REVIEW

GENDER DISPARITY IN PREVALENCE OF DEPRESSION AMONG PATIENT POPULATION: A SYSTEMATIC REVIEW

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ABSTRACT

BACKGROUND: Many people are unable to withstand the set point for usual vicissitudes of life and are overwhelmed by depression, especially when there is a potential stressor like a disease. Gender is very important in defining susceptibility and exposure to a number of mental health risks. The objective of this review is to systematically identify, appraise and synthesize the best available evidence on gender disparity in prevalence of depression among patient populations.

METHODS: Observational analytical studies done on patients of 18 years old were included. The JBI-MAStARI tool for extraction was used to pool quantitative data. Review Manager Software was used for meta-analysis and Odds ratios and their 95% confidence intervals were calculated.

RESULT: On Meta-analysis, a total of 19639 patients were involved, with male to female ratio of 1.14:1. The finding of the Meta analysis showed that male sex is 63% less likely to develop depression than female sex (Odds ratio=0.63, 95% Confidence Interval= 0.59, 0.68). The studies included were homogenous; Heterogeneity test: Chi² = 309.23, df = 30, (P < 0.00001).

CONCLUSION: Depression is more common among females than male patients.

KEYWORDS: Gender disparity, depression, systematic review

INTRODUCTION

Data on the size of the global burden of mental disorders reveals depression as being a significant and growing public health problem associated with a heavy burden of morbidity and disability in both developed and developing nations (1). There are wide ranges of points of view and perspectives of human psychological construct: as normal facilitating, pathological debilitating, emotional state or reaction, disorder and syndrome (2). The capacity to tolerate a “normal expectable” level of stressor is a sign of optimum mental health (3). However, many people are unable to withstand the set point for usual vicissitudes of life and are overwhelmed by anxiety and depression; as a result, symptoms of depression and/or anxiety may develop. Among all psychiatric disorders, anxiety and depression are the most frequent (1).

Gender is one of the critical determinants of health which influences the power and control men and women have over the determinants of their health, including their socioeconomic position, roles, rank and social status, access to resources and treatment in a society (4). As such, gender is important in defining susceptibility and exposure to a number of mental health risks (1). It becomes impossible to examine the impact of gender on mental health without studying existing gender-based disparity in prevalence of depression as baseline data (3). Consequently, the conceptual framework for this review is developed to determine disparity if it exists so that the study can contribute to endeavors of redressing the determinants that lead to poor health.

Many of the negative experiences of and exposures to mental health risk factors that lead to and maintain the psychological disorders predominately involve gender-based socio-

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economic expectations (4). To reduce the contribution of gender in the rise of prevalence of depression among patient population, gender sensitive health care is essential and services must be tailored to meet the needs of each gender.

The literature consistently indicates that both diagnostic syndrome and clinical depression are more prevalent among boys than girls until adolescence, when rates for girls increase while rates for boys stabilize, until the 2:1 ratio is established (5). In adulthood, some review showed that women are approximately twice as likely as men are to experience depression. However, findings of disparity on patient population are inconsistent (Table 1)—some favoring the classical finding—more females depressed while others not (Table 1). Thus, this review is done and believed to be helpful to provide the best available evidence on disparity in gender specific prevalence of depression among patient populations.

METHODS

The objective of this review was to systematically identify, appraise and synthesize the best available evidence on gender disparity in prevalence of depression among patient population by limiting variations of the diagnostic criteria or instrument and enabling similar set of reference for the study population. Studies done on patients of 18 years old or older regardless of country of residence, ailment sustained or comorbid factors were included. Observational analytical studies (cohort studies, case-control studies and cross-sectional studies) only done by Beck depression scale (BDI), Zung Self-Rating Depression Scale (ZUNG SDS), Diagnostic and Statistical Manual of Mental illness (DSM IV), Hospital Anxiety and Depression Scale (HADS), Hamilton Depression Rating Scale (HDRS), The Mini-International Neuropsychiatric Interview (MINI), The Composite International Diagnostic Interview (CIDI), Epidemiological Studies-Depression scale (CES-D), six-item Self-report scale (K6) and Patient Health Questionnaire 9 (PHQ-9) for depression were considered for inclusion. These scales have been used to assess anxiety more extensively worldwide than any other measures and selected for their validity and reliability on the study setting.

Three staged search strategy was used to identify all relevant published literature in English language from the millennium to 2012. Databases searched were PubMed, CINAHL, PopLine, LILACS, MedNar and Embase. All papers selected for inclusion in the review were subjected to a rigorous, independent appraisal by the investigator prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute (6). Quantitative papers were pooled in statistical meta-analysis using the Review Manager Software (Rev Man 5). Odds ratios and their 95% confidence intervals were calculated for analysis.

The following search strategy was modified for the various databases and search engines with initial keywords/search terms: (“Depression” OR “Prevalence of depression” OR “Prevalence of anxiety and depression” OR “anxiety”, OR “depression) and (Gender difference OR “sex difference” OR “gender” OR “gender disparity”).

RESULTS

A total of 2450 relevant papers were identified in the literature search and 685 of them were retrieved for examination. Following review of titles and abstracts against the review objectives and inclusion criteria, 569 titles were excluded. The full texts of the remaining 116 studies were retrieved for detailed evaluation, after which, 55 of these were excluded. The remaining 61 studies were assessed for methodological quality using the JBI-MAStARI critical appraisal tool and, subsequently, 31 studies were included in the review for meta-analysis; the other thirty studies were deemed to be of insufficient methodological quality and were excluded from the review.
Table 1: Summary of main details of the included studies

| Author                  | year | Sample size(N) | Tool | % Male depressed | Total N | % Female depressed | Total N |
|-------------------------|------|----------------|------|------------------|---------|-------------------|---------|
| Reyes-Zúñiga et al. (7) | 2012 | 382            | HADS | 73               | 236     | 75                | 146     |
| Moussaset al. (8)       | 2008 | 132            | BDI  | 34               | 78      | 30                | 54      |
| Tselebis et al. (9)     | 2010 | 167            | BDI  | 73               | 132     | 26                | 35      |
| Li XJ et al. (10)       | 2012 | 1059           | HADS | 114              | 914     | 177               | 1081    |
| Na Yong et al (11)      | 2012 | 176            | HADS | 3                | 32      | 28                | 144     |
| Golpour et al. (12)     | 2012 | 100            | BDI  | 9                | 44      | 44                | 56      |
| Tovilla et al. (13)     | 2012 | 702            | HDRS | 139              | 310     | 196               | 392     |
| Sulehri et al. (14)     | 2010 | 60             | BDI  | 31               | 36      | 17                | 24      |
| Nidhinandanaet al. (15) | 2007 | 110            | TGDS | 15               | 38      | 9                 | 22      |
| Al Ansari et al.,(16)   | 2010 | 300            | MINI | 54               | 130     | 100               | 170     |
| Eiman M., Manal S. (17) | 2004 | 125            | DSM-IV | 10     | 45      | 63                | 80      |
| Arrollet et. (18)       | 2009 | 7433           | CIDI | 370              | 4460    | 337               | 2973    |
| Mhaidatet al. (19)      | 2009 | 280            | HADS | 29               | 146     | 43                | 134     |
| Zafarullah K. (20)      | 2012 | 81             | DSM-IV | 23     | 49      | 8                 | 32      |
| Sherinaet al. (21)      | 2002 | 188            | DSM-IV | 31     | 117     | 10                | 91      |
| Liang et al. (22)       | 2012 | 1144           | Zungscal | 144   | 487     | 237               | 657     |
| Silva et al. (23)       | 2011 | 288            | HDRS | 18               | 125     | 48                | 193     |
| Gottlieb et al. (24)    | 2004 | 155            | BDI  | 78               | 122     | 15                | 33      |
| Darnallet et. (25)      | 2005 | 914            | CES-D | 156    | 552     | 106               | 361     |
| Bokharriet et al. (26)  | 2002 | 154            | HADS | 36               | 115     | 21                | 39      |
| Maharajet al. (27)      | 2005 | 734            | Zungscal | 40    | 196     | 429               | 538     |
| Afolabi et. (28)        | 2008 | 250            | ZDS  | 29               | 74      | 71                | 176     |
| Onesirosanet al. (29)   | 2010 | 200            | BDI  | 23               | 69      | 37                | 71      |
| Nabil et al. (30)       | 2010 | 347            | K6   | 17               | 120     | 32                | 227     |
| Lesman-Leegteet al. (31)| 2009 | 958            | CES-D | 217    | 603     | 170               | 355     |
| Bhandarkaret al. (32)   | 2011 | 353            | HADS | 74               | 190     | 99                | 263     |
| Duttaet al. (33)        | 2013 | 476            | PHQ9 | 67               | 195     | 184               | 281     |
| Monteiro and Aparecida. (34) | 2010 | 114     | HDRS | 50               | 62      | 50                | 52      |
| Agbiret et. (35)        | 2010 | 160            | DSM-IV | 10     | 94      | 21                | 66      |
| Hakimschooshtaryet (36) | 2007 | 509            | DSM-IV | 261    | 407     | 37                | 102     |
| Freedlandet al. (37)    | 2003 | 313            | DSM-IV | 88     | 303     | 136               | 310     |

On Meta-analysis, a total of 19,639 patients were involved, with male to female ratio of 1.14:1. Among male patients (10,481), 2316 were found to have depression (22%). On the contrary, 2856 of the total female patients (9,158) were found to have depression (31.2%). The finding of the Meta-analysis showed male sex is 63% less likely to develop depression than female sex (Odds ratio=0.63, 95% Confidence Interval= 0.59, 0.68). The studies included were homogenous; heterogeneity test: Chi² = 1.35, df = 2, (P = 0.51). The test for overall effect also showed a high statistical significance at conventional levels (P<0.000001). Thus females are more depressed than males among patient populations.
DISCUSSION

The finding of this review is consistent with results of studies conducted across many nations which showed that women are about twice as likely as men to develop depression (38-39). There was no difference identified in disparity in prevalence of depression among patient populations except mimicking the classical finding of general population which is higher prevalence of depression among females. Higher depression disorders among women in general population was noted in studies done by Kessler, McGonagle, Swartz, Blazer, & Nelson-lifetime prevalence of 21.3%, compared with 12.7% in men (38-40). The result of this study reflects similarity in men and women’s depressive response when both sexes are exposed to stressors.

Even when women and men are confronted with similar stressors, the former may be more vulnerable than the latter to develop depression and related anxiety disorders such as posttraumatic stress disorder (41). Women’s greater reactivity compared with men’s has been attributed to gender differences in biological responses, self-concepts, and coping styles. Understanding the gender difference in depression is important for at least two reasons. First, women’s high rates of depression incur tremendous costs in quality of life and productivity, for women themselves and their families, so that health care system should give gender sensitive care directed to alleviate the problem. Second, understanding the gender
difference in depression will help us to understand the causes of depression in general. In this way, gender provides a valuable lens through which to examine basic human processes in psychopathology and psychotherapy.

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