Prevalence of Sexual Dysfunction Among General Population of Iran: A Systematic Review

Abbas Ali Nasehi,1 Firoozeh Raisi,2 Padideh Ghaeli,3,4 Mozghan Amini,5 Seyyed Taha Yahyavi,6,7 Jalil Arabkheradmand,7 Soghrat Faghihzadeh,8 Zahra Abbas,9 and Fattaneh Abdi10

1Iran Helal Institute of Applied Science and Technology
2Psychiatric and Clinical Psychology Research Center, Roozbeh Psychiatric Hospital, Tehran University of Medical Sciences (TUMS), Tehran, IR Iran
3Research Center for Rational Use of Drugs, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran, IR Iran
4Psychiatric and Psychology Research Center, Roozbeh Hospital, Tehran University of Medical Sciences, Tehran, IR Iran
5Psychiatric and Psychology Research Center, Roozbeh Psychiatric Hospital, Tehran University of Medical Sciences (TUMS), Tehran, IR Iran
6School of Medicine, Tehran University of Medical Sciences, Tehran, IR Iran
7Department of Psychiatry, Roozbeh Psychiatric Hospital, Tehran University of Medical Sciences, Tehran, IR Iran
8Ahya Neuroscience Research Center, Tehran, IR Iran
9Research Center for Rational Use of Drugs, Faculty of Medicine, Zanjan University of Medical Sciences, Zanjan, IR Iran
10University of Applied Science and Technology, Isfahan, IR Iran

Corresponding author: Seyyed Taha Yahyavi, Roozbeh Psychiatric Hospital, Tehran, IR Iran. Tel: +98-9126091570, Fax: +98-215541881, E-mail: st-yahyavi@sina.tums.ac.ir

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Abstract

Context: Sexual dysfunction is a health problem; but there is no comprehensive review on this subject in Iran.

Objectives: By reviewing recent studies, this systematic review was performed to estimate the prevalence rate of sexual dysfunction in Iranian general population.

Data Sources: By using related keywords, data were obtained by searching PubMed, Google scholar, Scopus, and 2 Persian databases (IranMedex and Scientific Information Database (SID)). Moreover, hand searching the key journals and reviewing the references of included articles were done.

Study Selection: This study reviewed all available published data on the prevalence of different types of sexual disorders/dysfunctions among Iranian general population until June 2016.

Data Extraction: Data were extracted independently by two observers using a researcher-made checklist.

Results: 23 studies were finally evaluated. Most of the articles did not have acceptable standard quality. Most of the reviewed original articles were conducted in females. Besides, it was noted that there was a large diversity among the results of different studies that may be due to not using standard methodologies. The reported ranges of the prevalence rates for total sexual disorders, sexual desire disorder, sexual arousal disorder, and lubrication disorder were estimated to be 19.2 to 77%, 15.4 to 65.8%, 9.8 to 88.3%, and 11.9 to 71.4%, respectively. In addition, the reported prevalence rates for pain disorder, female orgasmic disorder, and sexual dissatisfaction were estimated between 9 to 95.9%, 10.5 to 76%, and 2.4 to 78.5%, respectively.

Conclusions: Despite the large diversity in the findings of this review, it seems that the prevalence of sexual disorders is relatively high among Iranian populations. It is suggested that researchers pay more attention to the duration of evaluation in cross-sectional studies, reporting the response rates, utilizing reliable and valid measures, and applying appropriate sampling methods in order to improve the quality of future research.

Educating general population by health professionals who are involved in the treatment of sexual disorders is highly recommended.

Keywords: Epidemiology, Iran, Sexual Disorder, Sexual Dysfunction, Systematic Review

1. Context

Sexual dysfunction is known to be of the most prevalent problems in general population estimated about 10% - 25% among males and 25% - 64% among females (1). Achieving a reliable estimation about the prevalence of sexual disorders is an essential step towards its prevention and treatment. So far, two review articles have been published about the prevalence of sexual dysfunction in Iran. A systematic review on the prevalence of sexual disorders among Iranian general population was published in 2007 (1). Insufficient number of published studies since then and diversity of findings have limited the outcomes. Another systematic review on the prevalence of sexual dysfunction in Iran is going to be published. In that review, articles related to the prevalence of sexual dysfunction in severe medical patients have been included but some important papers

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about general population have not been surveyed. Also, the diversity in findings was high (2).

2. Objectives

Low quality and high diversity in methodology of prevalence studies on sexual disorders have been noted in other studies. A systematic review in 2002 on the prevalence of sexual disorders concluded that heterogeneity in methodology, study design, and case definitions made it difficult to determine a reliable overall estimate of sexual disorders (3). In 2006, a systematic review on female sexual disorders found only 11 out of 1248 related studies to meet defined standard inclusion criteria. Based on those 11 studies, it was reported that average sexual desire disorder, orgasmic disorder, arousal disorder, and sexual pain disorder in females were 64%, 35%, 31%, and 26%, respectively (4). Another review on male sexual disorders concluded that the most prevalent dysfunction in males was premature ejaculation (14% - 30%) followed by erectile dysfunction (10% - 20%) (5). A review that aimed to compare Asia with the rest of the world in terms of sexual disorder prevalence found large differences in the age of participants, definition of sexual disorder, study durations, and number of respondents (6).

Recently, research in Iran has shown a significant improvement both in quality and in quantity. Therefore, the authors decided to systematically review the recent conducted studies on the prevalence of sexual disorders in non-clinical population. If the quality and quantity of the data allowed, the authors would plan to perform a meta-analysis.

3. Study Selection

3.1. Inclusion Criteria

In this systematic review, cross-sectional studies in general population were included covering descriptive, analytical, and survey studies. The included studies described the prevalence of sexual dysfunction for male and/or for female adults in Iranian general population. Both methods, including interview and using different scales for assessing sexual dysfunction, were acceptable. Those studies conducted in general clinics or health centers were also included, but they were excluded from the review if they had been conducted on particular diseases like diabetes or schizophrenia. The rationale behind these inclusion criteria was that many clients in general medical clinics or health centers do not have severe medical disease comorbidities. Instead, most of them were patients’ caregivers or people referring for routine checkup.

3.2. Exclusion Criteria

Studies which exclusively reported the prevalence of sexual dysfunction among patients with specific medical or psychiatric diseases (e.g. diabetes, major depressive disorder, infertility, etc.) were excluded. Moreover, studies that reported sexual dysfunction in special age range, like old age, menopausal, and adolescence were also excluded.

4. Data Sources

To find appropriate studies, 5 databases including PubMed, Scopus, Google scholar, IranMedex, and Scientific Information Database (SID) were searched. Moreover, hand searching of key journals introduced by Scopus were done including “Journal of Sexual Medicine”, “Iranian Journal of Reproductive Medicine”, and “International Journal of Impotence Research”. Eventually, references cited by all the included studies were undertaken.

The key terms were: sexual dysfunction (disorder), hypoactive sexual desire disorder, low sexual desire disorder, frigidity, sexual arousal disorder, lubrication disorder, sexual pain disorder, dyspareunia, vaginismus, sexual satisfaction disorder, orgasmic disorder, anorgasmia, erectile dysfunction, impotency, premature ejaculation, and delayed ejaculation. Titles, abstracts, and MeSH term tags were used for all the key terms. The “Iran” key term was searched in titles, abstract, place of journal publication, and affiliation tags. All of the sexual dysfunction’s related key terms were combined with “OR”, and all of the combinations were combined with “AND” plus “Iran”. When searching the Persian databases, we used the exact Persian translation of the key words.

5. Data Extraction

Two independent observers extracted the data according to a researcher-designed checklist. Qualitative measures including sampling method, randomization, validity and reliability of assessment tools, and methods of data collection were extracted from the reviewed articles and reports. Because of the limited number of published papers in this field, all the papers regardless of quality level were included.

6. Results

The authors evaluated 128 published studies on the prevalence of sexual disorders in Iranian population. After reviewing abstracts and full texts, only 23 original studies were found to meet the selection criteria. The sample
population included women in 20 studies, men in 2 studies, and both genders in one study. The sample size of the studies varied from 87 to 2626.

Most of the included papers were about female sexual dysfunction. 11.5% to 33% of all women in these studies were reported to have a job and the majority of women were housewives. Additionally, the majority of female participants did not have high education. Mean age of women were reported to be 24 to 34.04 years which shows that most of the included females in this review were at their golden time of reproductive age. Almost all women in these studies were married. Additionally, it should be mentioned that studies were from different areas of Iran. Generally speaking, it seems that the results of this review could represent middle class, sexually active females in Iran. All reviewed studies had cross-sectional design and none of them evaluated the lifelong prevalence of sexual disorders. Table 1 shows some characteristics of the studies on women.

The discrepancy between different articles and studies on the prevalence of sexual disorders in women seems to be relatively high. The reported ranges of the prevalence rates for total sexual disorders, sexual desire disorder, sexual arousal disorder, and lubrication disorder were estimated to be 19.2% to 77%, 15.4% to 65.8%, 9.8% to 88.3%, and 11.9% to 71.4%, respectively. In addition, the reported prevalence rates for pain disorder, female orgasmic disorder, and sexual dissatisfaction were estimated 9% to 95.9%, 10.5% to 76%, and 2.4% to 78.5%, respectively. Table 2 shows the prevalence of sexual disorders in Iranian women.

Three studies have evaluated sexual disorder among Iranian males. Safarinejad (28) conducted a cross-sectional study on a sample of 2674 men between 20 to 70 years of age. He has evaluated erectile dysfunction among sexual disorders. Rezakhaniha and Rezakhaniha conducted a study in a general urology clinic. Although no specific diseases for participants were reported, the findings could not be generalized to general population completely (29). Yekke and Goudarzi study (15) was conducted on 175 couples (175 males and 175 females). Among 175 male participants, most of them were between 30 and 40 years old; 43% had diploma, and 39% had a job. Table 3 displays characteristics of the studies and findings about sexual dysfunction in Iranian men.

When assessing the studies on their methodological quality, many pitfalls were emerged. For example, only 5 studies reported the participants’ response rate, 7 studies commented about the validity and 10 studies about the reliability of the scales. 9 studies used weak sampling methods like convenience or voluntary sampling. In 10 studies, researchers designed questionnaires that almost all of them were without enough psychometric descriptions. Generally speaking, the quality of most of the papers was not appropriate. Because of the diversity in the quality and quantity of the included studies, meta-analysis could not perform. Therefore, the authors have tried for subclass analysis. However, the diversity was still too high.

7. Discussion

The present systematic review was performed to estimate the prevalence rate of sexual disorders in Iranian general populations (1).

The authors noted several interesting points which are mentioned below.

- Almost all subjects were married, probably because Iranian married participants feel more comfortable to talk about their sexual relationships. Another hypothesis might be that researchers were willing to respect social values.

- Women were much more evaluated about sexual disorders than men. This may be reflecting many years of cultural-male-superiority in Iran which seems to be moderating nowadays. It should also be noted that expressing sexual problems can be very distressful and tough for Iranian men due to a wrong myth that says: “a man without proper sexual performance is not really a man”. Therefore, it is assumed that researchers might be more comfortable about studying women's sexual issue.

- The descriptive characteristics of female samples on the prevalence of sexual disorders have been similar among different studies. However, the reported rates varied quite obviously, which might be also related to the different sample sizes, geographical and cultural differences, and the nature of sexual disorders especially among females.

- In most studies, systemic view to the couples did not exist. In the systemic view, sexual problems belong to the couples instead of one partner. Assessing the sexual function while assuming couples as a unit will reveal important aspects of the problems.

- In spite of recently growing numbers of studies regarding the prevalence of sexual disorders, quality of most research studies is not satisfactory. Iranian studies did not address the characteristics of non-responding groups. Furthermore, different questionnaires were used in different studies leading to more difficult comparison of the results. Problems that were observed in these studies include lack of information on duration of assessment or participants’ response rates, not mentioning validity and reliability of questionnaires, and not utilizing appropriate sampling methods. Heterogeneity in the sampling methods has made the comparisons of the results more difficult.
Table 1. Features of Studies on the Prevalence of Sexual Dysfunction in Iranian Women

| First Author | Publication Year | Study Place | Study Population | Sampling Method | Sample Size | Language | Reference |
|--------------|------------------|-------------|------------------|-----------------|-------------|----------|-----------|
| Shokrollahi et al. | 1999 | Tehran | Health centres | Simple random sampling | 300 | English | (7) |
| Safarinejad | 2006 | Tehran | General population | Stratified multistage cluster sampling | 2626 | English | (8) |
| Sobh gol and Alizadeh Charndabee | 2007 | Tabriz | Gynaecological clinics | Convenience sampling | 319 | English | (9) |
| Blourian and Ganjloo | 2007 | Sahzivar | General clinics | Convenience sampling | 366 | Persian | (10) |
| Khalilian et al. | 2007 | Sari | Medical school | Census | 87 | English | (11) |
| Bakooyi et al. | 2007 | Babol | Health centres | Convenience sampling | 318 | Persian | (12) |
| Goshtasebi et al. | 2009 | Kohkulooyeh | General population | Stratified multistage sampling | 1456 | English | (13) |
| Vahdaninia et al. | 2009 | Kohgilouyeh-Bayer-Ahmad | General population | Stratified multi stage area sampling | 1540 | English | (14) |
| Yekkleh and Goudarzi | 2009 | Ghazvin | General population | Stratified random sampling | 175 | Persian | (15) |
| Salmani et al. | 2010 | Hesarak | General clinics | Convenience sampling | 1200 | Persian | (16) |
| Hoseini Tabagholdehi and Hoseini | 2011 | Sari | Health centres | Stratified multi stage random sampling | 899 | Persian | (17) |
| Najafabaday et al. | 2011 | Hesarak | Health centres | Simple quasi-random sampling | 1200 | English | (18) |
| Bahrami et al. | 2012 | Dezfool | Health centres | Convenience sampling | 250 | Persian | (19) |
| Mazinani et al. | 2012 | Tehran | General clinics | Stratified multistage sampling | 405 | Persian | (20) |
| Ramezani et al. | 2012 | Tehran | Health centres | Multistage random sampling | 120 | Persian | (21) |
| Abdoly and Pournousavi | 2013 | Tabriz, Jahrom | General population | Voluntary sampling | 270 | English | (22) |
| Ghanbarzadeh et al. | 2013 | Birjand | General population | Stratified systematic random sampling | 821 | English | (23) |
| Jaafarpour et al. | 2013 | Ilam | Health centres | Multiple stage random sampling | 400 | English | (24) |
| Arasteh et al. | 2014 | Sanandaj | Gynaecological clinic | Convenience sampling | 196 | English | (25) |
| Ramezani Tehrani et al. | 2014 | Qazvin, Golestan, Kermanshah, Hormozgan | General population | Stratified, multistage probability cluster sampling | 784 | English | (26) |
| Jafarzadeh Esfehani et al. | 2016 | Sahzivar | Health centres | Convenience sampling | 264 | English | (27) |

- Values are expressed as numbers (- means no data).

- Health centres are a part of Iran’s governmental services which are distributed all over the country regarding the population concentration. Many services including vaccination and contraception are given to referees free of charge.

Looking at studies in other regions of the world shows that the diversity in reported prevalence of sexual disor-
Table 2. The Prevalence of Sexual Dysfunctions in Iranian Women

| First Author       | Measure | Range (Mean) Age of Participants | Total Sexual Dysfunction | Sexual Desire Disorder | Sexual Arousal Disorder | Disorder of Inhibition | Vaginismus | Pain/Dyspareunia | Female Organic Disorder | Sexual Dissatisfaction |
|--------------------|---------|----------------------------------|--------------------------|------------------------|-------------------------|------------------------|-------------|-----------------|--------------------------|----------------------|
| Shokrollahi        | BISF-W  | 18 - 52 (31.3)                  | 38                       | 28                     | 17                      | -                      | 9           | 9               | 25                       | -                    |
| Salariehnejr       | FSFI    | -                               | 31.5                     | 35                     | 30                      | -                      | 26.7        | 37              | -                        | -                    |
| Sobhgoz           | RDQ     | 15 - 49 (33.8)                  | -                        | -                      | -                       | -                      | 54.5        | -               | -                        | -                    |
| Blourian           | RDQ     | -                               | 3.6                      | -                      | 9.8                     | -                      | -           | 9.8             | -                        | -                    |
| Khalilian          | FSFI    | Mostly 22 - 25                  | -                        | 16.32                  | 32.18                   | -                      | 47.1        | 41.3            | 19.5                     | -                    |
| Bakosey            | RDQ     | 18 - 53 (28 )                  | 19.2                     | 40.4                   | 40.3                    | 12                     | 19.7        | 18.6            | 11.3                     | -                    |
| Ghorbadi           | RDQ     | 15 < (36.04 ± 9.2)             | 52.6                     | 19.3                   | 18.6                    | 11.9                   | 18.2        | 26.3            | 19.4                     | -                    |
| Valhalinia         | RDQ     | (32.4 (9.3)                    | 51                       | 34.1                   | 35.2                    | 20                     | -           | 34.8            | 38.0                     | 38.4                 |
| Yekkeh Fallah      | FSFI    | -                               | -                        | -                      | -                       | -                      | -           | -               | -                        | -                    |
| Salemani           | FSFI    | 15 - 50 (29.9 ± 7.9)           | 20.5                     | 36                     | 17.5                    | -                      | -           | 20.5            | 24.3                     | -                    |
| Hosseini           | RDQ     | 16 - 53 (38.37 ± 6.06)         | 45.2                     | 18.6                   | 35.5                    | 39.8                   | -           | 47.3            | 42.2                     | 2.4                  |
| Tahaghdehi         | RDQ     | -                               | -                        | -                      | -                       | -                      | -           | -               | 24.3                     | -                    |
| Jaduyon Najafi      | FSFI    | -                               | -                        | -                      | -                       | -                      | -           | -               | -                        | -                    |
| Bahrami            | FSFI    | 20 - 55 (34.7 ± 6.4)           | 64.6                     | -                      | -                       | -                      | -           | -               | -                        | -                    |
| Mottanai           | SQP     | 17 - 56                        | 31                       | 33                     | 16.5                    | -                      | -           | 41.5            | 21                       | -                    |
| Ramezani, N        | FSFI    | 18 - 53 (30.29 ± 4.33)         | 64.2                     | 16.0                   | 27                      | -                      | 36.7        | 19.7            | 20.8                     | -                    |
| Abdoly             | SSS-W; FSFI | 18 - 45 (24.2 ± 4.2) | 70                       | 64                     | -                       | -                      | 16.7        | -               | -                        | -                    |
| Ghonbardezeh       | RDQ     | 15 - 73 (51.5 ± 8.0)           | 57.4                     | -                      | 15.4                    | -                      | -           | 9.4             | 10.1                     | 38                   |
| Jafarpour          | FSFI-interview | 18 - 50 (42.4 ± 2.3) | 65.2                     | 45.3                   | 37.5                    | 41.2                   | -           | 42.5            | 42.0                     | 44.5                 |
| Arameh             | FSFI    | 15 - 55 (34.2 ± 4.5)           | 77                       | 65.8                   | 48.3                    | 71.4                   | -           | 95.9            | 76                       | 43.4                 |
| Ramezani Tehranian | FSFI    | 18 - 65 (51.55 ± 9.94)         | 37.4                     | 35.6                   | 30.9                    | 18.9                   | -           | 54.6            | 27.3                     | 15.2                 |
| Jalilzadeh Esfehan | FSFI    | 15 - 42 (34.2 ± 10.27)         | 62.1                     | 49.2                   | 41.2                    | 165                    | -           | 35.2            | 38.6                     | 26.1                 |

Abbreviations: BISF-W, brief index of sexual functioning for woman; FSFI, female sexual function index; RDQ, researcher designed questionnaire; SSS-W, sexual satisfaction scale for women. 
*a Values are expressed as No. and %; (- means no data).

ders is also notable. Erectile dysfunction was estimated from 15% in 40 - 49 year old males to 71% in 70 - 79 year- old males in Japan (30) and from 7% in 40 - 49 years to 49% in 60 - 70 years of age in Thailand (31). The prevalence rate of erectile dysfunction was lower in USA (from 1% in 40 - 49 years to 44% in 70 - 79 years) (32). A cross-sectional study that compared the prevalence of erectile dysfunction among 40 to 70 year-old males in 4 countries reported different rates: Brazil 15.5%, Italy 17.2%, Japan 34.5%, and Malaysia 22.4% (33). The prevalence rate of premature

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ejaculation was reported 12-29.7% in different parts of Asia (34). The diversity in reported prevalence of female sexual disorders was also high. For instance, the prevalence rate of female desire disorder was estimated to be 10 to 55% across different studies (5, 35-37). The prevalence of arousal and lubrication problems was estimated to be 8 to 40.9% (36). Similarly, the prevalence rate of female orgasmic disorder was reported to be 16.9 to 42.7% (5, 6, 37, 38), and some degrees of orgasmic disorder had prevalence rate up to 80% (39). The prevalence of pain disorders including dyspareunia was noted to be from 1 to 42.9% in different reports around the world (39).

The present review was done when DSM-IV-TR and ICD-10 were the standards of diagnosis. It should be noted that DSM-5 has been available since mid-2013 (40). In DSM-5, the "sexual aversion disorder" has been excluded from the list of diagnosis. Our study could not evaluate the prevalence of "sexual aversion disorder" due to scarce data in the literature. Additionally, in DSM-5, female desire and arousal dysfunctions have been merged and considered under the category of "female sexual Interest/Arousal disorder". Both spontaneous and responsive desires are addressed in DSM-5. Moreover, vaginismus and dyspareunia are noted under the category of "Genito-pelvic Pain/Penetration disorder" in DSM-5. These merges were probably done because of difficulties in distinguishing the two primary diagnoses. Considering the heterogeneity of the prevalence rates in Table 2 the changes in DSM-5 diagnosis seem to be reasonable (40).

The present study encountered some limitations that are mentioned as follows. Due to the limitation of the local library facilities as well as difficulty and complexity of hand searching, the authors were not able to review grey literatures. Additionally, because of the diversity in the quality and quantity of the findings, a meta-analysis was not done.

Generally speaking, several factors including duration of assessment in cross-sectional studies, age of samples, target population, method of sampling as well as types of scales used for assessing patients, and the culture and education of selected samples would directly affect the reported prevalence rates. At least some part of the diversity noticed in evaluating the prevalence rates might be due to the methodological diversity.

7.1. Conclusions

Despite the large diversity in the findings of this review, it seems that the prevalence of sexual disorders is relatively high among Iranian population. Clinically, sexual disorders can significantly affect public health. Therefore, a careful planning for prevention and treatment of these disorders should be performed. Applying standard methods of evaluation in future studies by utilizing the stratified multi-stage random sampling would help obtain more reliable results in patients with sexual disorders. Moreover, educating couples, screening sexual disorders by primary health care providers, training the specialists through planning and establishing a clinical psycho-sexology fellowship programs are also highly recommended.

Footnotes

Authors’ Contribution: Abbas Ali Nasehi, Firoozeh Raisi and Seyyed Taha Yahyavi conceived and designed the study. Seyyed Taha Yahyavi, Mozghan Amini and Padideh Ghaeli acquired the data. Seyyed Taha Yahyavi and Fattaneh Abdi performed interpretation and analysis of the data. Seyyed Taha Yahyavi, Firoozeh Raisi, Padideh Ghaeli and Mozghan Amini drafted the manuscript. Jalil Arabkhahermand and Soghrat Faghihzadeh revised the manuscript critically for important intellectual content. Zahra Abbasi and Soghrat Faghihzadeh performed statistical analysis. Fattaneh Abdi and Jalil Arabkhahermand performed administrative, technical, and material support. Abbas Ali Nasehi and Firoozeh Raisi involved in the study supervision. All the authors read and approved the final manuscript.

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