

Research Paper

The Prevalence of Depression in Iranian Women With Breast Cancer: A Meta-Analysis



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ABSTRACT

Aims Breast cancer is among the most prevalent cancers in women and has mental and emotional effects, leading to declined quality of life. The current study aimed to determine the prevalence rate of depression in Iranian women with breast cancer.

Methods & Materials This study was conducted using a meta-analysis method at Zabol University of Medical Science in March 2019. Six electronic databases were searched and evaluated for original research papers published on the prevalence of depression in Iranian women with breast cancer. Finally, 15 articles were selected and analysed using Comprehensive Meta-Analysis software.

Findings Overall, the prevalence rate of depression in Iranian women with breast cancer was 18.5% (95% CI: 14.2%-23.7%). The highest reported prevalence of depression in Iranian women with breast cancer was 35% in Babol City, in 2013, (95% CI: 27.8%-43%); the lowest prevalence of depression in this population was measured as 3.4% in Qom City, in 2017 (95% CI: 1.2%-9%). A significant correlation was observed between the prevalence rate of depression, and sample size, year, and mean age ($P < 0.05$).

Conclusion Depression affects approximately one-fifth of women with breast cancer. Therefore, it is essential for the healthcare staff to treat the physical conditions and psychological disorders associated with breast cancer.

Extended Abstract

1. Introduction

One of the most common cancers among women is breast cancer. According to the World Health Organization, breast cancer accounts for approximately 30% of all cancers in women [1]. About 2.1 million women are diagnosed with breast cancer annually. This cancer is the second leading cause of cancer death in wom-

en after lung cancer. In 2018, it was estimated that 627000 women would die from this cancer, i.e. about 15% of all cancer deaths among females. The Global Cancer Observatory [2] estimated that the incidence of breast cancer will increase from two million in 2018 to >3 million in 2046; a 46% increase [3].

More than 55% of breast cancers leading to death occur in low- and middle-income countries [4]. In India, for example, approximately 100000 females are diagnosed with breast cancer per year. Such a rate is an increase that has

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been concentrated in urban areas. This rate will increase to 131000 women by 2020 [5]. The most essential factor that has increased the prevalence of breast cancer in these countries is lifestyle changes. Smoking, alcohol, and obesity are on the rise in low- and middle-income countries [6]. Furthermore, factors, such as delayed childbearing and reduced breastfeeding in these areas have exacerbated the risk of breast cancer [7].

In Iran, the incidence of breast cancer is at least one decade lower than in developed countries. According to 2016 statistics in Iran, one in 10 to 15 Iranian women is likely to develop breast cancer [8, 9]. The total number of women with breast cancer was about 40000 by 2016, with about 7000 patients added per year [10]. More than 40% of the investigated patients were in the age group of 40-50 years and the average age of infected women in Iran was lower than that of the other countries [11].

Breast cancer has more severe psychological effects than other cancer types in women. Extensive advances have been made in treating this cancer; however, suffering from the disease, fear of death, decreased performance, complications associated with treatment, and the lack of socioeconomic support have increased the mental health disorder of patients with this cancer [12]. Various studies have explored the prevalence of depression in women with breast cancer in different regions of Iran. However, these studies cannot provide a comprehensive picture of a country. Therefore, by integrating the results of corroborated studies on the prevalence of depression in breast cancer patients, it is better to provide more constructive recommendations for policymakers in line with evidence-based policymaking. The current

meta-analysis study aimed to determine the prevalence rate of depression in Iranian women with breast cancer.

2. Materials and Methods

This meta-analysis research was conducted in April 2019 at Zabol University of Medical Sciences. To obtain scientific documents and evidence related to depression in women with breast cancer in Iran, articles published in domestic and international databases, such as SID, Web of Science, PubMed, Elsevier, Magiran, Iranmedex, Scopus, as well as articles available in Google and Google Scholar search engines were used. The search process at these sites was conducted using Persian and English keywords, as follows: “depression, breast cancer, prevalence, breast neoplasm, Iran”, and other possible compounds.

Overall, 134 articles were found in the initial search. First, by screening the titles of the articles, 65 duplicate articles were removed. In the second step, by reading the abstracts, 48 unrelated articles were excluded from the study. In the third stage, after the careful investigation of the remaining articles, 8 articles were omitted due to mentioning the prevalence of depression. Two articles were obtained using the sources of the articles. A Milton checklist was used to evaluate the quality of the articles reviewed. The minimum and maximum scores obtained in this checklist were 1 and 15, respectively, and the acceptable score was equal to 10 [13]. Finally, 15 research articles on the prevalence of depression in women with breast cancer were used in this study.

Comprehensive Meta-Analysis software was used to analyze the obtained data. Due to the difference in prevalence rates, Cochran's test and I2 index were employed to evalu-

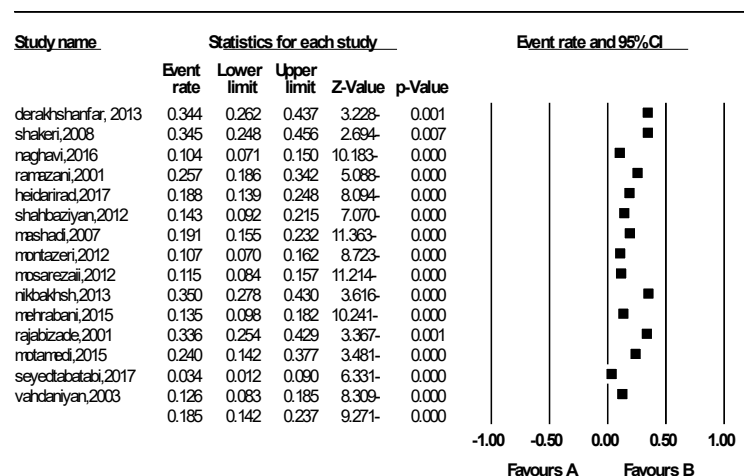


Figure 1. Meta-analysis of the prevalence rate of depression in women with breast cancer based on a randomized model

ate the heterogeneity of these studies. The heterogeneity rate was equal to 88.59%, i.e. in the category of studies with high heterogeneity. Due to the heterogeneity of the studies and the significance of the heterogeneity index, the model of random effects was applied in this meta-analysis. Publishing bias was assessed by the Egger test and calculated to be 0.39. Thus, the odds of publishing bias was not statistically significant.

3. Results

Based on the random effect model, the overall prevalence rate of depression in breast cancer patients was calculated as 18.5% (14.2%-23.7%: 95% confidence interval). The highest prevalence rate of depression in women in 2013 belonged to Babol City, i.e. equal to 35% (27.8%-43%: 95% confidence interval). Besides, the lowest prevalence rate of depression belonged to Qom City in 2017, i.e. equal to 3.4% (1.2%-9%: 95% confidence interval) (Figure 1).

4. Discussion

The prevalence of depression in Indian women with breast cancer in 2017 was computed as 22% [14]. Moreover, the same value in Malaysia women with breast cancer in 2015 was equal to 22% [15]. In a systematic review study in 2013, the prevalence of depression in women with breast cancer was reported to be about 13%-56% [16]. In addition, a meta-analysis study in 12 countries in 2019 suggested that prostate cancer (17.27%), ovarian cancer (25.34%), and lung cancer (13.1%) had the least prevalence of depression, respectively. Additionally, breast cancer (42.5%) had the highest prevalence of depression in the studied countries [17].

Cancer psychotherapy services are required in the primary care of patients. Due to its importance in improving the quality of life of patients, it is better to provide access to it in medical centers with proper planning. Considering the limited number of studies and the low number of patients included in those studies, measuring the prevalence of depression in pregnant women with breast cancer should be interpreted with caution. Therefore, it is suggested to conduct research in other provinces of Iran using a quantitative approach.

5. Conclusion

The present meta-analysis study determined the prevalence rate of depression in Iranian women with breast cancer. Accordingly, we provided beneficial data to the policy-makers and managers of the Iranian healthcare system. The prevalence of depression affects approximately one-fifth of

breast cancer patients. Therefore, in the treatment of breast cancer, it is necessary to pay attention to physical therapy and the management of psychological disorders associated with this condition.

Ethical Considerations

Compliance with ethical guidelines

This article is systematically based on the principles of ethics in research.

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Authors' contributions

Main idea: Isfahan Butterfly; Rewriting the article and final approval of the article: Parvaneh Isfahani, Monireh Shamsaii and Seyedeh Mahboubeh Hosseini Zare; Data collection: Monira Shamsaii; Data analysis: Seyedeh Mahboubeh Hosseini Zare.

Conflicts of interest

The authors stated no conflicts of interest.