (2015) *	0.22	Ireland	588	609	DASS-D	2011	14	My World Survey		2
Dooley et al. (2015) *	0.33	Ireland	508	488	DASS-D	2011	15	My World Survey		2
Dooley et al. (2015) *	0.34	Ireland	451	564	DASS-D	2011	16	My World Survey		2
Dooley et al. (2015) *	0.43	Ireland	371	368	DASS-D	2011	17	My World Survey		2
Dooley et al. (2015) *	0.27	Ireland	142	215	DASS-D	2011	18	My World Survey		2
Everson-Rose et al. (2004) *	0.31	US	333	407	CES-D	1986	24–34	American Changing Lives Survey	1	2
Everson-Rose et al. (2004) *	0.23	US	228	363	CES-D	1986	35–44	American Changing Lives Survey	1	2
Everson-Rose et al. (2004) *	−0.01	US	168	222	CES-D	1986	45–54	American Changing Lives Survey	1	2
Everson-Rose et al. (2004) *	0.14	US	251	434	CES-D	1986	55–65	American Changing Lives Survey	1	2
Everson-Rose et al. (2004) *	0.26	US	239	526	CES-D	1986	65–74	American Changing Lives Survey	1	2
Everson-Rose et al. (2004) *	0.23	US	139	307	CES-D	1986	75+	American Changing Lives Survey	1	2
Ferketich et al. (2000)	0.25	US	2888	5006	CES-D	1983	30+	National Health & Nutrition Examination Follow-up Study (NHEFS)	1	1
Fleiz Bautista et al. (2012) *	0.31	Mexico	4613	4707	CES-D	2008	12–17	National Survey on Addictions		2
Fleiz Bautista et al. (2012) *	0.24	Mexico	7343	7962	CES-D	2008	18–29	National Survey on Addictions		2
Fleiz Bautista et al. (2012) *	0.29	Mexico	5199	5784	CES-D	2008	30–39	National Survey on Addictions		2
Fleiz Bautista et al. (2012) *	0.34	Mexico	3833	4204	CES-D	2008	40–49	National Survey on Addictions		2
Fleiz Bautista et al. (2012) *	0.29	Mexico	3623	3959	CES-D	2008	50–65	National Survey on Addictions		2
Fleming et al. (2014) *	0.42	New Zealand	3074	2585	RADS	2007	12–15	Youth 2000		2
Fleming et al. (2014) *	0.32	New Zealand	1580	1453	RADS	2007	16–19	Youth 2000		2
Gault-Sherman et al. (2009) *	0.42	Iceland	1610	1596	SCL- D	2004	16	Junior College Questionnaire		1
Gault-Sherman et al. (2009) *	0.36	Iceland	1138	1156	SCL-D	2004	17	Junior College Questionnaire		1

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Gault-Sherman et al. (2009) *	0.38	Iceland	835	927	SCL-D	2004	18	Junior College Questionnaire		1
Gault-Sherman et al. (2009) *	0.33	Iceland	705	859	SCL-D	2004	19	Junior College Questionnaire		1
Gault-Sherman et al. (2009) *	0.39	Iceland	314	284	SCL-D	2004	20	Junior College Questionnaire		1
Gettler & Oka (2016)	0.14	US	1505	933	PHQ-9	2012	20–60	NHANES 2011–2012	1	1
Graham et al. (2007)	0.15	Canada	2781	3675	CES-D	2005	18–76	Gender Alcohol & Culture: An International Study		2
Guarnaccia et al. (1991)	0.33	US	1369	1583	CES-D	1983	20–45	HHANES	5	2
Guarnaccia et al. (1991)	0.31	US	416	659	CES-D	1983	20–45	HHANES	5	2
Guarnaccia et al. (1991)	0.42	US	247	312	CES-D	1983	20–45	HHANES	5	2
Gudmundsdottir et al. (2010)	0.23	Iceland	967	955	SCL-D	1998	18–75	-		2
Hardie (2014)	0.13	US	1116	1046	CES-D	1992	27–35	National Longitudinal Survey of Youth (NLSY) ’79	3	2
Hardie (2014)	0.23	US	725	689	CES-D	1992	27–35	NLSY ’79	5	2
Hardie (2014)	0.22	US	1841	1703	CES-D	1992	27–35	NLSY ’79	2	2
Haroz et al. (2014)	0.45	US	585	785	CES-D	2014	13–14	Teen Health and Technology	1	2
Haroz et al. (2014)	0.27	US	856	1096	CES-D	2014	15–17	Teen Health and Technology	1	2
Haroz et al. (2014)	0.22	US	954	1404	CES-D	2014	18	Teen Health and Technology	1	2
Haroz et al. (2014)	0.16	US	95	99	CES-D	2008	11–12	Growing up with Media	1	2
Haroz et al. (2014)	0.47	US	201	191	CES-D	2008	13–14	Growing up with Media	1	2
Haroz et al. (2014)	0.11	US	192	172	CES-D	2008	15–17	Growing up with Media	1	2
Haroz et al. (2014)	0.25	US	94	106	CES-D	2012	18	Growing up with Media	1	2
Haukkala et al. (2009) *	0.19	Finland	622	833	BDI	1995	24–34	Finrisk- 1995		1
Haukkala et al. (2009) *	0.15	Finland	783	970	BDI	1995	35–44	Finrisk- 1995		1
Haukkala et al. (2009) *	0.07	Finland	885	991	BDI	1995	45–54	Finrisk- 1995		1
Haukkala et al. (2009) *	0.07	Finland	925	983	BDI	1995	55–64	Finrisk- 1995		1
Haukkala et al. (2009) *	0.22	Finland	493	189	BDI	1995	65–74	Finrisk- 1995		1
Hauser et al. (2014) *	−0.07	Germany	128	144	BDI	2012	14–24	Survey zu psychischen Befindlichkeiten Uni Leipzig		2
Hauser et al. (2014) *	0.08	Germany	166	181	BDI	2012	25–34	Survey zu psychischen Befindlichkeiten Uni Leipzig		2
Hauser et al. (2014) *	0.15	Germany	165	195	BDI	2012	35–44	Survey zu psychischen Befindlichkeiten Uni Leipzig		2
Hauser et al. (2014) *	−0.09	Germany	208	252	BDI	2012	45–54	Survey zu psychischen Befindlichkeiten Uni Leipzig		2
Hauser et al. (2014) *	0.07	Germany	212	250	BDI	2012	55–64	Survey zu psychischen Befindlichkeiten Uni Leipzig		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Hauser et al. (2014) *	−0.07	Germany	209	195	BDI	2012	65–74	Survey zu psychischen Befindlichkeiten Uni Leipzig		2
Hauser et al. (2014) *	0.18	Germany	76	113	BDI	2012	85+	Survey zu psychischen Befindlichkeiten Uni Leipzig		2
Huang & Chen (2015) *	0.45	Taiwan	52	64	CES-D	2010	15	–		2
Huang & Chen (2015) *	−0.01	Taiwan	253	283	CES-D	2010	16	–		2
Huang & Chen (2015) *	0.10	Taiwan	205	206	CES-D	2010	17	–		2
Huang & Chen (2015) *	0.32	Taiwan	43	90	CES-D	2010	18	–		2
Hwang et al. (2009) *	0.17	Taiwan	2904	2966	-	2004	12–17	Adolescent Internet Use, Daily Life, & Depressive Mood Survey		2
Inaba et al. (2005) *	0.09	Japan	740	834	CES-D	1999	28–39	National Family Research of Japan ’98 Survey (NFRJ98)		1
Inaba et al. (2005) *	0.15	Japan	675	732	CES-D	1999	40–49	NFRJ98		1
Inaba et al. (2005) *	0.18	Japan	670	794	CES-D	1999	50–59	NFRJ98		1
Inaba et al. (2005) *	0.17	Japan	906	977	CES-D	1999	60–78	NFRJ98		1
Inaba et al. (2005) *	0.27	US	1372	1413	CES-D	1994	28–39	National Survey of Families & Households (NSFH) in the US	1	1
Inaba et al. (2005) *	0.22	US	1013	987	CES-D	1994	40–49	NSFH	1	1
Inaba et al. (2005) *	0.38	US	594	716	CES-D	1994	50–59	NSFH	1	1
Inaba et al. (2005) *	0.29	US	856	1220	CES-D	1994	60–78	NSFH	1	1
Ismayilova et al. (2013) *	0.32	Jordan	3513	3252	-	2009	14–18	–		2
Jaddou et al. (2012) *	0.36	Jordan	1008	2994	DASS-D	2009	25+	–		2
Jang et al. (2009)	0.14	South Korea	1320	1648	CES-D	2006	45–54	Korean Longitudinal Study of Aging		1
Jang et al. (2009)	0.19	South Korea	1163	1341	CES-D	2006	55–64	Korean Longitudinal Study of Aging		1
Jang et al. (2009)	0.32	South Korea	1095	1306	CES-D	2006	65–74	Korean Longitudinal Study of Aging		1
Jang et al. (2009)	0.26	South Korea	483	708	CES-D	2006	75–85	Korean Longitudinal Study of Aging		1
Kaji et al. (2010) *	0.10	Japan	2543	2583	CES-D	2000	50–59	Active Survey of Health & Welfare in Japan		2
Kaji et al. (2010) *	0.04	Japan	1691	1745	CES-D	2000	60–69	Active Survey of Health & Welfare in Japan		2
Kaji et al. (2010) *	0.13	Japan	799	1003	CES-D	2000	70–79	Active Survey of Health & Welfare in Japan		2
Kaji et al. (2010) *	0.10	Japan	200	495	CES-D	2000	80+	Active Survey of Health & Welfare in Japan		2
Karadog et al. (2014) *	0.34	Turkey	400	342	BDI	2012	18–24	Prevalence of Sleep Disorders in the Turkish Adult Population Epidemiology of Sleep (TAPES) Study		1
Karadog et al. (2014) *	0.34	Turkey	538	742	BDI	2012	25–34	TAPES Study		1

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Karadog et al. (2014) *	0.26	Turkey	448	661	BDI	2012	35–44	TAPES Study		1
Karadog et al. (2014) *	0.20	Turkey	451	429	BDI	2012	45–54	TAPES Study		1
Karadog et al. (2014) *	0.29	Turkey	319	270	BDI	2012	55–64	TAPES Study		1
Karadog et al. (2014) *	0.44	Turkey	266	152	BDI	2012	65+	TAPES Study		1
Kim (2016)	0.30	South Korea	1137	1256	-	2003	13–14	Korea Youth Panel Survey		3
Kliem et al. (2014) *	0.03	Germany	2106	2374	BDI	2012	14–91	–		2
Klomek et al. (2009) *	−0.16	Finland	2651	2583	CDI	1989	8	–		2
Kocalevent et al. (2013)	0.12	Germany	292	272	PHQ-9	2006	14–24	–		2
Kocalevent et al. (2013)	0.16	Germany	279	351	PHQ-9	2006	25–34	–		2
Kocalevent et al. (2013)	0.16	Germany	396	542	PHQ-9	2006	35–44	–		2
Kocalevent et al. (2013)	−0.05	Germany	414	457	PHQ-9	2006	45–54	–		2
Kocalevent et al. (2013)	0.04	Germany	398	446	PHQ-9	2006	55–64	–		2
Kocalevent et al. (2013)	0.18	Germany	397	395	PHQ-9	2006	65–74	–		2
Kocalevent et al. (2013)	0.11	Germany	156	236	PHQ-9	2006	75+	–		2
Kokkevi et al. (2009) *	0.43	Armenia	1569	2231	CES-D	2007	16	European School Survey Project on Alcohol & Other Drugs (ESPAD)		3
Kokkevi et al. (2009) *	0.59	Bulgaria	1098	1056	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.66	Croatia	1497	1438	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.53	Cyprus	2936	3182	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.42	Faroe Islands	247	281	CESD	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.69	Finland	2242	2641	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.54	Hungary	1277	1386	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.48	Iceland	1634	1629	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.59	Ireland	932	1136	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.50	Isle of Man	356	362	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.57	Latvia	1059	1135	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.70	Romania	943	1231	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.60	Slovak Rep.	1166	1211	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.70	Slovenia	1525	1466	CES-D	2007	16	ESPAD		3

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Kokkevi et al. (2009) *	0.56	UK	909	1120	CES-D	2007	16	ESPAD		3
Kokkevi et al. (2009) *	0.52	Greece	4631	5242	CES-D	2007	14–18	ESPAD		2
Kokkevi et al. (2011) *	0.61	Greece	5169	5336	CES-D	1984	14–18	Greek National School Population Survey		2
Kopp et al. (1995)	0.07	Hungary	7767	7979	BDI	1988	16–65	–		2
Lee (2015) *	0.16	South Korea	617	779	PHQ-9	2012	50.6	Korean General Social Survey		2
Lei et al. (2014)	0.20	China	1285	1740	CES-D	2012	45–49	China Health & Retirement Longitudinal Study (CHARLS)		2
Lei et al. (2014)	0.24	China	1050	1182	CES-D	2012	50–54	CHARLS		2
Lei et al. (2014)	0.26	China	1484	1591	CES-D	2012	55–59	CHARLS		2
Lei et al. (2014)	0.31	China	1294	1270	CES-D	2012	60–64	CHARLS		2
Lei et al. (2014)	0.30	China	839	801	CES-D	2012	65–59	CHARLS		2
Lei et al. (2014)	0.22	China	639	569	CES-D	2012	70–74	CHARLS		2
Lei et al. (2014)	0.37	China	585	596	CES-D	2012	75+	CHARLS		2
Madianos et al. (1992)	0.45	Greece	1820	2263	CES-D	1978	19–64	–		2
Madianos et al. (1992)	0.33	Greece	1660	2046	CES-D	1984	19–64	–		2
Mäntyselkä et al. (2003) *	0.35	Finland	258	389	DEPS	2002	15–24	Finnish Pain Study		3
Mäntyselkä et al. (2003) *	0.17	Finland	278	378	DEPS	2002	25–34	Finnish Pain Study		3
Mäntyselkä et al. (2003) *	0.12	Finland	309	399	DEPS	2002	35–44	Finnish Pain Study		3
Mäntyselkä et al. (2003) *	−0.08	Finland	336	432	DEPS	2002	45–54	Finnish Pain Study		3
Mäntyselkä et al. (2003) *	0.16	Finland	381	441	DEPS	2002	55–64	Finnish Pain Study		3
Mäntyselkä et al. (2003) *	0.14	Finland	417	437	DEPS	2002	65–74	Finnish Pain Study		3
Margraf et al. (2016) *	−0.12	US	1252	1786	DASS-D	2013	18+	Bochum Optimism and Mental Health (BOOM)- US	1	3
Margraf et al. (2016) *	0.08	Germany	826	1181	DASS-D	2013	18+	BOOM- Germany		3
Margraf et al. (2016) *	0.13	Russia	1413	1607	DASS-D	2013	18+	Boom- Russia		3
Marmorstein (2009) *	0.12	US	262	329	CES-D	1995	12	National Longitudinal Student of Adolescent Health (Add Health)	1	2
Marmorstein (2009) *	0.22	US	1039	1218	CES-D	1995	13	Add Health	1	2
Marmorstein (2009) *	0.30	US	1319	1472	CES-D	1995	14	Add Health	1	2
Marmorstein (2009) *	0.34	US	1778	1883	CES-D	1995	15	Add Health	1	2
Marmorstein (2009) *	0.31	US	2061	1991	CES-D	1995	16	Add Health	1	2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Marmorstein (2009) *	0.19	US	1981	1940	CES-D	1995	17	Add Health	1	2
Marmorstein (2009) *	0.21	US	1512	1427	CES-D	1995	18	Add Health	1	2
Marmorstein (2009) *	0.34	US	237	159	CES-D	1995	19	Add Health	1	2
Maske et al. (2016) *	0.27	Germany	722	781	PHQ-9	2010	18–34	Germany Health Interview and Examination Survey for Adults (DEGS1)		2
Maske et al. (2016) *	0.28	Germany	553	646	PHQ-9	2010	35–44	DEGS1		2
Maske et al. (2016) *	0.28	Germany	741	858	PHQ-9	2010	45–54	DEGS1		2
Maske et al. (2016) *	0.25	Germany	652	718	PHQ-9	2010	55–64	DEGS1		2
Maske et al. (2016) *	0.30	Germany	915	937	PHQ-9	2010	65–79	DEGS1		2
Michal et al. (2011) *	−0.07	Germany	1090	1385	HADS- D	2009	14–94	–		2
Momtaz et al. (2016) *	0.15	Malaysia	564	696	GDS-15	2014	60–69	Identifying Psychosocial and Identifying Economic Risk Factor of Cognitive Impairment among Elderly		3
Momtaz et al. (2016) *	0.14	Malaysia	423	387	GDS-15	2014	70–79	Identifying Psychosocial and Identifying Economic Risk Factor of Cognitive Impairment among Elderly		3
Momtaz et al. (2016) *	0.15	Malaysia	67	65	GDS-15	2014	80+	Identifying Psychosocial and Identifying Economic Risk Factor of Cognitive Impairment among Elderly		3
Morozink et al. (2010) *	0.10	US	541	705	CES-D	2004	35–86	Midlife in the United States (MIDUS)	1	2
Mumford et al. (2013) *	0.48	US	815	765	MHI-D	2000	15	National Longitudinal Survey of Youth (NLSY) ’97	1	2
Mumford et al. (2013) *	0.33	US	819	774	MHI-D	2000	16	NLSY ’97	1	2
Mumford et al. (2013) *	0.29	US	811	773	MHI-D	2000	17	NLSY ’97	1	2
Mumford et al. (2013) *	0.22	US	766	767	MHI-D	2000	18	NLSY ’97	1	2
Mumford et al. (2013) *	0.23	US	657	681	MHI-D	2000	19	NLSY ’97	1	2
Munhoz et al. (2016) *	0.32	Brazil	6246	8075	PHQ-9	2013	18–29	Brazilian National Healthy Survey		2
Munhoz et al. (2016) *	0.34	Brazil	6049	8220	PHQ-9	2013	30–39	Brazilian National Healthy Survey		2
Munhoz et al. (2016) *	0.37	Brazil	5079	6326	PHQ-9	2013	40–49	Brazilian National Healthy Survey		2
Munhoz et al. (2016) *	0.37	Brazil	3991	5039	PHQ-9	2013	50–59	Brazilian National Healthy Survey		2
Munhoz et al. (2016) *	0.26	Brazil	2595	3643	PHQ-9	2013	60–69	Brazilian National Healthy Survey		2
Munhoz et al. (2016) *	0.27	Brazil	1428	2013	PHQ-9	2013	70–79	Brazilian National Healthy Survey		2
Munhoz et al. (2016) *	0.14	Brazil	532	966	PHQ-9	2013	80+	Brazilian National Healthy Survey		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Neumark-Sztainer et al. (2000) *	0.12	US	239	267	CDI	1997	10	Commonwealth Fund Survey (of the Health of Adolescent Girls & Boys)	1	1
Neumark-Sztainer et al. (2000) *	0.02	US	254	305	CDI	1997	11	Commonwealth Fund Survey	1	1
Neumark-Sztainer et al. (2000) *	0.04	US	386	461	CDI	1997	12	Commonwealth Fund Survey	1	1
Neumark-Sztainer et al. (2000) *	0.29	US	420	484	CDI	1997	13	Commonwealth Fund Survey	1	1
Neumark-Sztainer et al. (2000) *	0.22	US	370	462	CDI	1997	14	Commonwealth Fund Survey	1	1
Neumark-Sztainer et al. (2000) *	0.31	US	361	503	CDI	1997	15	Commonwealth Fund Survey	1	1
Neumark-Sztainer et al. (2000) *	0.32	US	399	497	CDI	1997	16	Commonwealth Fund Survey	1	1
Neumark-Sztainer et al. (2000) *	0.25	US	314	372	CDI	1997	17	Commonwealth Fund Survey	1	1
O'Halloran et al. (2014) *	0.21	Ireland	603	727	CES-D	2010	50–54	The Irish Longitudinal Study on Ageing (TILDA)		2
O'Halloran et al. (2014) *	0.18	Ireland	591	754	CES-D	2010	55–59	TILDA		2
O'Halloran et al. (2014) *	0.20	Ireland	502	647	CES-D	2010	60–64	TILDA		2
O'Halloran et al. (2014) *	0.19	Ireland	487	502	CES-D	2010	65–69	TILDA		2
O'Halloran et al. (2014) *	0.35	Ireland	383	376	CES-D	2010	70–74	TILDA		2
O'Halloran et al. (2014) *	0.27	Ireland	449	521	CES-D	2010	75+	TILDA		2
Oh et al. (2013) *	0.30	South Korea	14452	16146	CES-D	2009	19–29	Korean Community Health Survey		2
Oh et al. (2013) *	0.19	South Korea	20031	21340	CES-D	2009	30–39	Korean Community Health Survey		2
Oh et al. (2013) *	0.17	South Korea	23381	24288	CES-D	2009	40–49	Korean Community Health Survey		2
Oh et al. (2013) *	0.22	South Korea	19781	21722	CES-D	2009	50–59	Korean Community Health Survey		2
Oh et al. (2013) *	0.39	South Korea	15986	19191	CES-D	2009	60–69	Korean Community Health Survey		2
Oh et al. (2013) *	0.35	South Korea	12912	20365	CES-D	2009	70+	Korean Community Health Survey		2
Ojard et al. (2015) *	0.29	US	8751	8802	CES-D	2005	45+	Reasons for Geographic & Racial Differences in Stroke (REGARDS)	2	2
Ojard et al. (2015) *	0.19	US	4705	7710	CES-D	2005	45+	REGARDS	3	2
Okabayashi et al. (2004) *	0.21	Japan	995	1205	CES-D	1987	60+	–		3

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Oksuzyan et al. (2010)*	0.13	US	640	1013	CES-D	2006	50–54	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.05	US	1051	1472	CES-D	2006	55–59	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.10	US	936	1463	CES-D	2006	60–64	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.11	US	1537	1879	CES-D	2006	65–69	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.12	US	1267	1560	CES-D	2006	70–74	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.16	US	906	1128	CES-D	2006	75–79	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.11	US	647	917	CES-D	2006	80–84	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.04	US	344	649	CES-D	2006	85–89	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.04	US	142	379	CES-D	2006	90+	US Health & Retirement Survey	1	1
Oksuzyan et al. (2010)*	0.01	Japan	181	213	CES-D	2006	67–69	Nihon University Japanese Longitudinal Study of Aging (NUJLSOA)		1
Oksuzyan et al. (2010)*	0.00	Japan	435	469	CES-D	2006	70–74	NUJLSOA		1
Oksuzyan et al. (2010)*	−0.03	Japan	302	329	CES-D	2006	75–79	NUJLSOA		1
Oksuzyan et al. (2010)*	−0.03	Japan	263	373	CES-D	2006	80–84	NUJLSOA		1
Oksuzyan et al. (2010)*	0.04	Japan	133	217	CES-D	2006	85–89	NUJLSOA		1
Olsen et al. (2006)	0.31	Denmark	121	165	SCL-D	2000	19–34	–		2
Olsen et al. (2006)	0.29	Denmark	133	184	SCL-D	2000	35–49	–		2
Olsen et al. (2006)	0.28	Denmark	135	150	SCL-D	2000	50–64	–		2
Olsen et al. (2006)	0.09	Denmark	143	121	SCL-D	2000	65–80	–		2
Ostbye et al. (2009)*	0.20	Sri Lanka	463	623	GDS	2006	60+	National Sri Lanka Aging Survey		2
Park et al. (2012)*	−0.04	South Korea	98	309	GDS	2008	85+	Nationwide Survey on Dementia in Korea		2
Park et al. (2012)*	0.13	South Korea	180	447	GDS	2008	80–84	Nationwide Survey on Dementia in Korea		2
Park et al. (2012)*	0.17	South Korea	455	740	GDS	2008	75–79	Nationwide Survey on Dementia in Korea		2
Park et al. (2012)*	0.36	South Korea	790	1037	GDS	2008	70–74	Nationwide Survey on Dementia in Korea		2
Park et al. (2012)*	0.33	South Korea	885	1077	GDS	2008	64–69	Nationwide Survey on Dementia in Korea		2
Revah-Levy et al. (2011)	0.43	France	19884	19658	ADRS	2008	17	ESCAPAD 2008 (Enqueˆte sur lar Santé et les Consommations lors de l’Appel de Préparation à la Défense)		1
Rey et al. (2001)*	0.30	Australia	594	654	CES-D	1998	13–17	National Survey of Mental Health & Well-being		2
Rief et al. (2012)*	0.06	Germany	1202	1316	PHQ-9	2008	14+	–		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Risal et al. (2016) *	0.02	Nepal	189	300	HADS-D	2013	18–25	–		2
Risal et al. (2016) *	0.32	Nepal	217	440	HADS-D	2013	26–35	–		2
Risal et al. (2016) *	0.20	Nepal	196	242	HADS-D	2013	36–45	–		2
Risal et al. (2016) *	0.37	Nepal	138	160	HADS-D	2013	46–55	–		2
Risal et al. (2016) *	0.09	Nepal	121	97	HADS-D	2013	56–65	–		2
Sandman et al. (2015) *	0.25	Finland	263	361	BDI	2007	25–34	Finrisk- 2007		3
Sandman et al. (2015) *	0.26	Finland	318	392	BDI	2007	35–44	Finrisk- 2007		3
Sandman et al. (2015) *	0.14	Finland	371	442	BDI	2007	45–54	Finrisk- 2007		3
Sandman et al. (2015) *	0.07	Finland	412	452	BDI	2007	55–64	Finrisk- 2007		3
Sandman et al. (2015) *	0.16	Finland	407	420	BDI	2007	65–74	Finrisk- 2007		3
Sandman et al. (2015) *	0.29	Finland	260	410	BDI	2012	25–34	Finrisk- 2012		3
Sandman et al. (2015) *	0.30	Finland	338	469	BDI	2012	35–44	Finrisk- 2012		3
Sandman et al. (2015) *	0.11	Finland	430	534	BDI	2012	45–54	Finrisk- 2012		3
Sandman et al. (2015) *	0.20	Finland	503	580	BDI	2012	55–64	Finrisk- 2012		3
Sandman et al. (2015) *	0.16	Finland	613	592	BDI	2012	65–74	Finrisk- 2012		3
Scafato et al. (2012) *	0.56	Italy	1713	1501	GDS	1993	65–84	Italian Longitudinal Study on Aging		2
Seaton et al. (2008)	0.02	US	563	605	CES-D	2002	13–17	National Survey of African Life	3	2
Seppälä et al. (2012) *	0.19	Finland	391	483	BDI	2007	45–54	FIN-D2D		2
Seppälä et al. (2012) *	0.21	Finland	450	511	BDI	2007	55–64	FIN-D2D		2
Seppälä et al. (2012) *	0.23	Finland	487	484	BDI	2007	65–74	FIN-D2D		2
Shiovitz-Ezra et al. (2009) *	0.23	US	521	484	CES-D	2006	57–64	National Social Life, Health, & Aging Project (NSHAP)	1	2
Shiovitz-Ezra et al. (2009) *	0.16	US	543	537	CES-D	2006	65–74	NSHAP	1	2
Shiovitz-Ezra et al. (2009) *	0.09	US	373	499	CES-D	2006	75–85	NSHAP	1	2
Sigfusdottir et al. (2008)	0.49	Iceland	1927	1802	SCL-D	1997	14–15	Youth in Iceland- 1997		2
Sigfusdottir et al. (2008)	0.39	Iceland	2908	3132	SCL-D	2000	14–15	Youth in Iceland- 2000		2
Sigfusdottir et al. (2008)	0.45	Iceland	1709	1662	SCL-D	2003	14–15	Youth in Iceland- 2003		2
Sigfusdottir et al. (2008)	0.55	Iceland	3437	3503	SCL-D	2006	14–15	Youth in Iceland- 2006		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Song (2011) *	0.11	US	939	1124	CES-D	2005	21–64	–	2	3
Song (2011) *	0.30	US	167	188	CES-D	2005	21–64	–	3	3
Song (2011) *	0.21	US	187	225	CES-D	2005	21–64	–	5	3
Sonnenberg et al. (2013) *	0.26	Netherlands	449	483	CES-D	1993	55–64	Longitudinal Aging Study Amsterdam		1
Sonnenberg et al. (2013) *	0.44	Netherlands	423	476	CES-D	1993	65–74	Longitudinal Aging Study Amsterdam		1
Sonnenberg et al. (2013) *	0.31	Netherlands	497	495	CES-D	1993	75–85	Longitudinal Aging Study Amsterdam		1
Steptoe et al. (2012)	0.28	England	3540	4255	CES-D	2009	50–90	English Longitudinal Study of Ageing		1
Strong et al. (2016) *	0.22	Taiwan	2113	2148	-	2001	13	Taiwan Education Panel Survey		2
Sugihara et al. (2008)	0.12	Japan	2533	1440	CES-D	1999	55–64	Japanese Health & Retirement Study		1
Symonds et al. (2016) *	0.42	England	6549	6422	GHQ-D	2005	15	Longitudinal Study of Young People in England		3
Thege et al. (2009) *	0.14	Hungary	5416	6709	BDI	2002	18–98	Hungaro Study		3
Thibodeau et al. (2014) *	0.29	US	550	500	PHQ-9	2008	18–29	National Health & Nutrition Examination Survey (NHANES)- 2008	1	1
Thibodeau et al. (2014) *	0.34	US	431	447	PHQ-9	2008	30–39	NHANES- 2008	1	1
Thibodeau et al. (2014) *	0.30	US	391	452	PHQ-9	2008	40–49	NHANES- 2008	1	1
Thibodeau et al. (2014) *	0.23	US	418	400	PHQ-9	2008	50–59	NHANES- 2008	1	1
Thibodeau et al. (2014) *	0.29	US	434	459	PHQ-9	2008	60–69	NHANES- 2008	1	1
Thibodeau et al. (2014) *	0.25	US	483	482	PHQ-9	2008	70+	NHANES- 2008	1	1
Torikka et al. (2014) *	0.35	Finland	47586	47049	BDI	2001	14–16	School Health Promotion Study, 2000–2001		2
Torikka et al. (2014) *	0.34	Finland	50744	49236	BDI	2003	14–16	School Health Promotion Study (SHPS), 2002–2003		2
Torikka et al. (2014) *	0.35	Finland	53057	51713	BDI	2005	14–16	SHPS 2004–2005		2
Torikka et al. (2014) *	0.33	Finland	54315	54005	BDI	2007	14–16	SHPS, 2006–2007		2
Torikka et al. (2014) *	0.33	Finland	54132	54035	BDI	2009	14–16	SHPS, 2008–2009		2
Torikka et al. (2014) *	0.37	Finland	51116	51066	BDI	2011	14–16	SHPS, 2010–2011		2
Torres & Wong (2013) *	0.38	Mexico	1094	1523	CES-D	2001	60–69	Mexican Health & Aging Study		2
Torres & Wong (2013) *	0.38	Mexico	672	843	CES-D	2001	70–79	Mexican Health & Aging Study		2
Torres & Wong (2013) *	0.27	Mexico	208	330	CES-D	2001	80+	Mexican Health & Aging Study		2
Torres & Wong (2013) *	0.49	Mexico	2027	2166	CES-D	2001	50–59	Mexican Health & Aging Study		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Van de Velde et al. (2010) *	0.14	Austria	1099	1285	CES-D	2007	15–99	European Social Survey (ESS)- 3		1
Van de Velde et al. (2010) *	0.33	Belgium	839	958	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.21	Bulgaria	544	828	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.17	Switzerland	840	963	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.42	Cyprus	471	523	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.21	Germany	1437	1473	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.16	Denmark	729	756	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.21	Estonia	658	855	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.35	Spain	905	969	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.09	Finland	915	976	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.29	France	968	1018	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.17	UK	1137	1257	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.18	Hungary	640	874	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.03	Ireland	812	928	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.31	Netherlands	897	991	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.15	Norway	889	859	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.29	Poland	815	896	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.37	Portugal	911	1309	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.35	Russian Fed	994	1395	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.28	Sweden	948	973	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.23	Slovenia	665	807	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.13	Slovakia	839	895	CES-D	2007	15–99	ESS-3		1
Van de Velde et al. (2010) *	0.21	Ukraine	849	1136	CES-D	2007	15–99	ESS-3		1
Van de Velde (personal communication, April 2, 2015) *	0.27	Belgium	910	958	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.24	Bulgaria	971	1282	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.41	Cyprus	485	631	CES-D	2013	15–99	ESS-6		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Van de Velde (2015) *	0.23	Czech Republic	1012	977	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.20	Denmark	832	814	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.13	Estonia	999	1379	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.09	Finland	1074	1121	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.24	Germany	1487	1469	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.06	Ireland	1266	1357	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.09	Israel	1142	1354	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.25	Kosovo	619	676	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.24	Netherlands	866	979	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.14	Norway	855	763	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.31	Poland	908	985	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.28	Portugal	867	1284	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.27	Russian Fed.	978	1484	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.08	Slovakia	795	1046	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.22	Slovenia	572	684	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.35	Spain	912	975	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.20	Sweden	947	900	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.28	Switzerland	746	747	CES-D	2013	15–99	ESS-6		2
Van de Velde (2015) *	0.15	UK	990	1293	CES-D	2013	15–99	ESS-6		2
van Praag et al. (2009)	0.29	Belgium	9378	10085	SCL-D	2003	15+	Belgian Health Interview Survey		1
Villatoro et al. (1998) *	0.08	Mexico	5319	5511	CES-D	1991	12	1991 National School Survey		2
Villatoro et al. (1998) *	0.24	Mexico	7002	6819	CES-D	1991	13	1991 National School Survey		2
Villatoro et al. (1998) *	0.29	Mexico	6305	5768	CES-D	1991	14	1991 National School Survey		2
Villatoro et al. (1998) *	0.35	Mexico	4848	4000	CES-D	1991	15	1991 National School Survey		2
Villatoro et al. (1998) *	0.36	Mexico	3349	2971	CES-D	1991	16	1991 National School Survey		2
Villatoro et al. (1998) *	0.42	Mexico	2197	1725	CES-D	1991	17	1991 National School Survey		2
Villatoro et al. (1998) *	0.39	Mexico	991	635	CES-D	1991	18	1991 National School Survey		2

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Villatoro et al. (1998) *	0.28	Mexico	431	297	CES-D	1991	19	1991 National School Survey		2
von Soest & Wichstrom (2014) *	0.21	Norway	724	802	SCL-D	2002	13	Young in Norway		2
von Soest et al. (2014) *	0.32	Norway	899	950	SCL-D	2002	14	Young in Norway		2
von Soest et al. (2014) *	0.38	Norway	932	959	SCL-D	2002	15	Young in Norway		2
von Soest et al. (2014) *	0.41	Norway	704	698	SCL-D	2002	16	Young in Norway		2
von Soest et al. (2014) *	0.42	Norway	1004	992	SCL-D	2002	17	Young in Norway		2
von Soest et al. (2014) *	0.42	Norway	714	906	SCL-D	2002	18	Young in Norway		2
von Soest et al. (2014) *	0.21	Norway	418	416	SCL-D	2010	12	Young in Norway		2
von Soest et al. (2014) *	0.21	Norway	694	761	SCL-D	2010	13	Young in Norway		2
von Soest et al. (2014) *	0.38	Norway	610	653	SCL-D	2010	14	Young in Norway		2
von Soest et al. (2014) *	0.52	Norway	573	695	SCL-D	2010	15	Young in Norway		2
von Soest et al. (2014) *	0.45	Norway	621	612	SCL-D	2010	16	Young in Norway		2
von Soest et al. (2014) *	0.41	Norway	76	714	SCL-D	2010	17	Young in Norway		2
Walker et al. (2005)	0.13	New Zealand	4266	5049	RADS	2001	12–18	Youth 2000		2
Wang et al. (2010) *	0.29	US	1164	1186	-	2006	11	Health Behavior in School-Aged Children (HBSC)	1	2
Wang et al. (2010) *	0.44	US	892	951	-	2006	12	HBSC	1	2
Wang et al. (2010) *	0.49	US	789	997	-	2006	13	HBSC	1	2
Wang et al. (2010) *	0.51	US	721	742	-	2006	14	HBSC	1	2
Wang et al. (2010) *	0.59	US	793	804	-	2006	15	HBSC	1	2
Wichstrom (1999) *	-0.88	Norway	628	689	SCL-D	1992	12	Young in Norway		1
Wichstrom (1999) *	0.18	Norway	628	689	SCL-D	1992	13	Young in Norway		1
Wichstrom (1999) *	0.44	Norway	827	802	SCL-D	1992	14	Young in Norway		1
Wichstrom (1999) *	0.50	Norway	870	869	SCL-D	1992	15	Young in Norway		1
Wichstrom (1999) *	0.58	Norway	919	898	SCL-D	1992	16	Young in Norway		1
Wichstrom (1999) *	0.54	Norway	754	725	SCL-D	1992	17	Young in Norway		1
Wichstrom (1999) *	0.58	Norway	665	710	SCL-D	1992	18	Young in Norway		1

Study	*d*	Country	NM	NF	Measure	Year	Age	Sample	E	F
Wichstrom (1999) *	0.45	Norway	271	300	SCL-D	1992	19	Young in Norway		1
Wichstrom (1999) *	0.59	Norway	96	161	SCL-D	1992	20	Young in Norway		1
Yamada & Teerawichitchainan (2015) *	0.37	Vietnam	458	598	CES-D	2011	60–69	Vietnam Aging Survey- 2011		3
Yamada et al. (2015) *	0.53	Vietnam	280	395	CES-D	2011	70–79	Vietnam Aging Survey- 2011		3
Yamada et al. (2015) *	0.39	Vietnam	194	300	CES-D	2011	80+	Vietnam Aging Survey- 2011		3
Zemore et al. (2013) *	0.13	US	2306	2599	CES-D	2000	18+	National Alcohol Surveys (NAS)	2	3
Zemore et al. (2013) *	0.13	US	514	847	CES-D	2000	18+	NAS	3	3
Zemore et al. (2013) *	0.11	US	464	530	CES-D	2000	18+	NAS	5	3
Zemore et al. (2013) *	0.16	US	1903	2064	CES-D	2005	18+	NAS	2	3
Zemore et al. (2013) *	0.09	US	383	671	CES-D	2005	18+	NAS	3	3
Zemore et al. (2013) *	0.09	US	784	826	CES-D	2005	18+	NAS	5	3
Zemore et al. (2013) *	0.15	US	1904	2695	CES-D	2010	18+	NAS	2	3
Zemore et al. (2013) *	0.10	US	517	1078	CES-D	2010	18+	NAS	3	3
Zemore et al. (2013) *	0.09	US	517	936	CES-D	2010	18+	NAS	5	3
Zunzunegui et al. (2007)	0.52	Israel	523	550	CES-D	1989	75–84	Cross Sectional & Longitudinal Aging Study		1

Note. Sample = sample name (not all samples had a name); Measure = depression symptom measure (the version of each measure- including number of items, language, and response scale- varied for each sample); *d* = uncorrected effect size; NM = *n* males; NF = *n* females; Year = year of data collection; Age = age or age range (in years); E = ethnicity (only applies to U.S. samples): 1 = mixed, 2 = > 85% Caucasian, 3 = > 85% African American, 4 = > 85% Asian American, 5 = >85% Hispanic; F = focus of article: 1 = gender, 2 = depression, 3 = other;

* = received additional data from author; BDI = Beck Depression Inventory (Beck et al., 1961, 1996); CDI = Children's Depression Inventory (Kovacs, 1985); MDI = Major Depression Inventory (Bech et al., 2001); DTS = Depressive Tendencies Scale (Alsaker et al., 1991); HDL-D = Health and Daily Living Form- Depression Scale (Moos et al., 1985); CES-D = Center for Epidemiological Depression Scale (Radloff, 1977); EURO-D (Prince et al., 1999); MHI-D = Mental Health Inventory- Depression Items (Ware & Sherbourne, 1992); RADS = Reynolds Adolescent Depression Scale (Reynolds, 1986); SCL-D = Symptom Checklist-90- Depression items (Derogatis et al., 1973); SMFQ = Short Mood and Feelings Questionnaire (Angold et al., 1995); DASS-D = Depression Anxiety Stress Scales- Depression Subscale (Lovibond & Lovibond, 1995); PHQ-9 = Patient Health Questionnaire- 9 (Kroenke et al., 2001); DEPS = Depression Scale (Salokangas et al., 1995); HADS-D = Hospital Anxiety and Depression Scale- Depression subscale (Zigmond & Snaith, 1983); GDS = Geriatric Depression Scale (Yesavage et al., 1982); ADRS = Adolescent Depression Rating Scale (Revah-Levy et al., 2007); GHQ-D = General Health Questionnaire-Depression items (Symonds et al., 2016).

Table 3

Descriptive Statistics for Moderator Variables Included in Major Depression Meta-analysis and Depression Symptom Meta-analysis

	Major Depression	Depression Symptoms	
Moderators	**Frequency (%) or M(SD)**	**Frequency (%) or M(SD)**	
Age[+]	44.81 (18.40) Range: 12–85	42.69 (22.97) Range: 8–92	
Nationality			
US/ Canadian	137 (46%)	88 (21%)	
European	58 (19%)	219 (53%)	
Asian	28 (12%)	61 (15%)	
African	35 (8%)	0 (0%)	
Australian/ New Zealander	18 (7%)	9 (2%)	
Central/ South American	12 (4%)	24 (6%)	
Russian	8 (3%)	8 (2%)	
Middle Eastern	5 (2%)	4 (1%)	
GDP			
High-income	223 (74%)	330 (80%)	
Low- to middle- income	77 (26%)	83 (20%)	
Ethnicity (U.S.)			
Mixed	79 (89%)	66 (76%)	
African Americans	4 (4%)	7 (8%)	
European Americans	2 (2%)	6 (7%)	
Hispanic Americans	2 (2%)	8 (9%)	
Native Americans	2 (2%)	0 (0%)	
Asian Americans	1 (1%)	0 (0%)	
Year of data collection	2004.53 (5.52) Range: 1991–2014	2004.70 (7.25) Range: 1978–2014	
Data source			
Unpublished data	167 (56%)	337 (86%)	
Published data	133 (44%)	56 (14%)	
Focus of article			
Depression	210 (70%)	233 (56%)	
Other	62 (21%)	61 (15%)	
Gender	28 (9%)	119 (29%)	
Type of Assessment			
Diagnostic Interview		*Symptom Measure*	
WMH-CIDI	135 (45%)	CES-D	198 (48%)
CIDI (not WMH- or -SF)	47 (16%)	BDI	49 (12%)
2002 World Health Survey	46 (15%)	SCL-D	36 (9%)
CIDI-SF	31 (10%)	PHQ-9	28 (7%)
AUDADIS	12 (4%)	DASS-D	11 (3%)
MINI	10 (4%)	EURO-D	11 (3%)

	Major Depression	Depression Symptoms	
Moderators	**Frequency (%) or M(SD)**	**Frequency (%) or M(SD)**	
DISC-IV	5 (3%)	HADS-D	11 (3%)
CIS-R	4 (1%)	MHI-D	11 (3%)
DIS	4 (1%)	CDI	10 (2%)
NSA interview	3 (1%)	GDS	10 (2%)
DAWBA	2 (1%)	Other	8 (2%)
SADS	1 (<1%)	RADS	8 (2%)
		DEPS	6 (2%)
		DTS	5 (1%)
		DMI	4(1%)
		MDI	2(1%)
		ADMSS	1 (<1%)
		ADRS	1 (<1%)
		GHQ-D	1 (<1%)
		HDL-D	1 (<1%)
		HSCL-D	1 (<1%)
Manual			
DSM-IV/ DSM- IV-TR	265 (88%)		
DSM-III/ DSM- III-R	18 (6%)		
ICD-10	17 (6%)		
Type			
Depressive Episode	215 (72%)		
Major Depressive Disorder	85 (28%)		
Time span			
12 months	263 (88%)		
Lifetime	23 (8%)		
6 months	9 (3%)		
1 month	4 (1%)		
Current	1 (<1%)		

Note. MDE = major depressive episode (also includes ICD-10 depressive episode). MDD = major depressive disorder. Descriptive statistics for major depression meta-analysis reflect all 300 effect sizes, except for U.S. ethnicity (90 effect sizes). Descriptive statistics for depression symptom meta-analysis reflect all 413 effect sizes, except for U.S. ethnicity (87 effect sizes).

[+]Age represents mean or midpoint for all effect sizes. See Tables 1 & 2 Notes for an explanation of Diagnostic Interview acronyms (e.g., CIDI) and symptom Measure acronyms (e.g., CES-D).

Table 4

Weighted ANOVAs with each Moderator Predicting Gender Differences in Major Depression (unshaded) and Gender Differences in Depression Symptoms (shaded)

Categorical Moderators	OR	*d*	95% CI	*k*	$Q_{between}$	Q_{within}
Age Group (in years)				184@	122.54**	231.75*
12	**2.37**	0.48	[1.68, 3.37]	2		0.38
13–15	**3.02**	0.61	[2.76, 3.30]	24		43.13*
16–19	**2.69**	0.55	[2.39, 3.03]	17		14.54
20–29	**1.93**	0.36	[1.76, 2.12]	26		23.43
30–39	**1.83**	0.33	[1.65, 2.03]	20		15.89
40–49	**1.71**	0.30	[1.56, 1.87]	29		28.04
50–59	**1.80**	0.32	[1.63, 2.00]	25		17.85
60–69	**1.79**	0.32	[1.56, 2.06]	18		18.21
70+	**2.02**	0.39	[1.75, 2.33]	23		70.28*
Age group (in years)				324@	117.90**	319.00
8–12	1.18	**0.09**	[0.00, 0.17]	13		17.52
13–15	1.89	**0.35**	[0.32, 0.39]	53		51.19
16–19	2.10	**0.41**	[0.37, 0.44]	66		84.60*
20–29	1.72	**0.30**	[0.23, 0.37]	19		9.44
30–39	1.52	**0.23**	[0.17, 0.29]	21		6.16
40–49	1.46	**0.21**	[0.15, 0.26]	24		8.27
50–59	1.41	**0.19**	[0.14, 0.25]	29		24.59
60–69	1.57	**0.25**	[0.21, 0.29]	44		66.89*
70–79	1.52	**0.23**	[0.18, 0.28]	29		29.55
80+	1.46	**0.21**	[0.15, 0.26]	26		20.80
GDP				300	4.13*	316.25
High-income	**2.00**	0.38	[1.91, 2.09]	223		238.33
Low- to middle- income	**1.82**	0.33	[1.69, 1.97]	77		77.92
GDP				413	1.66	405.53
High-income	1.60	**0.26**	[0.25, 0.28]	330		351.71

Categorical Moderators	OR	*d*	95% CI	*k*	$Q_{between}$	Q_{within}
Low- to middle- income	1.69	**0.29**	[0.26, 0.33]	83		53.82
Ethnicity (U.S.)				89	2.24	88.34
Mixed	**2.20**	0.43	[2.05, 2.36]	81		85.40
African Americans	**1.74**	0.31	[1.23, 2.46]	4		2.71
European Americans	**2.23**	0.44	[1.45, 3.43]	2		0.04
Hispanic Americans	**1.95**	0.37	[1.24, 3.07]	2		0.18
Native Americans	**1.86**	0.34	[1.05, 3.30]	2		0.02
Ethnicity (U.S.)				87	5.24	85.92
Mixed	1.52	**0.23**	[0.21, 0.26]	66		75.20
African Americans	1.57	**0.13**	[0.04, 0.22]	7		2.59
European Americans	1.39	**0.18**	[0.09, 0.27]	6		1.69
Hispanic Americans	1.49	**0.22**	[0.13, 0.31]	8		6.44
Data Source				300	111.54**	316.34
Unpublished data	**1.83**	0.33	[1.74, 1.93]	167		
Published data	**2.09**	0.41	[1.98, 2.20]	133		
Data Source				413	1.21	405.99
Unpublished data	1.63	**0.27**	[0.26, 0.29]	357		367.42
Published data	1.57	**0.25**	[0.20, 0.29]	56		38.56
Focus of article				300	15.31**	319.19
Depression	**1.86**	0.34	[1.77, 1.94]	210		219.21
Other	**2.21**	0.44	[2.05, 2.38]	62		91.28*
Gender	**2.04**	0.39	[1.80, 2.32]	28		8.69
Focus of article				413	2.37	405.52
Depression	1.60	**0.26**	[0.24, 0.28]	233		167.47
Other	1.69	**0.29**	[0.24, 0.33]	61		685.28*
Gender	1.66	**0.28**	[0.25, 0.31]	119		152.77*
Diagnostic Interview				300	0.85	316.59
WMH-CIDI	**1.99**	0.38	[1.88, 2.11]	135		181.95*
Other	**1.92**	0.36	[1.82, 2.02]	165		134.65
Symptom Measure				413	18.26**	406.14

Categorical Moderators	OR	*d*	95% CI	*k*	$Q_{between}$	Q_{within}
CES-D	2.48	**0.25**	[0.23, 0.28]	198		158.23
BDI	1.44	**0.20**	[0.15, 0.25]	49		23.28
Other	1.75	**0.31**	[0.28, 0.33]	166		224.63
Manual for Major Depression				300	2.42	315.51
DSM-IV/ DSM-IV-TR	**1.97**	0.37	[1.89, 2.05]	265		282.46
DSM-III/ DSM- III-R	**1.97**	0.37	[1.69, 2.30]	18		4.89
ICD-10	**1.73**	0.30	[1.47, 2.03]	17		28.16*
Type for Major Depression				300	0.82	313.80
Depressive Episode	**1.93**	0.36	[1.85, 2.02]	215		251.50*
Major Depressive Disorder	**2.01**	0.38	[1.87, 2.17]	85		62.30
Time span for Major Depression				299	2.96	313.99
12 months	**1.96**	0.37	[1.88, 2.04]	263		298.14+
Lifetime	**1.98**	0.38	[1.72, 2.28]	23		9.78
6 months	**2.01**	0.38	[1.63, 2.47]	9		5.16
1 month	**1.49**	0.22	[1.09, 2.04]	4		0.91

Note. OR = weighted mean effect size. *d* = weighted mean effect size. 95% CI = 95% confidence interval for *d*. *k* = number of effect sizes for moderator or category in each moderator. $Q_{between}$ = Significant values indicate that there is significant variability accounted for by the moderator. Q_{within} = Significant values indicate that studies are still heterogeneous after accounting for the moderator variable. MDE = major depressive episode (also includes ICD-10 depressive episode).

$^{+}p < .10$.

$^{*}p < .05$.

$^{**}p < .001$.

@ = To more sensitively test developmental effects, lifetime depression was excluded for major depression diagnoses and samples with large age ranges (e.g., 18–64) were excluded for both meta-analyses.

Table 5

Separate Weighted OLS Regressions with each Moderator predicting Gender Differences in Major Depression (unshaded) and Gender Differences in Depression Symptoms (shaded)

Continuous Moderators	β	Exp(β)	*k*	Q_{model}	$Q_{residual}$	R^2
Year of data collection	0.14*	1.01	300	6.25*	316.48	0.02
Year of data collection	0.00		413	0.66	405.64	0.00
Age@			184	82.47**	221.35*	0.27
Linear	−0.45**	0.99				
Quadratic	0.35**	1.00				
Age@			324	40.06**	319.83	0.11
Linear	−0.37**					
Quadratic	0.12*					
Nation-level economic indicators						
Income inequality	0.09	1.01	234	2.19	252.70	0.01
Nation-level economic indicators						
Income inequality	−0.11*		316	3.73*	308.77	0.01
Nation-level gender equity indicators						
Contraceptive prevalence	0.22**	1.01	294	16.14**	308.79	0.05
Executive positions	0.10	1.00	256	2.65	271.35	0.01
Literacy ratio	0.18**	1.84	297	11.08**	313.62	0.03
Nation-level gender equity indicators						
Contraceptive prevalence	0.03		369	0.36	362.30	0.00
Executive positions	−0.06		376	1.24	369.63	0.00
Literacy ratio	−0.03		404	0.28	397.68	0.00

Note. Each moderator was run in a separate regression, except for the age variables which were run in a multiple regression. β = Beta. Negative values indicate that there are larger reported gender differences at lower levels of the moderator and smaller reported gender differences at higher levels of the moderator. *k* = number of effect sizes for each age. 95% CI = 95% confidence interval for β. Exp(β) = Exponent of Beta. Significance for Exp(β) is not indicated because it is the same as β. Q_{model} = Significant values indicate that there is significant variability accounted for by the moderator. $Q_{residual}$ = Significant values indicate that studies are still heterogeneous after accounting for the moderator variable. R^2 = Amount of variance accounted for by the moderator(s).

$^{+}p < .10$.

* $p < .05$.

** $p < .001$.

@ = For age as a moderator, lifetime depression was excluded and samples with large age ranges (e.g., 18–64) were excluded to more sensitively test developmental effects.

Table 6

Comparison of Key Findings of Diagnosis Meta-analysis and Symptom Meta-analysis

	Major Depression	**Depression Symptoms**
Overall effect size for gender differences	**OR = 1.95**	***d* = 0.27**
Age trends	Significant quadratic trend. OR peaked at ages 13–15, declined into the 20s, and stayed stable after that.	Significant quadratic trend. No gender difference at ages 8–11. *d* peaked at age 16, declined into the 30s, and stayed stable after that.
Nation-level economic indicators		
High-income v. low- to middle-income	Larger OR in wealthier nations	n.s. (significant with outliers excluded, smaller OR in wealthier nations)
Income inequality	n.s.	Smaller *d* in nations with greater income inequality (n.s. with outliers excluded)
Nation-level gender-equity indicators		
Contraceptive prevalence	Larger OR with greater contraception	n.s.
Executive positions	n.s. (significant with outliers excluded, larger OR with more executive positions)	n.s.
Literacy ratio	Larger OR with greater female: male literacy	n.s.
Ethnicity, U.S.	n.s.	n.s.

Note. n.s. = not significant.