Iran J Psychiatry Behav Sci. 2017 December; 11(4):e7643. doi: 10.5812/ijpbs.7643.

Published online 2017 June 20. **Review Article**

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

Abbas Ali Nasehi,[1] Firoozeh Raisi,[2] Padideh Ghaeli,[3,4] Mozhgan Amini,[5] Seyyed Taha Yahyavi,[6,*] Jalil Arabkheradmand,[7] Soghrat Faghihzadeh,[8] Zahra Abbasi,[9] and Fattaneh Abdi[10]

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

[*]*Corresponding author*: Seyyed Taha Yahyavi, Roozbeh Hospital, South Karegar, Tehran, IR Iran. Tel: +98-9126091570, Fax: +98-21554111811, E-mail: st-yahyavi@sina.tums.ac.ir

Received 2016 June 22; **Revised** 2016 December 23; **Accepted** 2017 March 22.

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

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[a]	Language	Reference
Shokrollahi et al.	1999	Tehran	Health centres[b]	Simple random sampling	300	English	(7)
Safarinejad	2006	Tehran	General population	Stratified multistage cluster sampling	2626	English	(8)
Sobhgol and Alizadeli Charndabee	2007	Tabriz	Gynaecological clinics	Convenience sampling	319	English	(9)
Blourian and Ganjloo	2007	Sabzevar	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[b]	Convenience sampling	318	Persian	(12)
Goshtasebi et al.	2009	Kohkilooyeh	General population	Stratified multistage sampling	1456	English	(13)
Vahdaninia et al.	2009	Kohgilouyeh-Boyer-Ahmad	General population	Stratified multi stage area sampling	1540	English	(14)
Yekkeh 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 Tabaghdehi and Hoseini	2011	Sari	Health centres[b]	Stratified multi stage random sampling	899	Persian	(17)
Najafabady et al.	2011	Hesarak	Health centres[b]	Simple quasi-random sampling	1200	English	(18)
Bahrami et al.	2012	Dezfool	Health centres[b]	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[b]	Multistage random sampling	120	Persian	(21)
Abdoly and Pourmousavi	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	Sabzevar	Health centres[b]	Convenience sampling	264	English	(27)

[a] Values are expressed as numbers (- means no data).
[b] 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.

- Prevalence rates of sexual disorders presented in our study are in a wide range.

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[a]

First Author	Measure	Range (Mean) Age of Participants	Total Sexual Dysfunction	Sexual Desire Disorder	Sexual Arousal Disorder	Disorder of Lubrication	Vaginismus	Pain/Dyspareunia	Female Orgasmic Disorder	Sexual Dissatisfaction
Shokrollahi	BISF-W	16 - 52 (31.3)	38	28	17	-	8	9	25	-
Safarinejad	FSFI	-	31.5	35	30	-	-	26.7	37	-
Sobhgol	RDQ	15 - 49 (33.8)	-	-	-	-	-	54.5	-	-
Blourian	RDQ	-	-	-	9.8	-	-	9.8	-	-
Khalilian	FSFI	Mostly 22 - 25	-	56.32		32.18	-	47.1	41.3	19.5
Bakooyi	RDQ	18 - 53 (28)	19.2	48.4	40.3	12	-	19.7	18.6	11.3
Goshtasbi	RDQ	15 < (34.04 ± (9.2))	52.4	19.3	18.6	11.9	-	18.2	21.3	19.4
Vahdania	RDQ	(33.2 (9.4))	51	34.1	33.2	21	-	31.8	38.0	36.4
Yekkeh Fallah	RDQ	20 - 50	93.1	62.4	-	56/5	-	46/8	54/3	78.5
Salmani	FSFI	15 - 65 (29.9 ± 7.8)	20.5	36	17/5	-	-	26/5	26.3	-
Hoseini Tabaghdehi	FSFI	16 - 53 (28.37 ± 6.06)	45.2	39.6	35.5	39.8	-	47.3	42.7	2.4
Tadayon Najafabady	FSFI	-	-	-	-	-	-	-	26.3	-
Bahrami	FSFI	20 - 55 (34.7 ± 6.4)	64.6	-	-	-	-	-	-	-
Mazinani	SFQ	17 - 56	31	33	16.5	-	-	45.5	25	-
Ramezani.N	FSFI	18 - 35 (30.29 ± 4.33)	64.2	30	27	-	-	36.7	16.7	20.8
Abdoly	SSS-W; FSFI	18 - 45 (24.2 ± 4.4)	70	61	-	-	-	16.7	-	-
Ghanbarzadeh	RDQ	15 - 72 (31.5 ± 9.1)	-	15.4	-	-	-	9.4	10.5	39
Jaafarpour	FSFI+ interview	18 - 50 (28.2 ± 2.3)	46.2	45.3	37.5	41.2	-	42.5	42.0	44.5
Arasteh	FSFI	15 - 55 (31.6 ± 8.4)	77	65.8	88.3	71.4	-	95.9	76	43.4
Ramezani Tehrani	FSFI	18 - 45 (33.55 ± 6.94)	27.4	35.6	39.9	18.9	-	56.1	27.3	15.2
Jafarzadeh Esfehani	FSFI	15 - 62 (32.2 ± 10.27)	62.1	49.2	43.2	36%	-	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; SFQ, sexual function questionnaire; SSS-W, sexual satisfaction scale for women.
[a] Values are expressed as No. and %; (- means no data).

Table 3. Features of Studies on the Epidemiology and Prevalence of Sexual Dysfunction in Iranian Men[a]

First Author	Publication Year	Study Place	Study Population	Sampling Method	Sample Size	Measure	Range (Mean) Age of Participants	Total Sexual Dysfunction	Sexual Desire Disorder	Erectile Dysfunction	Premature Ejaculation	Sexual Dissatisfaction	Reference
Safarinejad	2003	28 counties	General population	Stratified multiple stage sampling	2674	Interview + RDQ	20 - 70 (41.1)	-	-	18.8	-	-	(28)
Rezakhaniha and Rezakhaniha	2007	Tehran	General urology clinic	Convenience sampling	150	RDQ	-	-	4.7	22.7	39.3	-	(29)
Yekkeh and Goudarzi	2009	Qazvin	General population	Stratified random sampling	175	RDQ	20 - 50	80.6	57%	27	43/4	59.8	(15)

Abbreviation: RDQ, researcher designed questionnaire.
[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

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, Mozhgan 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 Mozhgan Amini drafted the manuscript. Jalil Arabkheradmand and Soghrat Faghihzadeh revised the manuscript critically for important intellectual content. Zahra Abbasi and Soghrat Faghihzadeh performed statistical analysis. Fattaneh Abdi and Jalil Arabkheradmand 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.

Declaration of Interest: None.

Funding/Support: The study was funded by a grant from THUMS (40 million Rials).

References

1. Basirnia A, Sahimi-Izadian E, Arbabi M, Bayay Z, Vahid-Vahdat S, Noorbala AA, et al. Systematic review of prevalence of sexual disorders in Iran. *Iran J Psychiatr*. 2007;**2**(4):151–6.
2. Ramezani MA, Ahmadi K, Ghaemmaghami A, Marzabadi EA, Pardakhti F. Epidemiology of Sexual Dysfunction in Iran: A Systematic Review and Meta-analysis. *Int J Prev Med*. 2015;**6**:43. doi: 10.4103/2008-7802.157472. [PubMed: 26097672].
3. Dunn KM, Jordan K, Croft PR, Assendelft WJ. Systematic review of sexual problems: epidemiology and methodology. *J Sex Marital Ther*. 2002;**28**(5):399–422. [PubMed: 12378842].
4. Hayes RD, Bennett CM, Fairley CK, Dennerstein L. What can prevalence studies tell us about female sexual difficulty and dysfunction?. *J Sex Med*. 2006;**3**(4):589–95. doi: 10.1111/j.1743-6109.2006.00241.x. [PubMed: 16839314].
5. Derogatis LR, Burnett AL. The epidemiology of sexual dysfunctions. *J Sex Med*. 2008;**5**(2):289–300. doi: 10.1111/j.1743-6109.2007.00668.x. [PubMed: 18004994].
6. Lewis RW. Epidemiology of sexual dysfunction in Asia compared to the rest of the world. *Asian J Androl*. 2011;**13**(1):152–8. doi: 10.1038/aja.2010.108. [PubMed: 21076440].
7. Shokrollahi P, Mirmohamadi M, Mehrabi F, Babaei G. Prevalence of sexual dysfunction in women seeking services at family planning centers in Tehran. *J Sex Marital Ther*. 1999;**25**(3):211–5. doi: 10.1080/00926239908403995. [PubMed: 10407793].
8. Safarinejad MR. Female sexual dysfunction in a population-based study in Iran: prevalence and associated risk factors. *Int J Impot Res*. 2006;**18**(4):382–95. doi: 10.1038/sj.ijir.3901440. [PubMed: 16395324].

9. Sobhgol SS, Alizadeli Charndabee SM. Rate and related factors of dyspareunia in reproductive age women: a cross-sectional study. *Int J Impot Res*. 2007;**19**(1):88–94. doi: 10.1038/sj.ijir.3901495. [PubMed: 16791280].
10. Bolourian Z, Ganjloo J. Evaluating sexual dysfunction and some related factors in women attending Sabzevar Health Care Centers. *J Reprod Infertil*. 2007;**8**(2). (Persian).
11. Khalilian AR, Masoudzadeh A, Mohseni Bandbei MA. Frequency of sexual dysfunction in female students at Mazandaran Medical Sciences University. *R J Biol Sci*. 2007;**2**(2):143–6.
12. Bakooyi F, Omidvar S, Nasiri F. Evaluation the frequency of sexual dysfunction and some related factors in married women in Babol. *J Babol Univ Med Sci*. 2007;**9**(4):59–64. (Persian).
13. Goshtasebi A, Vahdaninia M, Rahimi Foroshani A. Prevalence and potential risk factors of female sexual difficulties: an urban Iranian population-based study. *J Sex Med*. 2009;**6**(11):2988–96. doi: 10.1111/j.1743-6109.2009.01398.x. [PubMed: 19627465].
14. Vahdaninia M, Montazeri A, Goshtasebi A. Help-seeking behaviors for female sexual dysfunction: a cross sectional study from Iran. *BMC Womens Health*. 2009;**9**:3. doi: 10.1186/1472-6874-9-3. [PubMed: 19250522].
15. Yekeh FL, Goudarzi MR. Prevalence of sexual dysfunction and related factors among married couples in Qazvin. *J Qazvin Univ Med Sci*. 2009;**13**(1):10. (Persian).
16. Salmani Z, Tadayon M, Alavifazel K. Prevalence and etiology of orgasm disorders in women. *J Kermanshah Univ Med Sci*. 2010;**14**(1). (Persian).
17. Hoseini Tabaghdehi M, Hoseini F. The relative frequency of sexual dysfunction and some related factors in the women referred to the health centers of Sari city (2006). *J Mazandaran Univ Med Sci*. 2012;**22**(91):102–7. (Persian).
18. Najafabady MT, Salmani Z, Abedi P. Prevalence and related factors for anorgasmia among reproductive aged women in Hesarak, Iran. *Clinics*. 2011;**66**(1):83–6. doi: 10.1590/S1807-59322011000100015.
19. Bahrami N, Valizadeh S, Bahrami S. Sexual dysfunctions and associated factors in women of reproductive age. *J Shahid Beheshti Sch Nurs Midwif*. 2012;**21**:75. (Persian).
20. Mazinani R, Akbari M, Kaskian A, Kashanian M. Evaluation of prevalence of sexual dysfunctions and its related factors in women. *Razi J of Med Sci*. 2012;**19**(105):59–66. (Persian).
21. Ramezani N, Dolatian M, Shams J, Alavi H. The relationship between self-esteem and sexual dysfunction and satisfaction in women. *Arak Med Univ J*. 2012;**14**(6):57–65. (Persian).
22. Abdoly M, Pourmousavi L. The relationship between sexual satisfaction and education levels in women. *Int J Women's Health Reproduction Sci*. 2013;**1**(2):39–44. doi: 10.15296/ijwhr.2013.07.
23. Ghanbarzadeh N, Nadjafi-Semnani M, Ghanbarzadeh MR, Nadjfai-Semnani A, Nadjfai-Semnani F. Female sexual dysfunction in Iran: study of prevalence and risk factors. *Arch Gynecol Obstet*. 2013;**287**(3):533–9. doi: 10.1007/s00404-012-2604-z. [PubMed: 23111907].
24. Jaafarpour M, Khani A, Khajavikhan J, Suhrabi Z. Female sexual dysfunction: prevalence and risk factors. *J Clin Diagn Res*. 2013;**7**(12):2877–80. doi: 10.7860/JCDR/2013/6813.3822. [PubMed: 24551663].
25. Arasteh M, Shams Alizadeh N, Ghaderi E, Farhadifar F, Nabati R, Gharibi F. Survey of the prevalence of sexual dysfunctions in Kurdish women. *J Sex Marital Ther*. 2014;**40**(6):503–11. doi: 10.1080/0092623X.2013.776653. [PubMed: 24228699].
26. Ramezani Tehrani F, Farahmand M, Simbar M, Malek Afzali H. Factors associated with sexual dysfunction; a population based study in Iranian reproductive age women. *Arch Iran Med*. 2014;**17**(10):679–84. [PubMed: 25305767].
27. Jafarzadeh Esfehani R, Fazel N, Dashti S, Moshkani S, Haghighi Hasanabad F, Foji S, et al. Female Sexual Dysfunction and its Associated Risk Factors: An Epidemiological Study in the North-East of Iran. *J Midwifery Reprod Health*. 2016;**4**(1):498–505. doi: 10.22038/JMRH.2016.6041.
28. Safarinejad MR. Prevalence and risk factors for erectile dysfunction in a population-based study in Iran. *Int J Impot Res*. 2003;**15**(4):246–52. doi: 10.1038/sj.ijir.3901024. [PubMed: 12934051].
29. Rezakhaniha B, Rezakhaniha MR. A survey of prevalence of sexual disorders and risk factors in patient who referred in urology ward in 501 hospital 2004-05. *Ann Mil Health Sci Res*. 2007;**4**(4):1041–5.
30. Masumori N, Tsukamoto T, Kumamoto Y, Panser LA, Rhodes T, Girman CJ, et al. Decline of sexual function with age in Japanese men compared with American men–results of two community-based studies. *Urology*. 1999;**54**(2):335–44. discussion 344-5. [PubMed: 10443735].
31. Kongkanand A. Prevalence of erectile dysfunction in Thailand. Thai Erectile Dysfunction Epidemiological Study Group. *Int J Androl*. 2000;**23 Suppl 2**:77–80. [PubMed: 10849502].
32. Panser LA, Rhodes T, Girman CJ, Guess HA, Chute CG, Oesterling JE, et al. Sexual function of men ages 40 to 79 years: the Olmsted County Study of Urinary Symptoms and Health Status Among Men. *J Am Geriatr Soc*. 1995;**43**(10):1107–11. [PubMed: 7560700].
33. Nicolosi A, Moreira EJ, Shirai M, Bin Mohd Tambi MI, Glasser DB. Epidemiology of erectile dysfunction in four countries: cross-national study of the prevalence and correlates of erectile dysfunction. *Urology*. 2003;**61**(1):201–6. [PubMed: 12559296].
34. Ho CC, Singam P, Hong GE, Zainuddin ZM. Male sexual dysfunction in Asia. *Asian J Androl*. 2011;**13**(4):537–42. doi: 10.1038/aja.2010.135. [PubMed: 21643001].
35. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: prevalence and predictors. *JAMA*. 1999;**281**(6):537–44. [PubMed: 10022110].
36. Oksuz E, Malhan S. Prevalence and risk factors for female sexual dysfunction in Turkish women. *J Urol*. 2006;**175**(2):654–8. discussion 658. doi: 10.1016/S0022-5347(05)00149-7. [PubMed: 16407018].
37. Ponholzer A, Roehlich M, Racz U, Temml C, Madersbacher S. Female sexual dysfunction in a healthy Austrian cohort: prevalence and risk factors. *Eur Urol*. 2005;**47**(3):366–74. discussion 374-5. doi: 10.1016/j.eururo.2004.10.005. [PubMed: 15716203].
38. Elnashar AM, El-Dien Ibrahim M, El-Desoky MM, Ali OM, El-Sayd Mohamed Hassan M. Female sexual dysfunction in Lower Egypt. *BJOG*. 2007;**114**(2):201–6. doi: 10.1111/j.1471-0528.2006.01106.x. [PubMed: 17305892].
39. Lewis RW, Fugl-Meyer KS, Corona G, Hayes RD, Laumann EO, Moreira EJ, et al. Definitions/epidemiology/risk factors for sexual dysfunction. *J Sex Med*. 2010;**7**(4 Pt 2):1598–607. doi: 10.1111/j.1743-6109.2010.01778.x. [PubMed: 20388160].
40. *Diagnostic and statistical manual of mental disorders 5th edition American Psychiatric Publishing*. USA: Arlington; 2013.American Psychiatric Association.