Published in final edited form as:

J Women Aging. 2016 ; 28(6): 521–529. doi:10.1080/08952841.2015.1072027.

Transforming mental health services to address gender disparities in depression risk factors

Karen Whiteman, Nicole Ruggiano, and Barbara Thomlison

School of Social Work, Florida Atlantic University, Boca Raton, Florida, USA

Abstract

Depression in older women is a significant and growing problem. Women who experience life stressors across the life span are at higher risk for developing depression than their male counterparts. Research has focused primarily on identifying and reducing the symptoms of depression for the general aging population, disregarding gender-specific differences in the foundational causes of depression. This article examines how women's unique experiences influence the development of depression and highlights how the current mental health system could better meet older women's needs by moving from a gender-neutral model to one that emphasizes women's experiences.

Keywords

Depression; older adults; women

Introduction

Research on gender-based differences in psychiatric epidemiology has consistently shown a higher prevalence of depression among women than men (Blazer, Kessler, McGonagle, & Swartz, 1994; Burt & Stein, 2002; Ford & Erlinger, 2004; Gelenberg, 2010; Kessler et al., 2003; Nolen-Hoeksema, 1987). The prevalence of major depressive disorder among women is typically nearly double than that of men (Blazer et al., 1994; Burt & Stein, 2002; Ford & Erlinger, 2004; Nolen-Hoeksema, 1987). Despite gender differences in prevalence of depression, the majority of research on depression in older adulthood has treated older adults as a homogeneous collective and has inadequately considered gender disparities in depression across the life span related to risk (Burt & Stein, 2002; Cyranowski, Frank, Young, & Shear, 2000; Kessler et al., 2005).

Women are at greater risk for depression from youth to older adulthood (Burt & Stein, 2002; Cyranowski et al., 2000; Kessler et al., 2005). A history of depression and being female is associated with impairments in both social and interpersonal functioning (Bromberger et al., 2005; Mojtabai, 2001; Petty, Sachs-Ericsson, & Joiner, 2004), low health-related quality of life (Joffe et al., 2012), and increased risk of metabolic syndrome (Räikkönen, Matthews, &

Kuller, 2007; Goldbacher, Bromberger, & Matthews, 2009; Kinder, Carnethon, Palaniappan, King, & Fortmann, 2004; Räikkönen, Matthews, & Kuller, 2002) and coronary events (D. Jones, Matthews, Bromberger, & Sutton-Tyrrell, 2003; Wagner et al., 2012).

While short-term social risk factors such as life stress (Harkness et al., 2010; Kessler, 2003; Kraaij, Arensman, & Spinhoven, 2002; Slavich, Monroe, & Gotlib, 2011) and long-term risk factors such as biological or psychological factors are associated with depression in older adults (Blazer, 2003; Cyranowski et al., 2000; Hankin & Abramson, 2001), certain risk factors have a greater impact on depression than others for women. Research has consistently shown that the crucial component to understanding the higher prevalence of depression among women compared to men may be due to social risk factors, specifically life stressors, since women have a greater likelihood of experiencing depression due to life stressors (Harkness et al., 2010; Kessler, 2003; Kraaij et al., 2002).

The frequency and severity of life stressors may be greater in older adulthood compared to younger age cohorts, since the normal aging process is associated with increased frequency of life stressors, such as death of a spouse, relocating to a nursing home, or the diagnosis of chronic illnesses. Not surprisingly, the cumulative effects of multiple life stressors have the strongest relationship with depression (Nolen-Hoeksema & Ahrens, 2002), which can place older adults at greater risk than their younger counterparts. To demonstrate the need for gender-specific mental health services for older women and guide services delivery, this article uses a risk and resilience perspective (Rutter, 1985; Saleebey, 1996) to examine how women's unique experiences influence depression and mental health needs later in life and identifies ways to improve the current system by moving from a gender-neutral model to one that emphasizes women's experiences.

Method

This is a selective rather than a systematic review of data on life stressors that affect older adults, as we only included life stressors defined by Gitterman (2011) as difficult life transitions and traumatic life events—both key risk factors for depression for men and women (Dalgard et al., 2006; Kendler, Thornton, & Prescott, 2001; Maciejewski, Prigerson, & Mazure, 2001). We searched MEDLINE and PsycINFO (2000–January 2015) for support for the association between life stressors and depressive disorders in older women. We combined depressive disorders MeSH terms with the different MeSH terms of life stressors and gender. We included pertinent articles to identify life stressors contributing to the excess rates of depressive disorders in older women compared to older men. Reference lists of the articles selected were searched for additional relevant studies. Furthermore, to obtain specific information, for some of the general life stressors categories (i.e., caregiving) we also used specific terms as a search term.

Results

Declining health and disability

Throughout the life span, older age is associated with increased physical illnesses (Angevaren, Aufdemkampe, Verhaar, Aleman, & Vanhees, 2008; Keyes, 2005; Mortazavi et

al., 2012). Older adults have an increased risk for multiple chronic physical conditions compared to younger populations (Angevaren et al., 2008; Keyes, 2005; Mortazavi et al., 2012). Approximately 80% of older adults aged 65+ years have one chronic physical condition such as heart disease, stroke, cancer, cardiovascular, and diabetes (Centers for Disease Control and Prevention, 2010; Rutledge et al., 2009). Chronic physical conditions are related to depression for both men and women (Carney & Freedland, 2003; Li, Ford, Strine, & Mokdad, 2008; Park et al., 2007). Studies suggest that depression and physical health conditions and disability are more prevalent among older women compared to older men for diabetes (Blazer, Moody-Ayers, Craft-Morgan, & Burchett, 2002; Egede, Nietert, & Zheng, 2005; Egede, Zheng, & Simpson, 2002), cardiovascular disease (Rutledge et al., 2009; Shah et al., 2014), and obesity (Becker, Margraf, Turke, Soeder, & Neumer, 2001; Simon et al., 2008).

Similarly, family members' health status is also at an increased likelihood to change as they age. While the change in the health of a family member is a life stress that could have a negative impact on a person's health, this life stress can have a kindling effect and result in an older woman becoming a family caregiver.

Caregiving

Caregiving for a person with a physical health condition or dementia is a major risk factor for depression (Pinquart & Sörensen, 2003; Vitaliano, Zhang, & Scanlan, 2003; Waite, Bebbington, Skelton-Robinson, & Orrell, 2004). Nearly half of caregivers have depressive symptoms, and nearly 33% have clinically significant depression (Waite et al., 2004). More recent research suggests that 8.9% of the caregivers meet the criteria for current major depressive episodes (Torres et al., 2015).

The link between caregiving and depression has been consistently shown (Pinquart & Sörensen, 2003; Torres, et al., 2015; Vitaliano et al., 2003; Waite et al., 2004). This is of particular importance for older women, since they are more likely to be caregivers than older men (National Alliance for Caregiving and AARP Public Policy Institute, 2015). The majority of caregivers in the United States are women (60%). Further, 19% of caregivers are adults aged 65 years and older (National Alliance for Caregiving and AARP Public Policy Institute, 2015).

Experiences of maltreatment

Experiencing abuse is a life stressor at any age; however, the prevalence of abuse experienced by older women is alarming. Abuse in older adulthood is when an older adult is physically, sexually, and psychologically harmed or put at risk of harm (Acierno et al., 2010). Studies suggest that the prevalence estimates of abuse in later life range from 1.4% to 10% (Acierno et al., 2010; Biggs, Manthorpe, Tinker, Doyle, & Erens, 2009; Laumann, Leitsch, & Waite, 2008). However, for older women research has suggested that between 47% and 48% of community-dwelling women report abuse after 55 years of age or older (Fisher & Regan, 2006; Fisher, Zink, & Regan, 2011). Psychological, emotional, sexual, control, threat, and/or physical abuse is associated with higher levels of depression in

women aged 55 years and older (Acierno et al., 2002; Bechtle Higgins & Follette, 2002; Fisher & Regan, 2006; Fisher et al., 2011).

Change in living condition/residence

In the United States, approximately 5% of older adults live in nursing homes (Johnson & Wiener, 2006), and it is estimated that by 2030, 10% of older adults will live in nursing homes (Feder, Komisar, & Niefeld, 2000; Sahyoun, Pratt, Lentzner, Dey, & Robinson, 2001). Depression is the most common mental illness experienced by older adults in nursing homes (Blazer, 2003). Older women are at particular risk of depression in nursing homes, since female gender is a main risk factor for experiencing depression in nursing homes (Djernes, 2006; A. Jones, 2002).

Discussion

Depression is a critical issue for older women that must be addressed. While women have higher rates of depression throughout the life span (Burt & Stein, 2002; Ford & Erlinger, 2004; Gelenberg, 2010; Kessler et al., 2003), the research has consistently shown that the fundamental component to understanding the higher prevalence of depression among women compared to men may be due to social risk factors (Harkness et al., 2010; Kessler, 2003; Kraaij et al., 2002). A gender-specific approach within our mental health system that addresses women's unique response to life stressors may address gender disparities in depression across the life span. However, research focusing on services delivery for the aging population has viewed older adults as a homogeneous group and has inadequately considered gender disparities in depression across the life span related to risk (Burt & Stein, 2002; Cyranowski et al., 2000; Kessler et al., 2005). As a result, there remains a gap in knowledge on gender-based approaches to mental health service delivery. Limited research in this area suggests the need for conceptualizing an innovative gender-specific approach to the organization of behavioral health systems and delivery of services to optimize effectiveness of mental health services for older women.

Recommendations

Integration of mental health services in nursing homes—National reports have noted the high importance of addressing the systematic barriers to behavioral health services and have called for the transformation of the current behavioral health care delivery system to integrate services to address barriers and promote optimal treatment outcomes (Hamblin, Verdier, & Au, 2011; President's New Freedom Commission on Mental Health, 2003). Based on the review of life stressors that affect older women, we propose the redesign of the system to include the integration of aging services and mental health services for the targeted population to address gender-based disparities in depression. Specifically, while older women are at particular risk of developing depression in nursing homes (Djernes, 2006; A. Jones, 2002), the colocation of these mental health services within nursing homes may increase access and engagement in mental health services, increase communication between cross-system providers, and reduce the stigma of receiving mental health services.

When colocation is not possible due to limitations in the current system, cross-systems coordination is a viable alternative. A key factor in identifying older women in need of behavioral health services is the establishment of an identification of behavioral health problems process coupled with a referral process within nursing homes. Overall, cross-systems coordination may be a successful health-improvement strategy to link older women to mental health services. Utilizing a coordinated model in designing and delivering aging and behavioral health care may lead to early detection of behavioral health disorders and increased utilization of necessary services, all of which can promote optimal health outcomes for older adults.

Develop new screening and assessment tools—Research has focused on reducing the symptoms of depression for the general aging population; however, there are substantial limitations to the symptom-based approach, due to gender-specific differences in current trait-based tools designed to assess particular diagnostic criteria. Since the fifth version of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V) (American Psychiatric Association, 2013) was recently released, the current trait-based depression screening tools will soon be outdated. Three noteworthy changes have happened in the DSM-V regarding major depressive disorder. First, major depressive disorder diagnoses cannot be established if depressive symptoms are due to a physical illness (American Psychiatric Association, 2013). Second, dysthymia is not a diagnosis in the DSM-V; rather, dysthymia has been supplanted by persistent depressive disorder. Persistent depressive disorder is a new diagnosis characterized by a combining chronic major depressive disorder and dysthymic disorder. Third, “bereavement exclusion” has been removed from the major depressive disorder diagnosis. This exclusion was in effect if a person had major depressive symptoms within the first 2 months after the death of a loved one. This change to the DSM-V encourages professionals to use their clinical judgment as to whether a patient with symptoms of major depressive disorder and who is also experiencing grief should be diagnosed with depression.

Characterizing depression using the symptom-based approach ignores examining the foundational causes of depression in a person’s development and the risk factors they have been exposed to in their life span. Human behavior is the result of interactions between individuals and their environment (Corcoran & Walsh, 2006). Therefore, to move away from the limited symptoms-based approach to depression, there is a need to develop screening tools that do not only focus on depression symptoms; rather, these tools should focus on the underlying causes of depression. Known life stressors that are risk factors for depression need to be assessed (i.e., declining health and disability, caregiving, experiences of maltreatment, and change in living condition/residence). Evaluating life stress in older adulthood and its relationship to illnesses may be useful to predict depression in older women and assist in engaging them in treatment.

Validate existing measures across gender—Common depression definitions used in existing screening and assessment tools based on the DSM-V (American Psychiatric Association, 2013) don’t take into consideration gender differences. Symptoms of depression in older adults may vary and therefore not meet the criteria in the DSM-V, since

the presentation of depression changes throughout the life span (Blazer, 2003; Butters et al., 2004; Christensen et al., 1999; Gallo, Anthony, & Muthén, 1994; Parker, 2000). Research suggests that older adults may not present the standard symptoms of depression as defined by the DSM-V, such as dysphoria, feelings of worthlessness and/or guilt (Gallo et al., 1994), sleep problems, fatigue, psychomotor impairment, loss of interest in life, feeling hopeless (Christensen et al., 1999), slower cognitive processing, and executive function (i.e., working memory, reasoning, task flexibility, and problem solving) (Butters et al., 2004).

Gender-specific differences in the presentation of depression suggest that depressed older women have more appetite problems compared to older men (Kockler & Heun, 2002). Older adults, predominantly women, also may present depression as vegetative symptoms and cognitive dysfunction (Boswell & Stoudemire, 1996). More current research with the general population ($N = 9,282$) using data from the National Comorbidity Survey Replication (mean age of 45.2) suggests that women have greater rates of stress, irritability, sleep problems, and loss of interest in things they usually enjoyed (i.e., work, hobbies, and personal relationships), while men report more anger and aggression (Martin, Neighbors, & Griffith, 2013).

Current research that examines the psychometric properties of depression screening tools is important for validating measures across gender beyond classical test theory. Measurement variance of a screening or assessment tool exists when groups of individuals understand a construct presented in the tool differently (Vandenberg & Lance, 2000). Measurement invariance assesses if the constructs presented in the tool are uniformly understood by different groups of individuals based on race, gender, or age. Measurement variance across gender can result from differences in participants' socialization and resulting beliefs due to contextual differences, sexism, or gender roles. If measurement variance is not considered, the results may differ based on group and be inaccurate (Bingenheimer, Raudenbush, Leventhal, & Brooks-Gunn, 2005). Measurement invariance has been examined on the most commonly used depression scale for older adults, the Geriatric Depression Scale (Yesavage et al., 1982); however, published research on measurement invariance has been focused on race, not gender (Brown, Woods, & Storandt, 2007; Jang, Small, & Haley, 2001). It is clear, based on the different presentation of depression among older adults by gender (Blazer, 2003; Boswell & Stoudemire, 1996; Gallo et al., 1994; Kockler & Heun, 2002; Martin et al., 2013; Parker, 2000), that current depression screening and assessment tools need to be validated using contemporary psychometric tests to assess for measurement variance by gender. If men and women endorse depression symptomology differently on these tools, gender-specific scoring is necessary to reduce misdiagnosis or underdiagnosis of depression in both men and women.

Shifting the scope of social policies—There is a need for our policies to support looking at the individual more holistically where the interactions between the individual and their environment are considered. This means promoting health through mechanisms in which policies consider the contextual factors such as gender and life stressors associated with the development of depression. Medicare can play an important role in moving the health care system toward care that focuses on the whole person, in which gender-based differences in the causes of depression are considered. Medicare is the largest single

purchaser of health care services in the United States (Centers for Medicare and Medicaid Services, 2005), and therefore, changes to Medicare can result in nationwide changes to the health care system.

To move the health care system away from the medical model, which focuses on physical and biological aspects of disease, toward a more holistic approach that considers people in their environment, the following objectives must be adopted by the Centers for Medicare and Medicaid Services: (a) develop targeted goals that focus on increasing the quality of mental health care through promoting the examination of the contextual factors related to depression for older adults; and (b) encourage mental health providers involvement in developing older-adult behavioral health accreditation standards for aging services settings. The accreditation standards should maintain a focus on an integrated approach to care that considers the social risk factors of depression and the risk factors that older adults have been exposed to in their life span.

Conclusion

In conclusion, gender-based differences in experiences with depression across the life span place older women at greater risk, and the mental health care system is not prepared to meet the unique needs of older women. To meet the needs of older women and address gender disparities in depression across the life span, the redesign of the current system should consider the impact life stressors have on the development of depression in women throughout the life span.

This article suggests new ways of addressing disparities. By transforming mental health services to address gender disparities, the mental health system can address social risk factors for depression, the higher lifetime and 1-year prevalence rates of major depressive disorder compared to men, and prevent or delay the associated physical health comorbidities and low health-related quality of life.

References

- Acierio R, Brady K, Gray M, Kilpatrick D, Resnick H, Best C. Psychopathology following interpersonal violence: A comparison of risk factors in older and younger adults. *Journal of Clinical Geropsychology*. 2002; 8(1):13–23. DOI: 10.1023/A:1013041907018
- Acierio R, Hernández MA, Amstadter AB, Resnick HS, Steve K, Muzzy W, Kilpatrick DG. Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: The National Elder Mistreatment Study. *American Journal of Public Health*. 2010; 100(2):292–297. DOI: 10.2105/AJPH.2009.163089 [PubMed: 20019303]
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th. Washington, DC: Author; 2013.
- Angevaren M, Aufdemkampe G, Verhaar H, Aleman A, Vanhees L. Physical activity and enhanced fitness improve cognitive function in older people without known cognitive impairment, a Cochrane Systematic Review. *Parkinsonism & Related Disorders*. 2008; 14:S44.doi: 10.1016/S1353-8020(08)70231-1
- Bechtle Higgins A, Follette V. Frequency and impact of interpersonal trauma in older women. *Journal of Clinical Geropsychology*. 2002; 8:215–226. DOI: 10.1023/A:1015948328291

- Becker E, Margraf J, Turke V, Soeder U, Neumer S. Obesity and mental illness in a representative sample of young women. *International Journal of Obesity and Related Metabolic Disorders*. 2001; 25(Suppl 1):S5–9. DOI: 10.1038/sj.ijo.0801688 [PubMed: 11466578]
- Biggs S, Manthorpe J, Tinker A, Doyle M, Erens B. Mistreatment of older people in the United Kingdom: Findings from the first National Prevalence Study. *Journal of Elder Abuse & Neglect*. 2009; 21:1–14. DOI: 10.1080/08946560802571870 [PubMed: 19197619]
- Bingenheimer JB, Raudenbush SW, Leventhal T, Brooks-Gunn J. Measurement equivalence and differential item functioning in family psychology. *Journal of Family Psychology*. 2005; 19:441–455. DOI: 10.1037/0893-3200.19.3.441 [PubMed: 16221024]
- Blazer D. Depression in late life: Review and commentary. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*. 2003; 58(3):M249–265. DOI: 10.1093/gerona/58.3.M249
- Blazer D, Kessler R, McGonagle K, Swartz M. The prevalence and distribution of major depressive disorder in a national community sample: The National Comorbidity Survey. *American Journal of Psychiatry*. 1994; 151(7):979–986. DOI: 10.1176/ajp.151.7.979 [PubMed: 8010383]
- Blazer D, Moody-Ayers S, Craft-Morgan J, Burchett B. Depression in diabetes and obesity: Racial/ethnic/gender issues in older adults. *Journal of Psychosomatic Research*. 2002; 53(4):913–916. DOI: 10.1016/S0022-3999(02)00314-8 [PubMed: 12377303]
- Boswell E, Stoudemire A. Major depression in the primary care setting. *The American Journal of Medicine*. 1996; 101(6):3S–9S. DOI: 10.1016/S0002-9343(96)00392-0
- Bromberger J, Kravitz H, Wei H, Brown C, Youk A, Cordal A, Matthews K. History of depression and women's current health and functioning during midlife. *General Hospital Psychiatry*. 2005; 27(3):200–208. DOI: 10.1016/j.genhosppsych.2005.01.007 [PubMed: 15882767]
- Brown P, Woods C, Storandt M. Model stability of the 15-item Geriatric Depression Scale across cognitive impairment and severe depression. *Psychology and Aging*. 2007; 22(2):372–379. DOI: 10.1037/0882-7974.22.2.372 [PubMed: 17563192]
- Burt S, Stein K. Epidemiology of depression throughout the female life cycle. *The Journal of Clinical Psychiatry*. 2002; 63(7):9–15.
- Butters M, Whyte E, Nebes R, Begley A, Dew M, Mulsant B, Becker J. The nature and determinants of neuropsychological functioning in late-life depression. *Archives of General Psychiatry*. 2004; 61:587–595. DOI: 10.1001/archpsyc.61.6.587 [PubMed: 15184238]
- Carney R, Freedland K. Depression, mortality, and medical morbidity in patients with coronary heart disease. *Biological Psychiatry*. 2003; 54(3):241–247. DOI: 10.1016/S0006-3223(03)00111-2 [PubMed: 12893100]
- Centers for Disease Control and Prevention. Injury prevention and control: Data & statistics (WISQARS). 2010. Retrieved from www.cdc.gov/injury/wisqars/index.html
- Centers for Medicare and Medicaid Services. Medicare enrollment—all beneficiaries: As of July 2003. 2005. Retrieved from www.cms.hhs.gov/statistics/enrollment/st03all.asp
- Christensen H, Jorm A, Mackinnon A, Korten A, Jacomb P, Henderson A, Rodgers B. Age differences in depression and anxiety symptoms: A structural equation modelling analysis of data from a general population sample. *Psychological Medicine*. 1999; 29:325–339. DOI: 10.1017/S0033291798008150 [PubMed: 10218924]
- Corcoran, J., Walsh, J. *Clinical assessment and diagnosis in social work practice*. New York, NY: Oxford University Press; 2006.
- Cyranowski J, Frank E, Young E, Shear K. Adolescent onset of the gender difference in lifetime rates of major depression. *Archives of General Psychiatry*. 2000; 57(1):21–27. DOI: 10.1001/archpsyc.57.1.21 [PubMed: 10632229]
- Dalgard O, Dowrick C, Lehtinen V, Vázquez-Barquero J, Casey P, Wilkinson G, Dunn G, ODIN Group. Negative life events, social support and gender difference in depression: A multinational community survey with data from the ODIN study. *Social Psychiatry and Psychiatric Epidemiology*. 2006; 41(6):444–451. DOI: 10.1007/s00127-006-0051-5 [PubMed: 16572275]
- Djernes J. Prevalence and predictors of depression in populations of elderly: A review. *Acta Psychiatrica Scandinavica*. 2006; 113(5):372–387. DOI: 10.1111/j.1600-0447.2006.00770.x [PubMed: 16603029]

- Egede L, Nietert P, Zheng D. Depression and all-cause and coronary heart disease mortality among adults with and without diabetes. *Diabetes Care*. 2005; 28(6):1339–1345. DOI: 10.2337/diacare.28.6.1339 [PubMed: 15920049]
- Egede L, Zheng D, Simpson K. Comorbid depression is associated with increased healthcare use and expenditures in individuals with diabetes. *Diabetes Care*. 2002; 25(3):464–470. DOI: 10.2337/diacare.25.3.464 [PubMed: 11874931]
- Feder J, Komisar H, Niefeld M. Long-term care in the United States: An overview. *Health Affairs*. 2000; 19(3):40–56. DOI: 10.1377/hlthaff.19.3.40 [PubMed: 10812780]
- Fisher B, Regan S. The extent and frequency of abuse in the lives of older women and their relationship with health outcomes. *The Gerontologist*. 2006; 46(2):200–209. DOI: 10.1093/geront/46.2.200 [PubMed: 16581884]
- Fisher B, Zink T, Regan S. Abuses against older women: Prevalence and health effects. *Journal of Interpersonal Violence*. 2011; 26(2):254–268. DOI: 10.1177/0886260510362877 [PubMed: 20457844]
- Ford D, Erlinger T. Depression and C-reactive protein in US adults: Data from the third National Health and Nutrition Survey. *Archives of Internal Medicine*. 2004; 164:1010–1014. DOI: 10.1001/archinte.164.9.1010 [PubMed: 15136311]
- Gallo J, Anthony J, Muthén B. Age differences in the symptoms of depression: A latent trait analysis. *Journal of Gerontology*. 1994; 49(6):P251–64. DOI: 10.1093/geronj/49.6.P251 [PubMed: 7963280]
- Gelenberg A. The prevalence and impact of depression. *The Journal of Clinical Psychiatry*. 2010; 71(3):e06.doi: 10.4088/JCP.8001tx17c
- Gitterman, A. Advances in the life model of social work practice. In: Turner, FJ., editor. *Social work treatment: Interlocking theoretical perspectives*. 5th. New York, NY: Oxford University Press; 2011. p. 279-292.
- Goldbacher E, Bromberger J, Matthews K. Lifetime history of major depression predicts the development of the metabolic syndrome in middle-aged women. *Psychosomatic Medicine*. 2009; 71(3):266–272. DOI: 10.1097/PSY.0b013e318197a4d5 [PubMed: 19188528]
- Hamblin, A., Verdier, J., Au, M. State options for integrating physical and behavioral health care. 2011. Retrieved from www.chcs.org/media/ICRC_BH_Brief_Final.pdf
- Hankin B, Abramson L. Development of gender differences in depression: An elaborated cognitive vulnerability-transactional stress theory. *Psychological Bulletin*. 2001; 127:773–796. DOI: 10.1037/0033-2909.127.6.773 [PubMed: 11726071]
- Harkness K, Alavi N, Monroe S, Slavich G, Gotlib I, Bagby R. Gender differences in life events prior to onset of major depressive disorder: The moderating effect of age. *Journal of Abnormal Psychology*. 2010; 119(4):791–803. DOI: 10.1037/a0020629 [PubMed: 20853920]
- Jang Y, Small B, Haley W. Cross-cultural comparability of the Geriatric Depression Scale: Comparison between older Koreans and older Americans. *Aging & Mental Health*. 2001; 5(1):31–37. DOI: 10.1080/13607860020020618 [PubMed: 11513010]
- Joffe H, Chang Y, Dhaliwal S, Hess R, Thurston R, Gold E, Bromberger J. Lifetime history of depression and anxiety disorders as a predictor of quality of life in midlife women in the absence of current illness episodes. *Archives of General Psychiatry*. 2012; 69(5):484–492. DOI: 10.1001/archgenpsychiatry.2011.1578 [PubMed: 22566580]
- Johnson, RW., Wiener, J. A profile of frail older Americans and their caregivers. Washington, DC: The Urban Institute; 2006. The Retirement Project occasional paper Retrieved from <http://www.urban.org/url.cfm?ID=311284>
- Jones A. The National Nursing Home Survey: 1999 summary. *Vital Health Statistics*. 2002; 13(152):1–116.
- Jones D, Matthews KA, Bromberger JT, Sutton-Tyrrell K. Lifetime history of depression and carotid atherosclerosis in middle-aged women. *Archives of General Psychiatry*. 2003; 60(2):153–160. DOI: 10.1001/archpsyc.60.2.153 [PubMed: 12578432]
- Kendler K, Thornton L, Prescott C. Gender differences in the rates of exposure to stressful life events and sensitivity to their depressogenic effects. *American Journal of Psychiatry*. 2001; 158(4):587–593. DOI: 10.1176/appi.ajp.158.4.587 [PubMed: 11282693]

- Kessler R. Epidemiology of women and depression. *Journal of Affective Disorders*. 2003; 74(1):5–13. DOI: 10.1016/S0165-0327(02)00426-3 [PubMed: 12646294]
- Kessler R, Berglund P, Demler O, Jin R, Koretz D, Merikangas K, Wang P. The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association*. 2003; 289(23):3095–3105. DOI: 10.1001/jama.289.23.3095 [PubMed: 12813115]
- Kessler R, Berglund P, Demler O, Jin R, Merikangas K, Walters E. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62(6):593–602. DOI: 10.1001/archpsyc.62.6.593 [PubMed: 15939837]
- Keyes C. Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology*. 2005; 73(3):539–548. DOI: 10.1037/0022-006X.73.3.539 [PubMed: 15982151]
- Kinder L, Carnethon M, Palaniappan L, King A, Fortmann S. Depression and the metabolic syndrome in young adults: Findings from the third National Health and Nutrition Examination Survey. *Psychosomatic Medicine*. 2004; 66(3):316–322. DOI: 10.1097/01.psy.0000124755.91880.f4 [PubMed: 15184689]
- Kockler M, Heun R. Gender differences of depressive symptoms in depressed and nondepressed elderly persons. *International Journal of Geriatric Psychiatry*. 2002; 17(1):65–72. DOI: 10.1002/(ISSN)1099-1166 [PubMed: 11802233]
- Kraaij V, Arensman E, Spinhoven P. Negative life events and depression in elderly persons: A meta-analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. 2002; 57(1):P87–P94. DOI: 10.1093/geronb/57.1.P87
- Laumann EO, Leitsch SA, Waite LJ. Elder mistreatment in the United States: Prevalence estimates from a nationally representative study. *Journal of Gerontology*. 2008; 63:S248–S254. DOI: 10.1093/geronb/63.4.S248
- Li C, Ford ES, Strine TW, Mokdad AH. Prevalence of depression among U.S. adults with diabetes: Findings from the 2006 Behavioral Risk Factor Surveillance System. *Diabetes Care*. 2008; 31(1):105–107. DOI: 10.2337/dc07-1154 [PubMed: 17934145]
- Maciejewski P, Prigerson H, Mazure C. Sex differences in event-related risk for major depression. *Psychological Medicine*. 2001; 31(4):593–604. DOI: 10.1017/S0033291701003877 [PubMed: 11352362]
- Martin L, Neighbors H, Griffith D. The experience of symptoms of depression in men vs. women: Analysis of the National Comorbidity Survey Replication. *Journal of the American Medical Association*. 2013; doi: 10.1001/jamapsychiatry.2013.1985
- Mojtabai R. Residual symptoms and impairment in major depression in the community. *American Journal of Psychiatry*. 2001; 158(10):1645–1651. DOI: 10.1176/appi.ajp.158.10.1645 [PubMed: 11578997]
- Mortazavi S, Mohammad K, Ardebili H, Beni R, Mahmoodi M, Keshteli A. Mental disorder prevention and physical activity in Iranian elderly. *International Journal of Preventive Medicine*. 2012; 3(1):S64–S72. [PubMed: 22826772]
- National Alliance for Caregiving and AARP Public Policy Institute. Caregiving in the US. 2015. Retrieved from www.caregiving.org/wp-content/uploads/2015/05/2015_CaregivingintheUS_Final-Report-June-4_WEB.pdf
- Nolen-Hoeksema S. Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin*. 1987; 101:259–282. DOI: 10.1037/0033-2909.101.2.259 [PubMed: 3562707]
- Nolen-Hoeksema S, Ahrens C. Age differences and similarities in the correlates of depressive symptoms. *Psychology and Aging*. 2002; 17(1):116–124. DOI: 10.1037/0882-7974.17.1.116 [PubMed: 11931280]
- Park J, Lee S, Lee T, Lee D, Jhoo J, Youn J, Kim K. Depression in vascular dementia is quantitatively and qualitatively different from depression in Alzheimer's disease. *Dementia and Geriatric Cognitive Disorders*. 2007; 23(2):67–73. DOI: 10.1159/000097039 [PubMed: 17114882]
- Parker G. Classifying depression: Should paradigms lost be regained? *American Journal of Psychiatry*. 2000; 157(8):1195–1203. DOI: 10.1176/appi.ajp.157.8.1195 [PubMed: 10910777]

- Petty S, Sachs-Ericsson N, Joiner T. Interpersonal functioning deficits: Temporary or stable characteristics of depressed individuals? *Journal of Affective Disorders*. 2004; 81(2):115–122. DOI: 10.1016/S0165-0327(03)00158-7 [PubMed: 15306136]
- Pinquart M, Sörensen S. Differences between caregivers and noncaregivers in psychological health and physical health: A meta-analysis. *Psychology and Aging*. 2003; 18:250–267. DOI: 10.1037/0882-7974.18.2.250 [PubMed: 12825775]
- President's New Freedom Commission on Mental Health. The President's New Freedom Commission on Mental Health: Transforming the vision. 2003. Retrieved from <https://store.samhsa.gov/shin/content/SMA03-3831/SMA03-3831.pdf>
- Räikkönen K, Matthews K, Kuller L. The relationship between psychological risk attributes and the metabolic syndrome in healthy women: Antecedent or consequence? *Metabolism*. 2002; 51(12): 1573–1577. DOI: 10.1053/meta.2002.36301 [PubMed: 12489070]
- Räikkönen K, Matthews K, Kuller L. Depressive symptoms and stressful life events predict metabolic syndrome among middle-aged women: A comparison of World Health Organization, Adult Treatment Panel III, and International Diabetes Foundation definitions. *Diabetes Care*. 2007; 30(4):872–877. DOI: 10.2337/dc06-1857 [PubMed: 17392548]
- Rutledge T, Vaccarino V, Johnson BD, Olson MB, Cornell CE, Sheps DS, Shaw LJ. Depression and cardiovascular healthcare costs among women with suspected myocardial ischemia: Prospective results from the WISE (Women's Ischemia Syndrome Evaluation) study. *Journal of the American College of Cardiology*. 2009; 53(2):176–183. DOI: 10.1016/j.jacc.2008.09.032 [PubMed: 19130986]
- Rutter M. Resilience in the face of adversity. Protective factors and resistance to psychiatric disorder. *The British Journal of Psychiatry*. 1985; 147:598–611. DOI: 10.1192/bjp.147.6.598 [PubMed: 3830321]
- Sahyoun N, Pratt L, Lentzner H, Dey A, Robinson K. The changing profile of nursing home residents: 1985–1997. *Aging Trends*. 2001; 4:1–8.
- Saleebey D. The strengths perspective in social work practice: Extensions and cautions. *Social Work*. 1996; 41(3):296–306. [PubMed: 8936085]
- Shah A, Ghasemzadeh N, Zaragoza-Macias E, Patel R, Eapen D, Neeland I, Vaccarino V. Sex and age differences in the association of depression with obstructive coronary artery disease and adverse cardiovascular events. *Journal of the American Heart Association*. 2014; 3:e000741–e000741. DOI: 10.1161/JAHA.113.000741 [PubMed: 24943475]
- Simon G, Ludman E, Linde J, Operskalski B, Ichikawa L, Rohde P, Jeffery RW. Association between obesity and depression in middle-aged women. *General Hospital Psychiatry*. 2008; 30:32–39. DOI: 10.1016/j.genhosppsych.2007.09.001 [PubMed: 18164938]
- Slavich G, Monroe S, Gotlib I. Early parental loss and depression history: Associations with recent life stress in major depressive disorder. *Journal of Psychiatric Research*. 2011; 45(9):1146–1152. DOI: 10.1016/j.jpsychires.2011.03.004 [PubMed: 21470621]
- Torres Á, Blanco B, Vázquez FL, Díaz O, Otero P, Hermida E. Prevalence of major depressive episodes in non-professional caregivers. *Psychiatry Research*. 2015; 226(1):333–339. DOI: 10.1016/j.psychres.2014.12.066 [PubMed: 25667119]
- Vandenberg R, Lance C. A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*. 2000; 3:4–70. DOI: 10.1177/109442810031002
- Vitaliano P, Zhang J, Scanlan J. Is caregiving hazardous to one's physical health? A meta-analysis. *Psychological Bulletin*. 2003; 129(6):946–972. DOI: 10.1037/0033-2909.129.6.946 [PubMed: 14599289]
- Wagner J, Tennen H, Finan P, White W, Burg M, Ghuman N. Lifetime history of depression, type 2 diabetes, and endothelial reactivity to acute stress in postmenopausal women. *International Journal of Behavioral Medicine*. 2012; 19(4):503–511. DOI: 10.1007/s12529-011-9190-5 [PubMed: 21964983]
- Waite A, Bebbington P, Skelton-Robinson M, Orrell M. Social factors and depression in carers of people with dementia. *International Journal of Geriatric Psychiatry*. 2004; 19(6):582–587. DOI: 10.1002/gps.1136 [PubMed: 15211540]

Yesavage J, Brink T, Rose T, Lum O, Huang V, Adey M, Leirer VO. Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*. 1982; 17(1):37–49. DOI: 10.1016/0022-3956(82)90033-4 [PubMed: 7183759]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript