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MENTAL HEALTH LITERACY AND WOMEN:

A SYSTEMATIC REVIEW

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Mental health issues continue to be a global health concern ("Mental Health," 2019)(World Health Organization (WHO), 2019a). Gender differences are shown in the common mental disorders such as depression, anxiety and somatic complaints. Women predominate as mental health issues affect approximately one in three people in the community making mental health a serious public health issue. Unipolar depression is predicted to be the second leading cause of global disability burden by 2020. Depression is twice as common in women compared to men. Depression is not only the most common women's mental health problem but has also been reported to be more persistent in women than men ("Gender and women's mental health," 2019) (WHO, 2019b). Mental disorders can affect women and men differently. Some disorders are more common in women such as depression and anxiety. There are also certain types of depression that are unique to women. Some women may experience symptoms of mental disorders at times of hormone change, such as perinatal depression, premenstrual dysphoric disorder, and perimenopause-related depression (National Institute of Mental Health, 2019). ("Women and Mental Health," 2019).

The literature for general issues related to women's health has been expanding in the past decade with valuable recent contributions (Adachi, Sawa, Ueda, & Shimai, 2018; Bennett, Gibson, Rohan, Howland, & Rankin, 2019; Gerber, King, Iverson, Pineles, & Haskell, 2018; Hom, Stanley, Spencer-Thomas, & Joiner, 2018; Kucharska, 2018; V. Lopez, K. Sanchez, M. O. Killian, & B. H. Eghaneyan, 2018; Miller & Ghadiali, 2018; Mills, Hill, & Johnson, 2018; Rozario & Masho, 2018). This is particularly true for vulnerable women (i.e. pregnant women, women in prison, older women and women from disadvantaged ethnic groups) (Albaugh, Friedman, Yang, & Rosenthal, 2018; Bartlett & Hollins, 2018; Burnette, Liddell, Roh, Lee, & Yun Lee, 2018; Da Costa, Zelkowitz, Nguyen, & Deville-Stoetzel, 2018; Dossett et al., 2018; Katz, Crean, Cerulli, & Poleshuck, 2018; Stone & Xiao, 2018; Tran et al., 2018; ZareMobini, Kazemi, & Farajzadegan, 2018). Women from rural populations may need additional resources to address mental health needs (S. Hernandez, Han, Ajanel, Jones, & Edwardson, 2018; Moreau et al., 2018; Qiu, Caine, Hou, Cerulli, & Wittink, 2018; Snell-Rood, Feltner, & Schoenberg, 2019; Soyannwo, Adebayo, & Sigbeku, 2018). Mental health concerns for women experiencing Intimate Partner Violence have also been well documented (Barcelona de Mendoza, Harville, Savage, & Giarratano, 2018; Bonomi, Nichols, Kammes, & Green, 2018; Coston, 2019; Gibbs, Jewkes, Willan, & Washington, 2018; Honda et al., 2018; Jiwatram-Negron, Michalopoulos, & El-Bassel, 2018; Lutwak, 2018; Panyayong, Tantirangsee, Bogoian, & Thai National Mental Health Survey, 2018; Tiwari, Cheung, & Hui, 2018; Willie, Kershaw, & Sullivan, 2018; Wood, Voth Schrag, & Busch-Armendariz, 2018).

Table 1. Summary of Literature on General Women's Health Issues

AUTHOR	TOPIC	YEAR
Adachi, Sawa, Ueda, & Shimai		2018
Bennett, Gibson, Rohan, Howland, & Rankin	Women's Health	2019
Gerber, King, Iverson, Pineles, & Haskell	Women's Health	2018
Hom, Stanley, Spencer-Thomas, & Joiner	Women's Health	2018
Kucharska	Women's Health	2018
V. Lopez, K. Sanchez, M. O. Killian, & B. H. Eghaneyan	Women's Health	2018
Miller & Ghadiali	Women's Health	2018
Mills, Hill, & Johnson	Women's Health	2018
Rozario & Masho	Women's Health	2018
Albaugh, Friedman, Yang, & Rosenthal	Vulnerable Populations	2018
Bartlett & Hollins	Vulnerable Populations	2018
Burnette, Liddell, Roh, Lee, & Yun Lee	Vulnerable Populations	2018
Da Costa, Zelkowitz, Nguyen, & Deville-Stoetzel	Vulnerable Populations	2018
Dossett et al.	Vulnerable Populations	2018
Katz, Crean, Cerulli, & Poleshuck	Vulnerable Populations	2018
Stone & Xiao	Vulnerable Populations	2018
Tran et al.	Vulnerable Populations	2018
ZareMobini, Kazemi, & Farajzadegan	Vulnerable Populations	2018
S. Hernandez, Han, Ajanel, Jones, & Edwardson	Rural Populations	2018
Moreau et al.	Rural Populations	2018
Qiu, Caine, Hou, Cerulli, & Wittink	Rural Populations	2018
Snell-Rood, Feltner, & Schoenberg	Rural Populations	2018
Soyannwo, Adebayo, & Sigbeku	Rural Populations	2018
Barcelona de Mendoza, Harville, Savage, & Giarratano	Intimate Partner Violence	2018
Bonomi, Nichols, Kammes, & Green	Intimate Partner Violence	2018
Coston	Intimate Partner Violence	2018
Gibbs, Jewkes, Willan, & Washington	Intimate Partner Violence	2018
Honda et al.	Intimate Partner Violence	2018
Jiwatram-Negron, Michalopoulos, & El-Bassel	Intimate Partner Violence	2018
Lutwak	Intimate Partner Violence	2018
Panyayong, Tantirangsee, Bogoian, & Thai National Mental Health Survey	Intimate Partner Violence	2018
Tiwari, Cheung, & Hui	Intimate Partner Violence	2018
Willie, Kershaw, & Sullivan	Intimate Partner Violence	2018
Wood, Voth Schrag, & Busch-Armendariz	Intimate Partner Violence	2018

Additionally, several interventions have shown promise to improve mental health of women, however the overall need remains great (Dianatinasab et al., 2018; Hajmohamadi, Ghalichi, Bakhtari Aghdam, & Matlabi, 2018; Madden et al., 2018; Shooshtari, Abedi, Bahrami, & Samouei, 2018). Mental health literacy may provide some guidance in how we can address the burden of poor mental health.

Mental health literacy (MHL) was introduced in the literature in 1997. Mental health literacy is defined as the "knowledge and beliefs about mental disorders, which aid their recognition, management or prevention" (Jorm et al., 1997, p. 182). Mental health literacy has been well studied within the literature. Mental disorders comprise a broad range of problems, with different symptoms. However, they are generally characterized by some combination of abnormal thoughts, emotions, behavior and relationships with others. Typically, mental health illnesses include conditions such as mood and thought disorders (e.g. anxiety, depression, schizophrenia), intellectual disabilities, and addition disorders (Anthony F. Jorm et al., 1997). Most of these disorders can be successfully treated. Mental health literacy (MHL) has several components, including: 1) the ability to recognize specific disorders, 2)knowledge of treatment of mental illnesses, 3)attitudes that promote recognition and appropriate help-seeking, and 4)first aid skills to support others with mental health problems (Jorm, 2012; WHO, 2019) (A. F. Jorm, 2012; "Mental Disorders," 2019). Recognition, knowledge, and beliefs about mental health literacy can serve as preventive measure and first line of defense for populations globally (Jorm, 2012; Jorm et al., 2006; Jorm et al., 1997). To further understand mental health literacy and women, we conducted a systematic literature review. The authors did not locate any other systematic reviews addressing mental health literacy and women.

METHODS

The current review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta Analyses (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). PubMed was used to identify peer-reviewed literature that included a combination of free-text and thesaurus terms for concepts including "mental health literacy, health literacy and women" combined with a qualitative and quantitative methods filter, respectively. This strategy was adapted for other databases as required. To identify the relevant literature for this review, six electronic databases were searched: PubMed®, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Cochrane Library, PsychINFO, the Educational Resources Information Center (ERIC), and Scopus. A complete list of the database search construction is found in Table 1. Citations were imported into EndNote® data management software, when possible. Duplicate studies were identified and removed.

Key Questions

The key questions we sought to answer in this article are as follows: For studies published regarding mental health literacy with women, what is the evidence regarding:

- how mental health literacy is assessed,
- the demographics of study participants,
- what health outcomes have been measured,
- whether mental health literacy interventions were developed or tested.

A practical screen of the literature where a broad range of potentially useable articles that could be obtained in a timely manner was conducted. Inclusion criteria included: (1) measure of mental health literacy, (2) women population (3), empirically based research methodology, and (4) published between 01/01/2014 to 12/31/2018. The exclusion criteria included: (1) review/discussion papers, (2) case studies, (3) tool development, and (4) oral, financial, and health literacy. The methodological screen (used to assess quality of articles and selection of the best available studies) included empirical methodology to ensure the search was exhaustive and included a review of the reference sections in each of the retrieved articles, a check of relevant articles against an index of retrieved articles, and a hand search of journals with published systematic reviews on mental health literacy. Two reviewers independently assessed all papers against the inclusion criteria, with any disagreement discussed and resolved by a third reviewer. A flow diagram of the article selection process is detailed in Figure 1. Mental health literacy (MHL) measures, characteristics of the target populations, data collection, and data results were extracted by two review authors. Articles were not excluded

based on methodological quality criteria as this review was intended to review all empirical peer-reviewed research in the subject area. No meta-analysis was conducted.

RESULTS

Study Selection

A total of 374 articles met primary inclusion and exclusion criteria (Figure 1). Two hundred and five (205) articles were ultimately excluded as duplications or due to time period of the study. Seven (7) articles were discovered through manual searches. The remaining 61 papers contained 42 exclusions due to not being divided by gender for analysis, measurements and tools development, or they were not inclusive of mental health literacy measures. After the full-text appraisal, 19 articles remained that included mental health literacy measures for women. Key findings were noted for each study including sample size, study setting, population, study topic focus, data collection method, and mental health literacy measures (Table 2).

These 19 final studies were summarize in terms of their study characteristics. These included the country of the study, assessment tools used, demographic factors, and other thematic variables measured.

Figure 1. Flow Diagram Article Selection Process

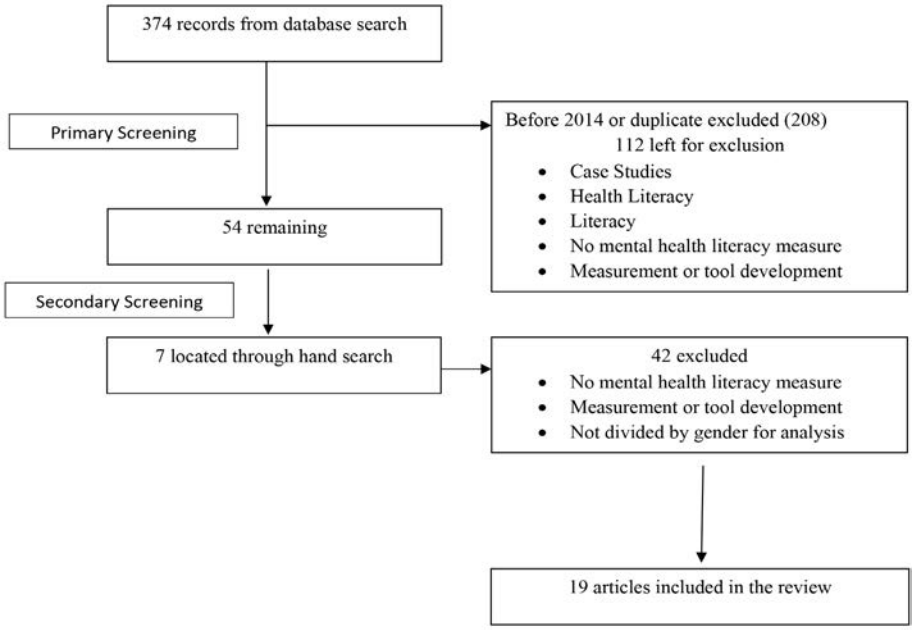

Table 2. Database Search Construction

Search	Search Term Construction	Articles Located
1 PubMed (MEDLINE)	women[MeSH] AND "mental health*"[MeSH] AND literacy[MeSH] Filter: 2014/01/01 to 2018/12/31	87
**Variant search	women[Mesh] AND "mental health*"[MeSH] AND "health literacy*"[MeSH] Filter: 2014/01/01 to 2018/12/31	60
2. CINAHL	women[CINAHL headings] AND "mental health*"[CINAHL headings] AND literacy[CINAHL headings] Filter: 2014/01/01 to 2018/12/31	37
3. Cochrane Library	women[MeSH] AND "mental health*"[MeSH] AND literacy[MeSH] Filter: 2014/01/01 to 2018/12/31	11
4. PsychINFO	"human females*"[PsychINFO thesaurus] AND "mental health literacy*"[PsychINFO thesaurus] Filter: 2014/01/01 to 2018/12/31	6
**Variant search	"psychology of women*"[PsychINFO thesaurus] AND "mental health literacy*"[PsychINFO thesaurus] Filter: 2014/01/01 to 2018/12/31	13
**Variant search	"human females*"[PsychINFO thesaurus] AND "mental health*"[PsychINFO thesaurus] AND "literacy"[PsychINFO thesaurus] Filter: 2014/01/01 to 2018/12/31	32
**Variant search	"psychology of women*"[PsychINFO thesaurus] AND "mental health*"[PsychINFO thesaurus] AND "literacy"[PsychINFO thesaurus] Filter: 2014/01/01 to 2018/12/31	29
5. ERIC	females[ERIC thesaurus] AND "mental health*"[ERIC thesaurus] AND "literacy"[ERIC thesaurus] Filter: 2014/01/01 to 2018/12/31	2
6. Scopus	women[MeSH] AND "mental health literacy*"[MeSH] Filter: 2014/01/01 to 2018/12/31	39
**Variant search	women[MeSH] AND "mental health*"[MeSH] AND literacy[MeSH] Filter: 2014/01/01 to 2018/12/31	58

Table 3. Summary of Mental Health Literacy Studies

ARTICLE #	REFERENCE	ARTICLE TOPIC	SAMPLE AND SETTING	MENTAL HEALTH LITERACY MEASUREMENT	METHODOLOGY	KEY FINDINGS: MHL	ASSOCIATED FACTORS
1	Beks, T. A., et al. (2018). "Counsellor-in-Residence: Evaluation of a Residence-Based Initiative to Promote Student Mental Health." Canadian Journal of Higher Education 48(2): 55-73.	Counselor in Residence Program evaluation in College Setting	Calgary, Canada Men and Women N=354, 64% women	MHL Scale (O'Connor and Casey 2015)	Cross-sectional	Females had higher MHL then males	Other data not divided or analyzed by gender
2	Bohrer, B. K., et al. (2017). "Treatment seeking for eating disorders: Results from a nationally representative study." International Journal of Eating Disorders 50(12): 1341-1349.	Treatment for eating disorders	U.S. subset of Collaborative Psychiatric Epidemiology Surveys: lifetime of ED N=595	World Health Organization (WHO) Composite International Diagnostic Interview (CIDI)	Survey Structural Equation Modeling	Female, employed, married. Sex emerged as a significant predictor of treatment seeking in the full sample; men had a significantly lower probability of seeking treatment	Other factors such as comorbidity, suicidality, income, employment state, supportive family relationships, religious belonging, martial status or discrimination did not support treatment-seeking
3	Buchman-Wildbaum, T., et al. (2018). "Social rejection towards mentally ill people in Hungary between 2001 and 2015: Has there been any change?" Psychiatry Res 267: 73-79.	social stigma and MHL	Hungary n=7605 of subset of data from 2001, 2003, 2007, 2015	survey question	mixed	Mentally ill are among the three most rejected groups in the Hungarian Society	Low familiarity with mental illness, female gender and education below high school level were significant predictors for social distance
4	Choi, Y.-J. (2017). "Effects of a program to improve mental health literacy for married immigrant women in Korea." Arch Psychiatr Nurs 31(4): 394-398.	MH Improvement program for immigrant women	Korea N=63	MHL Inventory by Hong 2008	Matched Case-Control	8 week long program; -mean MHL scores increased by 0.13 in experimental group (statistically significant finding) -Increased MHL can help cope with acculturative stress	used ANCOVA models
5	Choi, Y. J. and G. H. Park (2016). "Associations among acculturation stress, mental health literacy, and mental health of married immigrant women in Korea." International Journal of Mental Health Promotion 18(4): 234-246.	MH of Immigrant women in Korea	Korea N=209	MHL Inventory by Hong 2008	Cross-sectional	MHL significantly related to nationality; -As acculturation stress increased, MHL and MH decreased	Most had HS diploma (86%)

ARTICLE #	REFERENCE	ARTICLE TOPIC	SAMPLE AND SETTING	MENTAL HEALTH LITERACY MEASUREMENT	METHODOLOGY	KEY FINDINGS: MHL	ASSOCIATED FACTORS
6	Fonseca, A., et al. (2017). "Depression literacy and awareness of psychopathological symptoms during the perinatal period." Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families, & Newborns 46(2): 197-208.	Depression Literacy awareness	Portugal N=194	Portuguese Depression Literacy Question	Cross-sectional	Lower education and income associated with poor depression literacy; Prior history of psychiatric problems or treatments higher rate of depression literacy	
7	Gratwick-Sarll, K., et al. (2016). "Poor self-recognition of disordered eating among girls with bulimic-type eating disorders: Cause for concern?" Early Interv Psychiatry 10(4): 316-323.	Bulimic-type eating disorders and MHL	Australia Capital Territory; N=139	Vignettes, ACT School Mental HL Survey	Cross-sectional	Participants who recognized a problem with their own eating were more likely to seek treatment; Majority didn't think they had an eating problem	
8	Guy, S., et al. (2014). "Mental health literacy and postpartum depression: A qualitative description of views of lower income women." Arch Psychiatr Nurs 28(4): 256-262.	MHL and postpartum depression	Texas, USA N=25	Jorm's Qual Framework and Jorm (2000) model	Qualitative	Themes - women recognized behavior changes but feared seeking help; Participants preferred help from OB provider and viewed counseling services by licensed professional positively	
9	Hernandez, M. Y. and K. C. Organista (2015). "Qualitative exploration of an effective depression literacy fotonovela with at risk Latina immigrants." Am J Community Psychol 56(1-2): 79-88.	Footonovelas and depression literature	California N=25	Larlay and Hecht (2010) - CCNHP	Qualitative	Themes- improved MHL because Footonovelas included memorable characters and storylines; Some (14/25) reported increase stigma seeking MHS as a result	Future efforts have to balance knowledge increases with stigma increases
10	Holman, D. (2015). "Exploring the relationship between social class, mental illness stigma and mental health literacy using British national survey data." Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine 19(4): 413-429.	social stigma and MHL	Brittan N=1042	British Social Attitudes survey	Mixed	Women had lower levels of two types of personal stigma with depression and schizophrenia vignettes. Some interaction with gender, having a degree; women with a higher degree had lowest level of stigma. Age and gender showed lower associates for the asthma vignette.	Randomly assigned vignettes with survey questions

Table 3. Summary of Mental Health Literacy Studies (continued)

ARTICLE #	REFERENCE	ARTICLE TOPIC	SAMPLE AND SETTING	MENTAL HEALTH LITERACY MEASUREMENT	METHODOLOGY	KEY FINDINGS: MHL	ASSOCIATED FACTORS
11	Lee, S. and Y. Jang (2016). "Factors Associated with Willingness to Use Mental Health Services in Korean Immigrants." Soc Work Public Health 31(3): 196-203.	Health of Korean Immigrants	Texas, USA N=207, men and women compared	National MH Association survey, "depressive symptoms"	Cross-sectional	More depressive symptoms, less willing to use MH services; -women highly acculturated and individuals who believe depression is a medical condition are more willing to use MH services	Included logistic regression; -Those believe depression is medical condition were nearly 5 times more likely to be willing to use MH services; -As severity of depression worsened, likelihood decreased to use MH services
12	Lopez, S. R., et al. (2018). "Psychosis Literacy Among Latinos With First-Episode Psychosis and Their Caregivers." Psychiatr Serv 69(11): 1153-1159.	Depression and education among Hispanic Women	Texas, USA N=319 female Hispanic enrolled in DESO project 24 month period	Self-reported depression screening tool	Cross-sectional	Higher education and higher stigma of antidepressant use; -More knowledge about depression, less stigma and more likely to engage with someone who was treated for depression	Two thirds less than HS education in sample, Included bivariate correlations and ANCOVA models -94% were Spanish speaking
13	McNair, R. P. and R. Bush (2016). "Mental health help seeking patterns and associations among Australian same sex attracted women, trans and gender diverse people: A survey-based study." BMC Psychiatry 16.	MH Seeking patterns of women by gender identification	Melbourne, Australia N=8 interviews; N=1628 cross-sectional survey	SSAW, author created MH questions and used national tool	Mixed	80% had MH problems in past 12 months; Trans and gender diverse were twice as likely as those identifying as female to have MH problems, lesbians were the least likely	Used chi-square and Logistic Regression; 74% saw General Practitioner for MH in last 12 months; -Common barriers to seeking help was discrimination and lack of LGBTI sensitivity
14	Paulus, D. J., et al. (2015). "Mental health literacy for anxiety disorders: How perceptions of symptom severity might relate to recognition of psychological distress." J Public Ment Health 14(2): 94-106.	MH and University Students	United Kingdom n=146 women (both men and women)	MHLS (O'Connor and Casey 2015)	Cross-sectional	Women had higher distress and lower well-being overall; Women had higher MHL than men	No help seeking differences were reported between men and women
15	Pineda, A. S. (2014). Mental health literacy of Latina women in the United States for their school-aged children, ProQuest Information & Learning. 75.	MHL for Latina Women for their children's MH	Denver, Co and Modesto, CA N=79	Bleck Depression Inventory, Revised Illness perception questionnaire; MH Vignettes	Cross-sectional	Mothers with lower acculturation predicted number of child psychiatric symptoms recognized for internalizing and externalizing vignettes; -PTSD severity didn't moderate relationship between acculturation and MHL	Used multiple regressions; -24% had High School diploma -70% completed survey in Spanish

ARTICLE #	REFERENCE	ARTICLE TOPIC	SAMPLE AND SETTING	MENTAL HEALTH LITERACY MEASUREMENT	METHODOLOGY	KEY FINDINGS: MHL	ASSOCIATED FACTORS
16	Saraf, G., et al. (2018). "What adolescent girls know about mental health: Findings from a mental health literacy survey from an Urban slum setting in India." Indian J Psychol Med 40(5): 433-439.	MHL Knowledge	India 337 adolescent girls	vignettes on depression and self-harm	Vignettes, survey questions, descriptive statistics	Only 8% of the respondents were able to label depression from the first vignette. Suicidality was correctly identified by 63%; but was not seen as needing an urgent intervention. Sigma was main reason for lack of help-seeking	
17	Satyanarayana, V. A., et al. (2016). "Three sides of a triangle: Gender disadvantage, resilience and psychological distress in a sample of adolescent girls from India." International Journal of Culture and Mental Health 9(4): 364-372.	gender disadvantages and mental health	India 425 adolescent girls	Checklist for Assessment of Fender Disadvantage Kessler Psychological Distress Scale Conner Davidson Resilience scale	Cross-sectional	Three items endorsed the most of CAGED were emotional distress, financial difficulties and being criticized Significant relationship between severity of psychological distress based on K-10 scores and all four gender disadvantage domains of CAGED	
18	Spedding, M. F., et al. (2018). "Pregnant women's mental health literacy and perceptions of perinatal mental disorders in the Western Cape, South Africa." Mental Health and Prevention 11: 16-23.	MHL and pregnant women	South Africa N=262	MH vignettes by Sorsdahl and Stein (2010)	Cross-sectional	75% didn't identify vignettes as MH related; Participants supported seeking professional help and close family to help with MH issues.	Used chi-square
19	Swami, V. and V. Knowles (2014). "Mental health literacy of negative body image: Symptom recognition and beliefs about body image in a British community sample." International Journal of Culture and Mental Health 7(2): 199-215.	Body Image and MHL	England n=240 women, n=245 men	Vignettes and Mond et al.	Cross-sectional	Less than 20% correctly identified body image vignettes as MH issue; -women were more likely to recognize symptoms of negative body image -females had higher MHL than males	Used ANOVA, bivariate correlations

The selected 19 articles included 7 studies conducted in the United States (Bohrer, Carroll, Forbush, & Chen, 2017; Guy, Sterling, Walker, & Harrison, 2014; M. Y. Hernandez & Organista, 2015; Lee & Jang, 2016; Veronica Lopez, Katherine Sanchez, Michael O. Killian, & Brittany H. Eghaneyan, 2018; Paulus, Wadsworth, & Hayes-Skelton, 2015; Pineda, 2014). The study settings were geographically diverse with representation across the United States in the Midwest (Bohrer et al., 2017),West Coast (M. Y. Hernandez & Organista, 2015; Pineda, 2014), Northeast (Paulus et al., 2015), and the South (Guy et al., 2014; Lee & Jang, 2016; Veronica Lopez et al., 2018). Discovery included 11 studies that were conducted abroad (Beks, Cairns, Smygwaty, Osorio, & Hill, 2018; Buchman-Wildbaum et al., 2018; Y.-J. Choi, 2016, 2017; Fonseca, Silva, & Canavarro, 2017; Gratwick-Sarll, Bentley, Harrison, & Mond, 2016; McNair & Bush, 2016; Saraf, Chandra, Desai, & Rao, 2018; Satyanarayana, Chandra, Sharma, Sowmya, & Kandavel, 2016; Spedding, Stein, Naledi, & Sorsdahl, 2018) regions of the country. Two studies were centered on urban populations (Paulus et al., 2015; Saraf et al., 2018). Hard to follow, maybe a table.

Socioeconomic factors were included in each study. Participants self-reported their highest levels of education at or below a high school level in five studies (Buchman-Wildbaum et al., 2018; Y. J. Choi & Park, 2016; S. R. Lopez et al., 2018; Spedding et al., 2018), three studies reported college level or below, (Gratwick-Sarll et al., 2016; Paulus et al., 2015; Saraf et al., 2018) while two other studies had participants with a majority of higher-secondary education (Beks et al., 2018; Fonseca et al., 2017). Income levels were reported below the poverty rates in four studies (Guy et al., 2014; M. Y. Hernandez & Organista, 2015; Veronica Lopez et al., 2018; Pineda, 2014) and two studies reported a participant base from in-and-around urban slums (Saraf et al., 2018; Satyanarayana et al., 2016). Three studies reported participants from middle class income levels (Y.-J. Choi, 2017; Y. J. Choi & Park, 2016; McNair & Bush, 2016) and two studies included a majority of participants in the upper middle class (Bohrer et al., 2017; Fonseca et al., 2017) and one study consisted of participants reporting a high socioeconomic status, despite more than 50% of participants reported being unemployed (Spedding et al., 2018).

Study sample size ranged from 25 to 7605 participants. Four studies had a sample size of fewer than one hundred participants (Y.-J. Choi, 2017; Guy et al., 2014; M. Y. Hernandez & Organista, 2015; Pineda, 2014). Eleven studies ranged from 212 to 595 (Beks et al., 2018; Bohrer et al., 2017; Y. J. Choi & Park, 2016; Fonseca et al., 2017; Lee & Jang, 2016; Veronica Lopez et al., 2018; Paulus et al., 2015; Saraf et al., 2018; Satyanarayana et al., 2016; Swami & Knowles, 2014). The largest participant groups were 7605 (Buchman-Wildbaum et al., 2018), 1135 (Gratwick-Sarll et al., 2016), and 1697 (McNair & Bush, 2016) .

Outcomes

Depression Literacy (1-5)

The final 19 articles were categorized in more detail to better highlight variables measured for mental health literacy and status. Five studies analyzed depression literacy. Hernandez et al. (2015) analyzed depression literacy among Latina women born in Mexico and El Salvador. Researchers presented participants with illustrative fotonovelas (a fotonovela is a Spanish-language story illustrated with photographs) to connect with participants and measure depression literacy. Of the full participant numbers (n=25) a majority (64%, n=16) reported having an improved understanding of symptoms through the exposure to the fotonovelas. Some participants (28%, n=7) reported the ability to identify symptoms in self and others.

Holman et al. (2014) used a British national survey and presented participants with two mental health vignettes on depression and schizophrenia and one vignette about asthma to study the connection between social class and metal health stigma. The evaluation of the survey data concluded that of the total participant size (n=1042), the majority of respondents were female (n=544) and a majority, (n=240) reported having achieved A-level or equivalent higher education. Holman et al. determined women with higher levels of education had the lowest levels of mental health stigma and the highest levels of mental health literacy. Furthermore, participants of higher education were able to categorize the depression vignette as a case of mental illness as opposed to normal highs and lows one experiences in life (Holman, 2015).

Lee et al. (2016) investigated the willingness of participants to seek help for mental health based on how

they viewed depression, either as a 'personal weakness' or a medical condition. Of the entire participant based (n=207), over half were women and their willingness to seek mental health services was 2.5 times more likely than male participants (Lee & Jang, 2016) .

The study conducted by Lopez et al. (2018) was unique in that investigators examined health literacy among Latinos with first-episode psychosis (FEP) and their caregivers. Lopez et al. had a total participant of base (n=148) divided between patients (n=79) and caregivers (n=69). Participants were asked to watch a video narrative about a woman with psychosis and were asked to describe the character's condition, if she was suffering from a mental health disorder, and make recommendations about what her caregivers should do to help her. Patient reports indicated low identification of symptoms of psychosis, including delusions (n=6) and disorganized speech, (n=8). Caregivers were also twice as likely to recommend the character seek professional treatment than patients (Veronica Lopez et al., 2018).

Fonseca et al. (2017) conducted a study with perinatal women and their levels of literacy and depression. Their findings concluded that participants (n=194) in general have a moderate level of depression literacy, while participants in their perinatal stage had a higher depression literacy levels related characteristics of depression than treatments for depression. Participants with lower education and socioeconomic levels exhibited associations with poor depression literacy, however those with experience with psychiatric issues and treatments had higher levels of depression literacy. Fonseca et al., 2017 reported woman with lower depression literacy also displayed a negative effect on their depression symptom recognition and awareness (Fonseca et al., 2017).

Mental Health Literacy

Mental health literacy was explored in eight of the 19 included articles (Buchman-Wildbaum et al., 2018; Y.-J. Choi, 2017; Y. J. Choi & Park, 2016; Guy et al., 2014; Pineda, 2014; Saraf et al., 2018; Spedding et al., 2018; Swami & Knowles, 2014).

Vulnerable Populations: Immigrants (6-8)

Pineda et al. (2013) explored mental health literacy and Latina mothers in the United States and mental health decision making for their children (Pineda, 2014). Based on the findings, there is an increased risk of poor mental health outcomes for Latina adolescents. Researchers were gauging the influence of interpersonal violence (IPV) on adolescent mental health. Participants were given vignettes in a randomized order each describing a disorder with three neutral vignettes for comparison. Acculturation of the Latina mothers influenced maternal decision making in the following ways: lower acculturated mothers had a more developed ability to recognize more psychiatric symptoms exhibited by their children while higher acculturated mothers indicated greater tendencies to utilize formal mental health resources.

Choi and Park (2016) also studied acculturation and mental health literacy among immigrant women in Korea. Investigators evaluated the levels of mental health literacy and acculturation stress on women whose immigration to Korea was motivated by marriage for improved socioeconomic status than in their home countries. The women were from multiple counties of origin: China (31.6%, Vietnam (26.3%), Russia (10%), and the Philippines (9.1%). Their findings concluded that the higher levels of acculturation stress combined with a lack of community mental health resources resulted in low levels of mental health literacy and mental health care seeking behaviors. Choi and Park also discovered there are negative implications for the social competencies of the children ofthe immigrant women in the study (Y. J. Choi & Park, 2016).

Choi (2017) again studied women in Korea who were immigrants. Participants (N=63) were divided into a control group and an intervention group A majority of the women in the experimental group (72%. n=23) had at least a high school education and were provided a translator, essentially a gatekeeper, to provide mental health education to the experimental group participants. Conclusively, the experimental group participants showed a marked increase in health literacy from 2.65 to 2.78 with the aid of their gatekeepers instruction (Y.-J. Choi, 2017).

Vulnerable Populations:Perinatal (9-10)

Spedding et al. (2018) assessed mental health literacy as a barrier to recognizing the need for treatment in a sample of (n=262) pregnant participants focused on the perinatal period. Participants were instructed to read vignettes that displayed a mental health disorder and self-

identify the mental health disorder, if any. Their responses were separated into the following eight categories: accurate diagnosis, stress, depression (inaccurate), medical problem, unable to diagnose, pregnancy related problem, vague, and no problem. The highest number of participants that were able to accurately categorize the vignettes on prenatal depression (44.2%) with the lowest number of participants recognizing the vignette with the thematic category of Schizophrenia (7.4%). Most participants attributed the reason for the conditions identified in the vignettes was due to stress (94.0%). In comparison with prenatal prenatal and postnatal vignettes, motherhood was most frequently identified as the cause for symptoms (91.9%). These results conclude that perinatal women are more likely to identify more common mental health disorders and the attribution is most likely identified as being caused by the stressors of being a mother more than the other offered attributes: alcohol dependence (51/262%, n=51) , prenatal depression (54/262%, n=54), schizophrenia (56/262%, n=56), panic disorder (53/252%, n=53), or post natal depression (48/252%, n=48) (Spedding et al., 2018).

Guy et al. (2014) investigated mental health literacy and postpartum depression among lower income women. The authors studied twenty-five women in a focus group setting and asked general questions about the concepts of stress and stresses, not using symptoms specific terms such as postpartum depression to mitigate stigma. This qualitative study found that the overall group did recognize changes in their own mental states as well as with others. Women attributed life traumas and stressors associated with economic status to their conditions. While the women were able to recognize these patterns, they self-reported barriers to professional mental health treatment due to fears, which resulted in some risk coping strategies (e.g. smoking and drinking) despite most participants having a positive view on treatmenttreatment providers (Guy et al., 2014).

Vulnerable Populations: Young Women (11)

Saraf et al. (2018) researched the mental health literacy among adolescent females in India with a considerable sample size (n=337) of girls ranging in age from 16 to 19. Participants were presented with two vignettes one describing depression, the other self-harm and suicidality. Participants were instructed to read the vignettes and identify the disordered exemplified in the passage. Their responses were rated comparative to an analysis by three independent raters. When probed about the underlying issue in the depression vignette, 48.6% (n=87) participants categorized the issue as distress, 29.0% (n=63) categorized the issue as loneliness, and only 7.8% (n=6) correctly identified the issue as depression. When probed about the self-harm vignette, 29.0% (n=65) categorized the issue as distress, 74.0% (n=68) categorized the issue as loneliness, and 21.7% (n=35) as sadness. Some participants 63.0% (n=73) correctly identified the issue as suicidal ideation in their top three responses, but only 14.6% (n=41) identified it as their number one response (Saraf et al., 2018).

Vulnerable Populations: LGBTQIA+ (12)

McNair and Bush (2016) researched mental health seeking behavior patterns in same sex attracted women (SSAW), transgender, and gender diverse women. The significance of this study is important as SSAW are disproportionately affected by mental health issues, namely anxiety and depression. Of the 1628 sample size, 80% of participants reported experiencing mental health problems within the previous 12 months. Most participants reported having sought resources for professional help: 74.4% through their general practitioner, 44.3% through a psychologist or counsellor, 23.3% through an allied health professional, 14% through a psychiatrist, 22.2% utilized other specialist doctors, and 10.4% opted for telephone counseling services. A small percentage 6.8% had not accessed any professional support services. Social help seeking was popular among participants as well with 74.7% seeking from family and/or friends, 55.2% used internet support services, 18% through social organizations, 10.7% through self-help and support groups. The authors determined the levels and options for help seeking options is plentiful and multi-varied commensurate to the severity of mental health issues experienced by members of the sample (McNair & Bush, 2016).

Stigma (13)

Buchman et. al. (2018) conducted a longitudinal study, spanning from 2001 to 2015, on social rejection of mentally ill individuals in Hungary. Researchers examined the levels of social rejection towards people within nine marginalized groups

(e.g. prisoners, AIDS, mentally ill, immigrants, etc.). The results indicated that mentally ill people rated among the top three most socially rejected groups behind drug and alcohol abusers. Mental health literacy in Hungary is a contributing factor to these ideals of social rejection with strong held beliefs among those studied. The authors concluded that health literacy education needs to be improved as evidenced by the lack of improved understanding of mental health illness and societal stigma (Buchman-Wildbaum et al., 2018).

College Students (14)

Paulus et al. (2013) examined the normalization of anxiety disorder symptoms in the United States and how minimization of symptoms can lead to self-created barriers to mental health treatment. Two hundred and seventy participants at a large public university responded to nine vignettes containing varying degrees of mental health disorders (i.e social anxiety disorder [SoAD], generalized anxiety disorder [GAD], and major depressive disorder [MDD]). Participants ratings were compared to that of a mental health expert who reviewed and scored the same vignettes. Participants under-rated both mild/subclinical and moderate cases of SoAD to be significantly less severe than the ratings of the professionals. Participant and professional ratings similar in the case of severe SoAD. Participants grossly under-rated the severity levels of GAD in the vignettes. Researchers did note persons with GAD often suffer from co-morbid physical and other mental health disorders and view the symptom of worry as a part of another disorder as opposed to its own mental health disorder and do not recognize it as a category in itself requiring treatment. In the case of MDD, participants grossly over-rated the significance of severity in all three vignettes which was attributed to an increase in health literacy education and awareness to MDD. Given this likely association, the authors recommend a similar campaign of mental health literacy education for the other disorders which were underrated (Paulus et al., 2015).

Eating Disorders (15-17)

Both Bohrer et al. (2016) and Gratwick-Sarll et al. (2014) evaluated treatment seeking and poor self-recognition for eating disorders. Bohrer et al. (2016) assessed likelihood of participants to seek treatment through a questionnaire based assessment and found that gender was the most significant predictor of treatment seeking behaviors. The study examined a participant group (n=595) with a majority being female, 77.8%. Men were overwhelmingly less likely to seek treatment for concerns with eating or weight problems compared to women. Age also emerged as a significant factor in treatment seeking, with older adolescents being more likely to seek treatment than younger adolescents (Bohrer et al., 2017; Gratwick-Sarll et al., 2016).

Gratwick-Sarll et al. (2014) investigated 996 female adolescents vignettes with bulimia nervosa. Participants indicated whether they were currently experiencing the symptoms of the person in the vignette. Self reporting measures showed that over half of participants did not believe they currently experienced problematic eating, with 139/996 admitted to having an eating disorder. Investigators then administered the Eating Disorder Examination Questionnaire (EDE-Q) sub-scales and discovered that while participants did not believe they suffered from an eating disorder, this may have been due in part to the health literacy knowledge on eating disorders as the participants recognized bulimic-type eating disorders as characterized by self-indices vomiting, and did not attribute it to other behaviors such as restraint, eating concerns, and weight/shape concerns as major indicators of an eating disorder. Increased health literacy on the spectrum of symptoms was suggested to lead more adolescents to seek treatment (Gratwick-Sarll et al., 2016).

Swami & Knowles (2013) examined mental health literacy of negative body image in a sample of 485 British adults. Participants viewed vignettes of fictional people suffering from negative body image and responded to a series of questions related to mental health literacy. Participants completed the 13-item Body Appreciation Scale to meausure aspects of positive body image. Less than one fifth of participants corriectly identified the vignettes. Women rated conditions described through the vignettes as more disressing and requireing more help than men (Swami & Knowles, 2014).

Resilience (18-19)

Resilience in young women has also been examined. Beks et al. (2018) studied university college students and revealed that male college and

international students has lower MHL than female college students. Resilience did not differ across the groups. Beks et al. attributed the lack of treatment seeking to the time of year the participants used the mental health services. The study included 354 students participants across three periods of time using a MHL survey (i.e. measuring recognition of mental health disorders, how to seek information on mental health, knowledge of risk factors and their causes, understanding of self-treatments, knowledge of available professional assistance, and opinions that support recognition of symptoms and appropriate help-seeking behaviors). Over the course of the study the number of students open to accessing counseling services and attendance increased over each of the consecutive time periods.

Satyanarayana et al. (2016) provides an international perspective on resilience with the added stratum of gender disadvantage among girls in India. Of a sample analysis of 452 women K-10 scores found 9.7%, (n= 44) of the women experienced severe distress, 14%, (n= 63) reported moderate distress, 22.5%, (n=102) had mild distress, and 53.8%, (n=243) reported experiencing no psychological distress. The mean total score on CD-RISC was 61.58 (SD 13.51). The sub-scale scores were: Hardiness (M = 20.39; SD = 5.31), Optimism (M =11.63; SD = 3.89), Purpose (M =5.77; SD = 2.56) and Resourcefulness (M =13.88; SD = 4.42). Gender disadvantage had an increasing effect on psychological distress and a deceasing effect on resilience.

DISCUSSION

Based on the high prevalence of mental health disorders, greater understanding and research, investigating mental health literacy may global health issue. This systematic review recognizes the importance of MHL in women while also underlining the very limited number of studies that exist in the literature. Women more often report mental health problems more frequently than men, and often the health problems are more persistent among women, further highlighting the need for future studies on MHL in women ("Gender and women's mental health," 2019) (WHO, 2019b).

This review was also able to identify there is little consistency in the measurement of mental health literacy. A consistent MHL measurement tool across disciplines is needed to ensure the same aspect of health is being measured and to ensure the same health benefits are being reported. Mental health problems can impact many different aspects of health and related life outcomes, especially for women, it is an important topic to prioritize in future research ("Gender and women's mental health," 2019) (WHO, 2019b).

The scant findings in this review brings greater attention to a somewhat ignored area of health literacy in general. This leaves future investigators numerous opportunities for tool testing, refinement and validation. It should be noted, that a number of qualitative studies displayed important questions and provided much-needed scientific results. The impact of age and income was significantly related to mental health literacy in the studies with a large sample size. Education was noted as an important factor for mental health literacy and mental health behaviors in several studies. As echoed in several article conclusions, regardless of demographics or socioeconomic factors, mental health literacy is lacking among females.

Limitations

This systematic review is not without limitations. As with all systematic reviews, there is a possibility for research bias. This review only includes scientific publications for a five-year time period. To minimize potential biases, scientific methodology was used and reported to identify studies and synthesize findings (Moher et al., 2009). Although some work has advanced the field, additional research is warranted. The lack of clinical heterogeneity (variety between subjects or participant characteristics) and the lack of statistical wrong word (findings across studies) limit the generalizability of findings.

CONCLUSIONS

This study had several strengths worth noting. First, this is the first systematic analysis of MHL and women. Looking at the collective impact on women's mental health outcomes in relation to mental health literacy is an important first step needed to make future advancements for this health topic. Second, the studies were from a diverse mix of settings including both international settings and some in the United States. The multiple sites added to the diversity of perspective in describing this public health issue

across many different settings. Finally, the included studies generally had large sample sizes also supporting the generalizability of the review findings.

The variation of mental health services used by the LGBTQIA+ community in the McNair & Bush (2016) article shows promise. No other article located in the review discussed multiple options for women's mental health issues. Additional research is needed to better understand if heterosexual mental health patients would utilize the options described by McNair and Bush One study showed promise for women displaying resilience behaviors (Satyanarayana et al., 2016). Further research is needed to tease out the factors associated with women's mental health literacy and resilience. It appears mental health literacy screening in clinical care settings may be a good starting point for addressing mental health literacy concerns and removing stigma for future care. Additionally, education about women's mental health issues is warranted.
The advantages of improving mental health literacy include improved health care decisions, communication, compliance to treatment directions, and improved health status for women of all ages. As noted in the literature, early education and interventions will benefit families, communities and populations.

References

Due to size limitations, a list of references for this article can be downloaded in PDF form at: https://bit.ly/2ZJ3493