



## Prevalence of Female Sexual Dysfunction in Iran: A Meta-Analysis Study Abstract

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### Abstract

**Background:** Sexual dysfunction in women is very common and it affects physical and mental health. Several studies have been conducted in Iran in order to investigate the prevalence of female sexual dysfunction. However, there is a remarkable diversity among the results. This meta-analysis was conducted to estimate the overall prevalence of female sexual dysfunction in Iran.

**Methods:** International and national electronic databases were searched up to June 2016, which included MEDLINE, Science Citation Index Expanded, Scopus, ISI, Google Scholar, IranDoc, SID, MagIran, and IranMedex, as well as conference databases. Furthermore, reference lists of articles were screened and the studies' authors were contacted for additional references. Cross-sectional studies addressing the prevalence of female sexual dysfunction were included in this meta-analysis.

**Results:** We assessed eight separate studies involving 5,778 participants overall, of which 2,335 had sexual dysfunction. Overall prevalence rate of female sexual dysfunction was 0.48 (0.38, 0.59).

**Conclusions:** Various prevalences of sexual dysfunction have been reported in different studies. Furthermore, despite many studies conducted addressing the prevalence of female sexual dysfunction, there is however a remarkable diversity between the results. Thus one can hardly give a precise estimation of the prevalence rate of female sexual dysfunction in Iran at the moment.

**Keywords:** Sexual dysfunction, Meta-analysis, Prevalence, Iran.

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Female sexual dysfunction (FSD) is a multidimensional medical subject with biological, psychological, and interpersonal determinants. It is very common among women in westernized countries.<sup>3</sup>

Sexual dysfunction has major effects on quality of life in women. Sexual dysfunction has damaging impact on self-esteem, sense of wholeness and interpersonal relationships of women. It is often emotionally distressing. If female sexuality is disturbed, the consequences are that it might lead to familial conflict and divorce, and reproduction is also affected.<sup>4</sup>

An analysis of data in the US from the National Health and Social Life Survey found that sexual dysfunction is more common in women (43 %) than in men (31 %), and the prevalence varied among women of different racial groups.<sup>5</sup>

In Middle Eastern countries, family is the very basic unit of the society. Sexual dysfunction is an important issue that affects the family's well-being. Many women with important sexual dysfunction in this part of the world do not consult their family physicians about their problems that are possibly related to cultural factors.<sup>6</sup>

Prevalence of sexual dysfunction varies in different communities and is caused by medical factors, psychological, socio-economic, cultural and racial factors. In recent years, the prevention, diagnosis and treatment of sexual dysfunction has been the source of a lot of attention. For the diagnosis and treatment of sexual dysfunction, we will first need to determine the exact prevalence of these disorders. Several studies have been conducted in Iran in order to investigate prevalence of female sexual dysfunction. However, there is a remarkable diversity among the results.<sup>7-14</sup> Thus this meta-analysis was conducted in order to estimate an overall summary measure of prevalence rate of sexual dysfunction among women in Iran.

### Materials and Methods

We included all cross-sectional studies investigating the prevalence of female sexual dysfunction, irrespective of publication status or language. Cohort and case-control studies were excluded. Women with chronic or severe medical illnesses or psychiatric illnesses, drug abuse, infertility, menopause, and those who were pregnant or were within two months postpartum, were excluded from the study.

We used and combined the following keywords: "dysfunction or disorder; and female or women; sexual; and Iran". We searched both international and national electronic databases as follows: MEDLINE (January 1990 to June 2016); Science Citation Index Expanded (January 1990 to June 2016);

## Introduction

The World Health Organization (WHO) defines sexual health as physical, emotional, mental and social well-being, not just the absence of weakness, disease and disability in relation to sexuality. Sexual health requires a positive and respectful approach to sexuality and sexual relationships with sexual experience being safe and enjoyable without any coercion, discrimination, and violence. To obtain and maintain sexual health, sexual rights of all persons must be respected, protected and fulfilled.<sup>1</sup>

According to Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM5), sexual dysfunction in women includes orgasmic disorder, interest/arousal disorder, genitopelvic pain, penetration disorders, and substance and drug-use disorders. Sexual dysfunction is a heterogeneous group of disorders that is clinically significant disorder in the ability for sexual response and having an enjoyable sexuality.<sup>2</sup>

Scopus (November 2000 to August 2016); SID (January 2000 to August 2016); Magiran (January 2000 to August 2016); and Iran Medex (January 2000 to August 2016). We also scanned the reference lists of all included studies for additional references. We contacted the authors of included studies for additional eligible studies.

Title and abstract of the retrieved studies were screened to decide on which studies met the inclusion criteria of this meta-analysis. Then, the full texts of eligible studies were reviewed and necessary data were extracted and entered into an electronic datasheet. The authors were not blinded to the names of the studies' authors, journals, and results. Any disagreements were resolved through discussion among the authors until consensus was reached. Nine items of STROBE checklist<sup>15</sup> were used to assess the risk of bias in the included studies. The studies with at most one unclear or inadequate quality component were considered studies with low risk of bias, otherwise they were considered as high risk. We explored statistical heterogeneity using the chi-squared (Chi2) test at 5% significance level ( $P < 0.05$ ). We quantified inconsistency across study results using eight statistics.<sup>16</sup> We also estimated the between-study variance using the tau-squared (Tau2) statistic.<sup>17</sup> We used funnel plot to investigate publication bias.<sup>17</sup> In addition, we used Begg<sup>18</sup> and Egger<sup>19</sup> statistical tests to assess publication bias quantitatively. Review Manager 5<sup>20</sup> software was employed for data analysis. Meta-analysis was performed to obtain summary measure of "prevalence rate" of female sexual dysfunction. Data were analyzed and the results were reported using a random effect model<sup>21</sup> with 95% confidence interval (CI).

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

## Results

We retrieved 228 records through database screening of MEDLINE, Science Citation Index Expanded, Scopus, ISI, Google Scholar, Iran Doc, SID, Magiran, and Iran Medex. Of 62 references considered potentially eligible for this meta-analysis, 25 studies were excluded after screening the titles and abstracts and 37 studies were excluded after reviewing full texts. Finally, eight studies were included for meta-analysis (Figure 1).

Of eight included studies, three studies were published in English<sup>7,8,12</sup> and five studies in Persian. (Table 1)<sup>9,10,11,13,14</sup>

The lowest prevalence rate of female sexual dysfunction (31%) was reported by Mazinani et al.<sup>9</sup> in Tehran City and the highest prevalence rate (64.6%) was related to the study which was conducted by Bahrami et al. in Dezful City.<sup>13</sup>

We included in the meta-analysis of eight studies with 5,778 participants overall, of which 2,335 had female sexual dysfunction. As shown in Figure. 2, the overall prevalence rate of female sexual dysfunction was 0.48 (95% CI; 0.38, 0.59).

According to Table heterogeneity, the article heterogeneity is minimal and equal to 0.02 (Figure. 2).

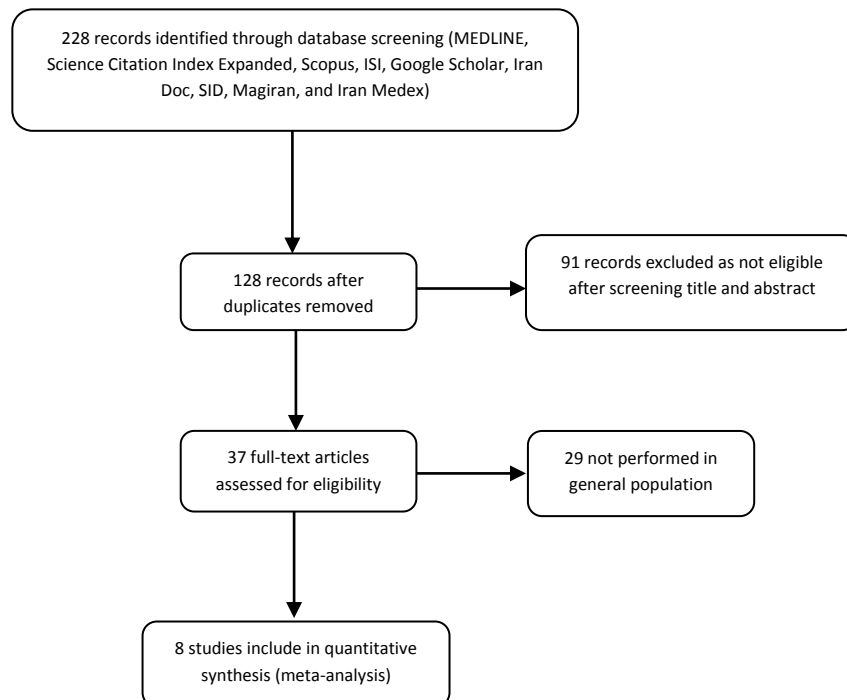
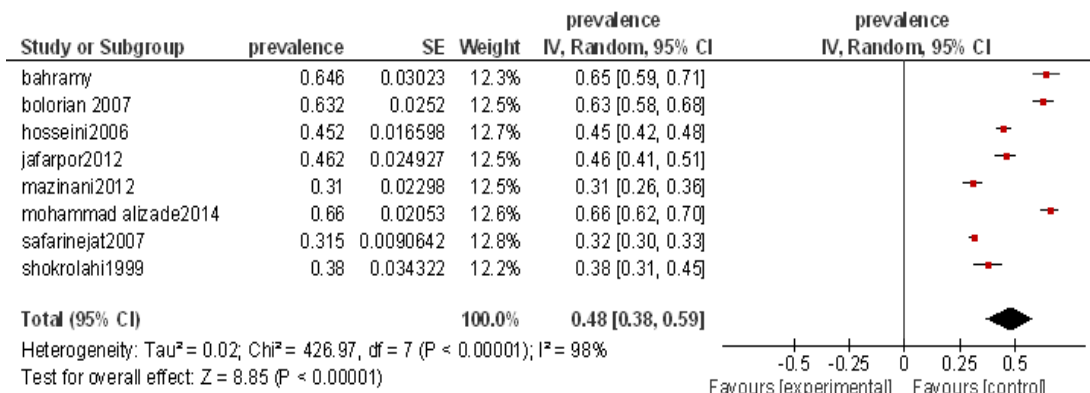


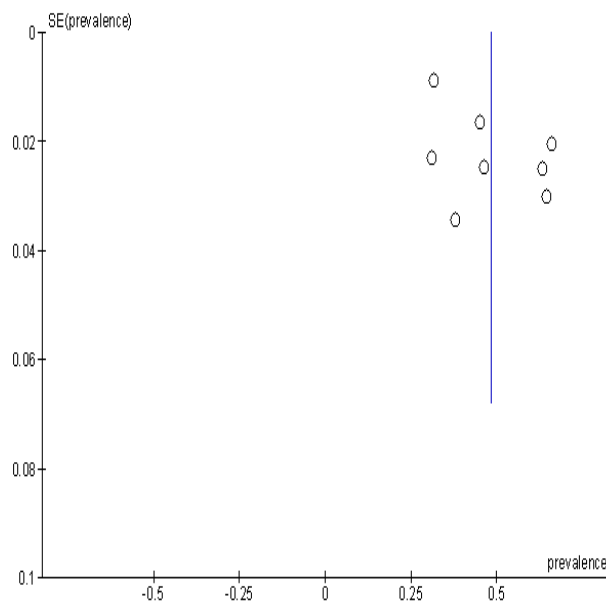
Figure 1. Flow diagram of the progress through the phases of meta-analysis

**Table 1. Characteristics of the studies under investigation**

Total prevalence	Instrument	Location, Time frame of the study	Sample size	Author
31	SFQ	Dezful, 2008	250	Bahramy
63.2	Researcher-designed	Sabzevar, 2003	366	Bolorian
45.2	FSFI	Sari, 2006	899	Hosseini
46.2	FSFI	Ilam, 2010-2011	400	Jafarpor
31	SFQ	Tehran, 2012	405	Mazinani
66	FSFI	Tabriz, 2012	532	Mohammad Alizade
31.5	FSFI	Tehran, 2006	2626	Safarinejat
38	BISF-W	Tehran, 1999	300	Shokrolahi



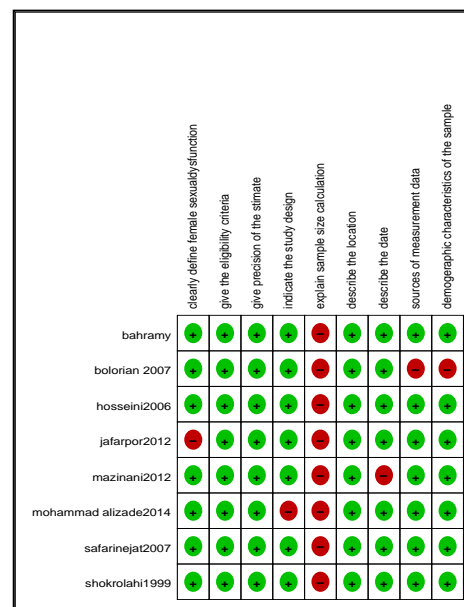
**Figure 2. Forest plot of prevalence rate of female sexual dysfunction**



**Figure 3. Funnel plot for assessing publication bias in the included studies (with pseudo 95% confidence limits)**

We assessed reporting bias using the funnel plot. The studies were distributed symmetrically around the vertical line indicating that no publication bias had occurred (Figure. 3). The statistical test for publication bias including Begg and Egger tests was not significant, confirming absence of publication bias.

There were four low-risk studies<sup>7,10,13,8</sup> and four high-risk studies<sup>9,11,12,14</sup> among the included studies (Figure. 4).



**Figure 4. Risk of bias indicating the review authors' judgments about each risk-of-bias item for each included study**

### Discussion

Female sexual dysfunction in women has major effects on quality of life and interpersonal relationships. For many women, it is physically disturbing, emotionally worrying and socially impairing.<sup>8</sup>

Eight studies were included in assessment of prevalence of sexual disorders among women. Although there were other

studies available, they were not included either as a result of lacking inclusion criteria or due to the impossibility of getting access to the full texts.

The results of this meta-analysis revealed that the prevalence of rate of female sexual dysfunction is very high, with nearly 48% of women being affected by sexual dysfunction. This should be considered a serious caution that sexual dysfunction is a threat to mental health, and it should be the focus of special attention, particularly by psychologists.

However, sexual dysfunction is not unique to Iran. Sexual dysfunction is comparable to the international statistics available. For instance, Nicolosky et al. reported a prevalence of 30% in their study on 3,350 Asian women, while Laumann et al. found a prevalence of 43% in their study conducted on a sample of 1,749 American women.<sup>4,22</sup> Sexual dysfunction is affected by medical factors, psychological, socio-economic, cultural, and racial factors.

To discuss the underlying reasons for the existing differences in the statistics of the studies, the following points can be presented: 1. the main reasons for the differences between Iranian statistics and statistics of other studies might be in the use of different questionnaires, for instance, Mazinani has used FSFI, while Shokrollahi collected BISF-W; 2. existing difference in the sampling methods, number of samples and inclusion criteria used, for instance Hosseini included 899 women referred to the health center of Sari with multistage sampling, Jafarpor included 400 women from four primary health clinics of Illam with random sampling, Safarinejat included 2,626 women with two-stage cluster random sampling in the primary sampling unit, Mazinani included 405 married women with multi-stage sampling, Mohammad Alizadeh included 532 women with two-stage cluster sampling, Bahramy included 250 women with convenience sampling, Bolorian included 366 women with convenience sampling, and Shokrollahi included 300 women with convenience sampling; 3. the difference in data collected included face-to-face interviews and completing a self-administered questionnaire. The possibility of biases in face-to-face interviews was due to lack of privacy. Meta-analysis can be a beneficial and efficient method to utilize the findings of the studies.

The results of this review showed prevalence rates of female sexual dysfunction were reported in a wide range in different studies. Planning is essential to identify and resolve the impact of sexual dysfunction on inter-personal functioning and overall quality of life in both men and women. A limitation of this study was that it collected cross-sectional studies only in women of childbearing age. It is recommended that such studies be done in all patients, including pregnant women, breastfeeding mothers, and elderly women. However, conducting a national survey may be helpful.

## Conflict of Interest

The authors declared that they have no conflict of interest.

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