The prevalence of sexual violence during pregnancy in Iran and the world: a systematic review and meta-analysis

Jafar Bazyar¹, Hamid Safarpour², Salman Daliri³,*, Arezoo Karimi³, Meysam Safi Keykaleh⁴, Mohammad Bazyard

¹ Research Center in Emergency and Disaster Health, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
² Department of Health in Disasters and Emergencies, School of Health, Safety and Environment, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
³ Department of Epidemiology, Faculty of Public Health, Ilam University of Medical Sciences, Ilam, Iran.
⁴ Department of Health Education and Promotion, Faculty of Public Health, Ilam University of Medical Sciences, Ilam, Iran.

Abstract:
Background: Domestic violence during pregnancy is a public health crisis, because it affects both mother and fetus simultaneously, resulting in irreversible consequences for mothers and their newborns. This study was performed to determine the prevalence of sexual violence during pregnancy in the world and Iran as meta-analysis.

Methods: This study is a meta-analysis on the prevalence of sexual violence during pregnancy in the world and Iran that was conducted on Persian and English published articles up to 2015. To this end, through searching the information by key words and their compounds at SID, Medlib, Irandoc, Google scholar, Pubmid, ISI, Iranmedex, Scopus and Magiran, all related articles were extracted independently by two trained researchers. The results of studies analyzed using the STATA and Spss16 software.

Results: In the initial searching of 167 articles, 33 articles related to Iran, 40 articles related to other parts of the world and totally 73 articles met inclusion criteria for study. The prevalence of sexual violence during pregnancy were estimated in the world 17% (CI95%:15% -18%) and in Iran 28% (CI95%:23% -32%).The prevalence of sexual violence during pregnancy in Iran is 11 percent more than the world.

Conclusions: According to the present meta-analysis results, the prevalence of sexual violence during pregnancy in Iran is high. Given that sexual violence during pregnancy causes damage to the mother and infant, it is recommended that the relevant authorities with the implementation of intervention and educational programs reduce the prevalence of sexual violence during pregnancy.

* Corresponding Author at:
Salman Daliri: Master of Epidemiology, Department of Epidemiology, Ilam University of Medical Sciences, Ilam, Iran.
Telephone: +989179272507, Fax: 9831322805; Email: daliri.salman@yahoo.com (Daliri S.).

This is an open-access article distributed under the terms of the Creative Commons Attribution 3.0 License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
Sexual violence refers to any anti-social behavior that covers touching to sexual assault. This type of violence may occur in the area of private life, marriage and family.1,2 Sexual violence occurs in all ages, genders, ethnicities, educational fields and socioeconomic groups and is increasingly on the rise as one of the most important public health problems.3-5

According to the World Health Organization (WHO), 35% of women in the world experience physical or sexual violence.6 The prevalence of sexual violence in countries with high income is between 3.4 to 11 percent.7 In Turkey 33.3% (2003),8 Saudi Arabia 6.9% (2011),9 Lebanon 26.2% (2007),10 Brazil 3% (2010)11 and Mexico 11.3% (2011)12 of women were sexually abused during pregnancy. In the study conducted in Iran, the prevalence of sexual violence during pregnancy was estimated to be 25.3% (2015),13 which is estimated in Iranian provinces such as Western Azerbaijan 30.2% (2013),14 Shiraz 22.3% (2008),15 Ahvaz 9.3% (2011)16 and Karaj 3.3% (2012)17 of the prevalence of sexual violence was observed during pregnancy.

Women subjected to sexual violence get involved in psychological, nervous and emotional trauma. That affects their whole behavior toward males. Sometimes these women have coldness and depression in their sex lives and never forget hate and fear of man in their family and social life.18,19 Pregnancy, for various reasons, such as loss of sexual relations, misconceptions about pregnancy and abnormal sensation of husband about the pregnancy can be a point to start or intensify sexual violence against women.20 The woman’s feelings during pregnancy, vulnerability of women in this period and increasing economic pressure can be effective factors to increase violence during pregnancy.21

Sexual violence can lead to increased incidence of complications related to pregnant women such as acute injuries, Premature rupture of membrane dysfunction, lasting disabilities, eating disorders, sleep disorders, stress disorders, depression, substance abuse and suicide.22 Adverse pregnancy outcomes associated with sexual violence is directly caused by sexual or physical trauma or indirectly, such as inserting a stress leads to miscarriage, premature delivery, low-weight birth, premature rupture of membranes, intrauterine growth restriction, perinatal mortality, cesarean delivery and low Apgar score.23-25 For this reason, it is recommended to screen the women for sexual violence at three-month intervals during pregnancy and postpartum.26

Sexual violence during pregnancy adversely affects the pregnant women and fetuses that lead to irreparable consequences resulting in huge costs to the health care system.25 Knowing the prevalence of sexual violence during pregnancy in the country helps politicians to understand the extent of the problem that can be considered as the first step towards the implementation of interventions for prevention and treatment. The prevalence of sexual violence during pregnancy in different parts of the world and Iran have been reported sporadically and comprehensive information about the general prevalence in the world and Iran is not available to solve this health problem with more appropriate view. This study aimed to determine the prevalence of sexual violence during pregnancy as a systematic review and meta-analysis in the world and Iran in order to estimate the prevalence of this phenomenon in the country and to compare it with the global average, through which the extent of the problem can be realized and appropriate approaches can be adopted to prevent and reduce the incidence of it.

Methods

This study was a systematic review and meta-analysis on the prevalence of sexual violence during pregnancy in the world and Iran. The results of this study was obtained based on articles published in Persian and English local and international magazines. In this study, all articles published since 1997 by the end of 2015 were selected during a search in databases of Medlib, SID Scopus, ISI Web of Science, Pubmed, Cochrane, Google scholar, IranDoc, Magiran, Iranmedex. Articles were searched using the Persian keywords of prevalence of violence during pregnancy, sexual violence and domestic violence in Iran and the world individually and combined. In the foreign databases, the words, Violence during pregnancy, Sexual violence, Domestic violence were used.

First, all the papers entitled as sexual violence during pregnancy were collected and after searching completion a list of abstracts was prepared. After hiding the articles information such as author’s name, journal name and etc., full text articles were available to the two expert and trained researchers. Each paper was evaluated independently by them and papers were rejected by both, the reason was mentioned and in case of disagreement between them the article was judged by the third referee. To check the quality of the articles the Strobe check list was used (studies in epidemiology Strengthening the reporting of observation-
This check list has 22 parts that rating was based on the importance of each part according to the study. Final score of the check list was 30 that, the minimum acceptable rating was 15. Required data were extracted using pre-prepared check list containing the sample size, the location, the time of study, type of study and the prevalence of sexual violence.

**Inclusion and exclusion criteria of the studies**

All studies conducted in English and Persian languages in Iran and the world were about sexual violence during pregnancy in all pregnant women and after assessment process papers with the quality rate higher than 20 have met the inclusion criteria. Studies were excluded if they had received score of less than 20 points after the assessment, if were conducted in specific groups (e.g., women with certain diseases, etc.), if did not have sufficient samples, if they had discussed about sexual violence.

**Study Selection**

All articles related to the prevalence of sexual violence during pregnancy in the world were included. Accordingly, 167 articles related to sexual violence during pregnancy were found, 21 articles due to replication, 59 articles due to non-relevance were excluded. After reviewing the abstracts, 14 articles lacking the required information and appropriate quality were excluded. Finally, 73 articles met the inclusion criteria and were included into meta-analysis (Figure 1).

**Statistical analysis**

To combine prevalence rates according to the standard deviation of the studies, mean weight was

---

**Figure 1: Flowchart of articles entry and selection process for systematic review and meta-analysis.**
used and considering the exponential distribution of the prevalence, Poisson distribution was considered and Kernel Smoothing method was used for drawing the diagrams.

If there was significant heterogeneity among studies, the random effects model was used; otherwise, the fixed-effects model was used. Also if the confidence interval related to prevalence rate was short, then more weight would be given to specificity.

$\chi^2$ index and Cochran test were used to examine the heterogeneity between the results, Egger’s test was used for publication bias, the relationship between the effect size and the year of study with a prevalence rate of meta-regression and for data analysis software STATA (11.1) and SPSS-16 were used.

**Result**

In the initial search, of 167 articles, 73 articles with sample size of 156209 people met the inclusion criteria,\textsuperscript{11-16, 28-85} which contains five case-control studies, 10 cohort studies, 56 cross-sectional studies and 2 meta-analysis studies (Table 1). Average number of samples per study was 2140 people. Articles related to the research subject had been carried out in the period between 1999 and 2015. According to the results of a meta-analysis of studies, the prevalence of sexual violence in Iran was 28% (CI95%: 32% -23%) and in the world it was estimated 17% (CI95%: 18% -15%) (Figure 2).

Among the studies reviewed in Iran, the highest prevalence of sexual violence during pregnancy was related to the study of Dolatian et al. in the city of Marivan in 2011, with the prevalence of 89.2%\textsuperscript{25} and the lowest rate is related to the study conducted by Hassan et al. in city Bonab in 2010 with the prevalence of 1.5%\textsuperscript{26}. In studies conducted in other countries, the highest rate is related to Yong Zhang of China in 2007, with the prevalence of 43.8%\textsuperscript{62} and the lowest is related to Hafþrún Finnbogadóttir in Sweden in 2013, with a prevalence rate of 0.1%\textsuperscript{33}. The world's highest and lowest prevalence was respectively related to the study of Doolatan et al. in 2011\textsuperscript{25} and Hafþrún Finnbogadóttir in 2007.\textsuperscript{33}

The relationship between the prevalence of sexual violence during pregnancy and the year of the study has been investigated in Figure 3-a. Considering the negative slope of meta-regression diagram ($p=0.393$) it can be concluded that there is no significant relationship between the years of study and sexual violence. The investigation of the relationship between the sample size and prevalence rate also showed that (Figure 3-b) there is no significant relationship between sample size and prevalence rate ($p=0.319$). Because it is possible that the studies with more sample size report higher prevalence rate and vice versa. Presented in graphs, circles show the weight of the studies, and the larger the circle, the greater the sample size.

**Discussion**

The results of a systematic and meta-analysis review of 73 articles related to the subject of research including 32 studies in Iran with the sample number of 41289 during 2002 and 2015 had indicated that the prevalence of sexual violence during pregnancy in Iran is 28 percent. In the study by Niazi et al (2015) conducted as meta-analysis in Iran reported the prevalence of sexual violence in Iran 21% which is less than the value estimated in the present study.\textsuperscript{1,12} In a study conducted in Turkey (2011) the prevalence of sexual violence during pregnancy was estimated 2.5% which has a low prevalence compared to our country.\textsuperscript{24} The prevalence of sexual violence during pregnancy according to the studies in India (2008)\textsuperscript{66} and China (2013)\textsuperscript{65} was respectively 30.7% and 43.8%, which was higher than the prevalence in Iran and in a study conducted in Egypt (2015)\textsuperscript{28} it was reported as 20% which is close to the prevalence rate in the country of Iran.

Based on meta-analysis of 40 studies conducted in different countries of the world with sample size of 114920 people (by eliminating studies in Iran), the prevalence of sexual violence during pregnancy in the world was 8%. In a study conducted by James L et al. (2013)\textsuperscript{56} as meta-analysis in 2013, the prevalence of sexual violence during pregnancy was 8% which is consistent with our study. According to the findings of the meta-analysis of 73 studies carried out worldwide, the prevalence of sexual violence during pregnancy was 17%. Overall, the prevalence of sexual violence during pregnancy in Iran is 11% higher than the global average.

**Conclusion**

The results of this study indicated that sexual violence during pregnancy has high prevalence in the world and Iran and also this rate in Iran has been higher than the global average. Given that sexual violence during pregnancy causes consequences of adverse health effects on the fetus, could adversely affect the physical and mental states of the mother. Therefore, the relevant authorities should reduce the prevalence of the phenomenon with the implementation of intervention programs and training, especially before marriage and pregnancy.
Table 1: General Characteristics of the studied articles that were eligible for the meta-analysis.

| Study (Ref)                  | Year published | Country            | Study Population | Age Range (year) | Design                        | Prevalence of sexual violence % |
|------------------------------|----------------|--------------------|------------------|------------------|-------------------------------|---------------------------------|
| Ibrahim ZM and et al 25      | 2015           | Egypt              | 1875             | 18-43            | Descriptive and analytical     | 10                              |
| Velasco C and et al 29       | 2014           | Spain              | 779              | 20-40            | Descriptive and analytical     | 0.5                             |
| de Oliveira and et al 30     | 2013           | Brazil             | 358              | 15-49            | cross-sectional                | 0.3                             |
| Iliyasu Z and et al 31       | 2013           | Nigeria            | 400              | -                | Descriptive and analytical     | 13.8                            |
| Izaguirre A and et al 32     | 2013           | Spain              | 35               | 26-60            | Descriptive and analytical     | 8.5                             |
| Finnboagdottir H and et al 33| 2013           | Sweden             | 1993             | 18-36            | Descriptive and analytical     | 0.1                             |
| Buyukkayaci Duman N and et al| 2012           | Switzerland        | 200              | 18-33            | Cross-sectional                | 2.5                             |
| Isaksson J and et al 35      | 2012           | Nicaragua          | 147              | -                | prospective                    | 4.3                             |
| Mahenge B and et al 36       | 2012           | Tanzania           | 1180             | 17-43            | Cross-sectional                | 20                              |
| Okour AM 37                  | 2011           | Jordan             | 303              | -                | cross-sectional                | 15.5                            |
| Shamu S and et al 38         | 2011           | Zimbabwe           | 2042             | 15-49            | Cross-sectional                | 38.9                            |
| Almeida CP and et al 39      | 2010           | Portugal           | 184              | -                | cross-sectional                | 24.6                            |
| Groves AK and et al 40       | 2010           | South Africa       | 1500             | 18-46            | cross-sectional                | 2.8                             |
| Akca Toprak Ergonen 41       | 2009           | Turkey             | 214              | 18-45            | prospective                    | 3.4                             |
| Perales MT and et al 42      | 2009           | Peru               | 2392             | -                | cross-sectional                | 3.9                             |
| Strökl H and et al 43        | 2008           | Germany            | 4001             | 15-35            | cross-sectional                | 0.7                             |
| Henriksen L and et al 44     | 2008           | Norway             | 76870            | 18-45            | prospective                    | 3.5                             |
| Antunes Nunes M and et al 45 | 2007           | Brazil             | 562              | 13-42            | prospective                    | 0.5                             |
| Varma D and et al 46         | 2007           | India              | 203              | 18-49            | Descriptive and analytical     | 9                               |
| Chhabra S and et al 47       | 2007           | India              | 2000             | 20-49            | Descriptive and analytical     | 30.7                            |
| Deved SE and et al 48        | 2007           | Turkey             | 249              | -                | Descriptive and analytical     | 4.4                             |
| Bailey BA and et al 49       | 2007           | America            | 104              | -                | Descriptive and analytical     | 20                              |
| Pereira Silval E and et al 50| 2006           | Brazil             | 960              | 18-49            | prospective                    | 6.1                             |
| Bernarda A and et al 51      | 2006           | Brazil             | 1133             | 18-49            | prospective                    | 5.7                             |
| Aparecida Ferrari Audi C and et al 52 | 2006 | Brazil | 1229 | - | prospective | 6.1 |
| Johri M and et al 53         | 2006           | Guatemala          | 1263             | 15-49            | cross-sectional                | 3                               |
| Gutierrez GR and et al 54    | 2006           | Mexico             | 1623             | -                | cross-sectional                | 5                               |
| Dan K and et al 55           | 2005           | Uganda             | 612              | -                | prospective                    | 2.7                             |
| Valladores E and et al 56    | 2004           | Nicaragua          | 147              | -                | cross-sectional                | 8                               |
| Karagozlu L and et al 57     | 2004           | Turkey             | 824              | 15-49            | cross-sectional                | 9.7                             |
| Yanikkerem E 58              | 2006           | Turkey             | 217              | -                | cross-sectional                | 36.4                            |
| Martha L and et al 59        | 2003           | Baltimore          | 715              | 18-46            | Descriptive and analytical     | 7.1                             |
| Ying Lau and et al 60        | 2003           | China              | 1200             | -                | cross-sectional                | 5.5                             |
| Olaiza G and et al 61        | 2003           | Mexico             | 26               | 18-49            | cross-sectional                | 17.3                            |
| Diaz-Olavarrieta and et al C 62| 2003         | Mexico             | 1314             | 13-35            | cross-sectional                | 1.8                             |
| Isaksson J and et al 63      | 2003           | Nicaragua          | 147              | -                | cross-sectional                | 8.6                             |
| Guo SF and et al 64          | 2002           | China              | 12044            | 19-45            | cross-sectional                | 2.8                             |
| Zhang Y and et al 65         | 2007           | China              | 196              | -                | cross-sectional                | 43.8                            |
| Moraes CL and et al 66       | 2000           | Brazil             | 526              | -                | Retrospective                  | 9.9                             |
| Widding Hedinl and et al 67  | 2000           | Sweden             | 207              | 15-49            | cross-sectional                | 3.3                             |

Journal homepage: [http://www.jivrsearch.org](http://www.jivrsearch.org)
### Continue Table 1: General Characteristics of the studied articles that were eligible for the meta-analysis.

| Study (Ref)         | Year published | Country     | Study Population | Age Range (year) | Design                  | Prevalence of sexual violence % |
|---------------------|----------------|-------------|------------------|------------------|-------------------------|--------------------------------|
| Castro R and et al 1 | 1999           | Mexico      | 914              | 18-45            | cross-sectional         | 8.1                            |
| Ramezani S and et al 2 | 2015           | Shahroud    | 430              | 15-43            | cross-sectional         | 25.3                           |
| Drodgar Z and et al 3 | 2012           | Khorasan    | 400              | 15-49            | Descriptive and analytical | 8.5                           |
| B Baheri and et al 4 | 2012           | Karaj       | 168              | 15-49            | Descriptive and analytical | 45.2                           |
| Farrokh-Aslam and et al 5 | 2012        | Orumieh     | 350              | 17-46            | cross-sectional         | 17.2                           |
| Niaki M and et al 6 | 2015           | Iran        | 15445            | -                | Meta-Analysis           | 21                             |
| Golchin N and et al 7 | 2012           | Golestan    | 301              | 15-49            | cross-sectional         | 3.7                            |
| Mohammadi Y and et al 8 | 2012         | Noorabad    | 400              | -                | Descriptive and analytical | 14.5                           |
| Kafaei RM and et al 9 | 2011           | Kashan      | 143              | 14-42            | Descriptive and analytical | 4.9                            |
| Mohammadi G and et al 10 | 2011         | Tehran      | 69               | -                | cross-sectional         | 76                             |
| Hassan M and et al 11 | 2010           | Banab       | 650              | 18-39            | cross-sectional         | 43.4                           |
| M Doulatian and et al 12 | 2010         | Marivan     | 120              | 15-49            | prospective             | 44.6                           |
| Hassan M and et al 13 | 2013           | Miandoab    | 650              | 18-39            | cross-sectional         | 43.4                           |
| Hassan M and et al 14 | 2013           | Mahabad     | 650              | 18-39            | cross-sectional         | 17.1                           |
| M Doulatian and et al 15 | 2010          | Marivan     | 240              | 15-49            | prospective             | 89.2                           |
| Mohammadihossein E and et al 16 | 2010       | Jahrom      | 300              | 15-49            | cross-sectional         | 17.3                           |
| A Ranji and et al 17 | 2010           | Orumieh     | 824              | 15-49            | cross-sectional         | 41.8                           |
| S Hasanzadeh and et al 18 | 2009         | Ahvaz       | 300              | 15-49            | cross-sectional         | 9.3                            |
| Hassan M and et al 19 | 2013           | Mahabad     | 650              | 18-35            | cross-sectional         | 8.6                            |
| Hassan M and et al 20 | 2009           | Bonab       | 650              | 18-35            | cross-sectional         | 1.5                            |
| Hassan M and et al 21 | 2009           | Miandoab    | 650              | 18-35            | cross-sectional         | 13.8                           |
| F Erfanian and et al 22 | 2009           | Mashhad     | 109              | -                | Descriptive and analytical | 15.6                           |
| Khorasani F and et al 23 | 2008           | Sanandaj    | 840              | 15-49            | cross-sectional         | 18.8                           |
| B Baheri and et al 24 | 2008           | Karaj       | 335              | 15-49            | Descriptive and analytical | 37.3                           |
| Jafarinejad F and et al 25 | 2008          | Khorasan    | 102              | 15-49            | Descriptive and analytical | 23.5                           |
| Shakerinejad M and et al 26 | 2008         | Zanjan      | 132              | 15-49            | cross-sectional         | 28.8                           |
| Hossami K and et al 27 | 2006           | Marivan     | 243              | 15-45            | cross-sectional         | 55.1                           |
| Ansari H and et al 28 | 2005           | Kohgiluyeh  | 636              | -                | Retrospective           | 61                             |
| Farahani R and et al 29 | 2005           | Babol       | 3257             | 15-49            | Descriptive and analytical | 19.2                           |
| Khadizadeh T and et al 30 | 2004           | Mashhad     | 190              | 16-38            | Descriptive and analytical | 51.6                           |
| Jahanifar S and et al 31 | 2003           | Tehran      | 1800             | 15-45            | cross-sectional         | 23.5                           |
| Bagherzadeh R and et al 32 | 2003          | Shiraz      | 400              | 15-49            | Descriptive and analytical | 22.3                           |
| Salehi SM and et al 33 | 2002           | Shahrekord  | 1600             | 16-48            | Descriptive and analytical | 13.8                           |
Figure 2: Prevalence of sexual violence during pregnancy and confidence level of 95% in studies in terms of the year and author based on a random effects model. The midpoint of each segment represents the prevalence rate and the segment length measures the confidence level of 95% per study. The diamond mark shows the prevalence rate for all the studies.
Acknowledgments

Hereby, the student research committee of medical university of Ilam who helped us in conducting this study, are sincerely thanked and appreciated.

Funding: None

Competing interests: None declared

Ethical approval: Not required.

Figure 3-a: Meta-regression graph of the prevalence of sexual violence during pregnancy in year.

Figure 3-b: Meta-regression graph of the prevalence of sexual violence during pregnancy in sample size.
References

1. Mousavi SM, Eshaghi A. Wife abuse in Esfahan, Islamic republic of Iran. Eastern Mediterranean Health Journal. 2005;11(5):860-9.
2. Bakhtiari A, Omidbakht N. Backgrounds and effects of domestic violence against women referred to law-medicine center of Babol, Iran. Journal of Kermanshah University of Medical Sciences. 2004;7(4): 28-35. (Persian)
3. Dolatian M, Gharahedaghy M, Ahmadi M, Shams J, Alavimajd H. Relationship between intimate partner abuse during pregnancy and pregnancy outcomes. J Ahvaz Univ Med Sci. 2009;13(4):261-9. (Persian)
4. World Health Organization. Violence against women. WHO Fact Sheet 2001 Jun, http://www.WHO.int/nmeps/2269/239-Violence against women for Milp.pdf, accessed 12 November 2004.
5. Mohamadkhani P, Rezaee E, Mohamadi M, Azadmehr H. The prevalence of domestic violence among men and women. Journal of Social Wellbeing. 2005;5:215-23. (Persian)
6. García-Moreno C, Pallitto C, Devries K. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva: World Health Organization, 2013.
7. Campbell J, García-Moreno C, Sharps P. Abuse during pregnancy in industrialized and developing countries. Violence Against Women. 2004;10:770-89.
8. Johnson JK, Haidar F, Ellis K, Hay DM, Lindow SW. The Prevalence of domestic violence in pregnant women. BJOG. 2003 Mar;110(3):272-5.
9. Affifi ZE, Al-Muhaideb NS, Hadish NF, Ismail FI, Al-Qeamy FM. Domestic violence and its impact on married women’s health in Eastern Saudi Arabia. Saudi Med J. 2011 Jun;32(6):612-20.
10. Hammoury N, Khawaja M. Screening for domestic violence during pregnancy in an antenatal clinic in Lebanon. European Journal of Public Health. 2007;17(6):505-6.
11. Nunes MA, Comey S, Ferri CP, Manzolli P, Manenti CN, Schmidt MI. The Prevalence of domestic violence in pregnant women. BJOG. 2003 Mar;110(3):272-5.
12. Romero-Gutiérrez G1, Cruz-Arvizu VH, Regalado-Cedillo CA, Ponce-Ponce de León AL. Prevalence of violence against pregnant women and associated maternal and neonatal complications in Leon, Mexico. Midwifery. 2011 Oct;27(5):730-3.
13. Niazi M, Kassani A, Manati R, Khammarinia M. The prevalence of domestic violence among pregnant women in Iran: A systematic review and meta-analysis. Sadra Med Sci J. 2015;3(2):139–50. (Persian)
14. Hassan M, Kashanian M, Hassan M, Roohi M, Yusefi H. Assessment of Association between domestic violence during pregnancy with fetal outcome. Iran J Obst Gynecol Infertility. 2013;1(6):43(1):21-9. (Persian)
15. Bagherzadeh R, Keshavarz T, Sharif F, Dehbashi S, Tabatabaie H. Relationship between domestic violence during pregnancy and complications of pregnancy, type of delivery and birth weight on delivered women in hospital affiliated to Shiraz University of Medical Sciences. Horizon Med Sci. 2008;13(4):51-58. (Persian)
16. Hasanzadeh S, Nourjah S, Haghighizadeh MH. Prevalence of domestic violence against pregnant women and its related factors in women referred to health centers in 2010 in Ahvaz, Iran. Jentashapir J Health Res 2011;2(3):104–10. (Persian)
17. Baheri B, Ziaie M, Mohammadi Z. Effect of domestic violence on pregnancy outcomes among pregnant women referring to Karaj Medical Centers. HAKIN Research Journal. 2012;15(2):140-6. (Persian)
18. Pournaghash-Tehrani S. Domestic violence in Iran: A literature review. Aggression and Violent Behavior. 2011;16(1):1-5.
19. Ghasemi SR, Roshadat S, Rajabgi-Giloni N, Salimi Y, Norouzi M. The Relationship between rural women’s health-related quality of life and domestic violence. Zahedan Journal of Research in Medical Sciences. 2007;17(6):28-35. (Persian)
20. Hasheminassab L. Assessment of prevalence, outcome and factors related to domestic physical violence in pregnant women referring to delivery departments of Sanandaj hospitals. J Sanandaj Univ Med Sci. 2007;11(4):32-41. (Persian)
21. Hesami K, Doulatian M, Shams J, Alavimajd H. Domestic violence before and during pregnancy among pregnant women referring to Karaj Medical Centers. HAKIN Research Journal. 2012;15(2):140-6. (Persian)
22. Fatemi M. Association between domestic violence and skills of live. Social Choice and Welfare. 2011;11(43):51-60. (Persian)
23. Akrami M. Prevalence of physical violence against pregnant women and effects on maternal and birth outcomes. Acta Medica Iranica. 2006; 44(2):95-100.
24. Taghavi S, Alizadeh M, Khalilzadeh D. Domestic violence against pregnant women attending a hospital in Iran. Research Journal of Biological Sciences. 2008;3(1):128-31.
25. Doulatian M, Gharacheh M, Ahmadi M, Shams J, Majd HA. Relationship between partner abuse during pregnancy and pregnancy outcomes. Med J Hormozgan Univ. 2010;13(4):260-9.
26. Salari Z, Nokhooe N. Identifying types of domestic violence and its associated risk factors in a pregnant population in Kerman hospitals. Iran Republic. Asia-Pacific Journal of Public Health. 2008;20(1): 49-55.
Perales MT, Cripe SM, Lam N, Sanchez SE, Sanchez E, Williams MA. Prevalence, types, and pattern of intimate partner violence among pregnant women: application of two screening instruments to assess prevalence and associated factors. Acta Obstet Gynecol Scand. 2014 Oct;93(10):1050-8.

Saude Publica. 2011 Dec;45(6):1044-53.

pression and post-traumatic stress disorder. J Affect Disord. 2007 Sep;102(1-3):227-35.

2013 Apr;20(5):419-25.

2011 Jul;111(2):136-9.

2015 Dec;71:97-102.

2013 Jul;120(8):940-6.

2014 Nov;111(2):136-9.

2015 Dec;20(12):1853-9.

2014;23(3):209-15.

Fonseca-Machado MdO, Monteiro JCDs, Haas VJ, Abríáo ACFdv, Gomes-Sporholz F. Intimate partner violence and anxiety disorders in pregnancy: the importance of vocational training of the nursing staff in facing them. Rev Latino-Am Enfermagem. 2015;23(5):855-64.

Ilyasau Z, Abubakar IS, Galadanci HS, Hayatu Z, Aliyu MH. Prevalence and risk factors for domestic violence among women in Nigeria. J Interpers Violence. 2013 Mar;28(4):868-83.

2014;23(3):209-15.

Fimbegadóttir H, Dykes AK, Wann-Hansson C. Prevalence of domestic violence during pregnancy and related risk factors: a cross-sectional study in southern Sweden. BMC Womens Health. 2014 May 1;14:63.

Duman NB. Psychological and physical problems faced by the pregnant women who were subjected to violence by their husbands in Turkey. International Journal of Humanities and Social Science. 2012;2(22):231-9.

Isaksson J, Lindblad F, Valladares E, Höggberg U. High maternal cortisol levels during pregnancy are associated with more psychiatric symptoms in offspring at age of nine - A prospective study from Nicaragua. J Psychiatr Res. 2015 Dec;71:97-102.

Mahenge B, Likindikokiki S, Stöckl H, Mbwambo J. Intimate partner violence during pregnancy and associated mental health symptoms among pregnant women in Tanzania: a cross-sectional study. BJOG. 2013 Jul;120(8):940-6.

Okour AM, Badarneh R. Spousal violence against pregnant women from a Bedouin community in Jordan. J Womens Health (Larchmt). 2011 Dec;20(12):1853-9.

Shamo S, Abrahams N, Zarowsky C, Shefer T, Temmerman M. Intimate partner violence during pregnancy in Zimbabwe: a cross-sectional study of prevalence, predictors and associations with HIV. Trop Med Int Health. 2013 Jun;18(6):696-711.

Almeida CP, Cunha FF, Pires EP, Só E. Common mental disorders in pregnancy in the context of interpartner violence. J Psychiatr Ment Health Nurs. 2013 Apr;20(5):419-25.

Groves AK, Kogee A, Maman S, Moodley D, Rouse P. Associations between intimate partner violence and emotional distress among pregnant women in Durban, South Africa. J Interpers Violence. 2012 May;27(7):1341-56.

Ergünen AF, Özdemir HH, Can IO, Sönmez E, Solasgin S, Berberoğlu E, et al. Domestic violence on pregnant women in Turkey. J Forensic Leg Med. 2009 Apr;16(3):125-9.

Peralles MT, Cripe SM, Lam N, Sanchez SE, Sanchez E, Williams MA. Prevalence, types, and pattern of intimate partner violence among pregnant women in Lima, Peru. Violence Against Women. 2009 Feb;15(2):224-50.

Stöckl H, Hertlein L, Friese K, Stöckl D. Partner, workplace, and stranger abuse during pregnancy in Germany. Int J Gynaecol Obstet. 2010 Nov;111(2):136-9.

Henriksen L, Schei B, Yangen S. Sexual violence and neonatal outcomes: a Norwegian population-based cohort study. BMJ Open. 2014 Oct 14;4(10):e005935.

Varma D, Chandra PS, Thomas T, Carey MP. Intimate partner violence and sexual coercion among pregnant women in India: relationship with depression and post-traumatic stress disorder. J Affect Disord. 2007 Sep;102(1-3):227-35.

Ohabro S. Sexual violence among pregnant women in India. J Obstet Gynaecol Res. 2008 Apr;34(2):238-41.

Deveci S, Acik Y, Olgubayrak C, Tokdemir M, Ayar A. Prevalence of domestic violence during pregnancy in a Turkish community. Southeast Asian J Trop Med Public Health. 2007 Jul;38(4):754-60.

Bailey BA, Daugherty RA. Intimate partner violence during pregnancy: incidence and associated health behaviors in a rural population. Matern Child Health J. 2007 11(5):495-503.

Silva EP, Ludemir AB, Araújo TV, Valongueiro SA. Frequency and pattern of intimate partner violence before, during and after pregnancy. Rev Saude Publica. 2011 Dec;45(6):1044-53.

Ludemir AB, Lewis G, Valongueiro SA, de Araújo TV, Arayoa R. Violence against women by their intimate partner during pregnancy and postnatal depression: a prospective cohort study. Lancet. 2010 Sep 11;376(9744):903-10.

Audi CA, Corrêa AM, Latorre Mdo R, Santiago SM. The association between domestic violence during pregnancy and low birth weight or pre-maturity. J Pediatr (Rio J). 2008 Jan-Feb;84(1):60-7.

Johri M, Morales RE, Bolvin JP, Samayooy BE, Hodh JS, Grazioso CF, et al. Increased risk of miscarriage among women experiencing physical or sexual intimate partner violence during pregnancy in Guatemala City, Guatemala: cross-sectional study. BMC Pregnancy Childbirth. 2011 Jul 6;11:49.
53. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Domestic violence during pregnancy and risk of low birthweight and maternal complications: a prospective cohort study at Mulago Hospital, Uganda. Trop Med Int Health. 2006 Oct;11(10):1576-84.

54. Vaillodares E, Peña R, Ellsberg M, Persson LA, Högborg U. Neuroendocrine response to violence during pregnancy--impact on duration of pregnancy and fetal growth. Acta Obstet Gynecol Scand. 2009;88(7):818-23.

55. Karaoğlu L, Celin S, Ocran C, Ilgar M, Pehlivan E, Gunes G, et al. Physical, emotional and sexual violence during pregnancy in Malatya, Turkey. Eur J Public Health. 2006 Apr;16(2):149-56.

56. Yanikkerem E, Kararagy G, Adiguzel B, Sevil U. Domestic violence during pregnancy in Turkey and responsibility of prenatal healthcare providers. Am J Perinatol. 2006 Feb;23(2):93-103.

57. Velez ML, Montoya ID, Jansson LM, Walters V, Sviks D, Jones HE, et al. Exposure to violence among substance-dependent pregnant women and their children. J Subst Abuse Treat. 2006 Jan;30(1):31-8.

58. Lau Y, Chan KS. Influence of intimate partner violence during pregnancy and early postpartum depressive symptoms on breastfeeding among Chinese women in Hong Kong. J Midwifery Womens Health. 2007 Mar-Apr;52(2):135-20.

59. Olaiz G, Rojas R, Valdez R, Franco A, Palma O. Gender violence prevalence in female users of health services in Mexico. Salud Publica Mex. 2006;48 Suppl 2:S232-8.

60. Diaz-Olavarrieta C, Pozo F, Abubakara K, Ayala HM, Kolstad K, Palermo T. Abuse during pregnancy in Mexico City. International Journal of Gynecology and Obstetrics. 2007;97:57-64.

61. Guo SF, Wu JL, Qu CY, Yan YR. Physical and sexual abuse of women before, during, and after pregnancy. Int J Gynaecol Obstet. 2004 Mar;84(3):281-6.

62. Zhang Y, Zou S, Zhang X, Zhang Y. Correlation of domestic violence during pregnancy with plasma amino-acid neurotransmitter, cortisol levels and catechol-O-methyltransferase Val(158)Met polymorphism in neonates. Asia Pac Psychiatry. 2013 Mar;5(1):2-10.

63. Moraes CL, Reichenheim ME. Domestic violence during pregnancy in Rio de Janeiro, Brazil. Int J Gynaecol Obstet. 2002 Dec;79(3):269-77.

64. Hedin LW, Janson PO. Domestic violence during pregnancy. The prevalence of physical injuries, substance use, abortions and miscarriages. Acta Obstet Gynecol Scand. 2000 Aug;79(8):625-30.

65. Castro R, Peek-Asa C, Ruiz A. Violence against women in Mexico: a study of abuse before and during pregnancy. Am J Public Health. 2003 Jul;93(7):1110-6.

66. Ramezani S, Keramat A, Motaghi Z, Mohabatpur Z, Khorasvi A. The relationship of sexual satisfaction and marital satisfaction with domestic violence against pregnant women. Int J Pediatr. 2015;3(22):951-8.

67. Droadgar Z. The relationship between domestic violence and pregnancy outcomes in women admitted to the gynecology ward of Shahoda Hospital Ghaen in 2013, MD Thesis, Kerman University of Medical Sciences, Kerman, Iran, 2013.

68. Farrokh-Esfahani H, Oshnouei S, Haghighi N. Intimate partner violence during pregnancy in Urmia, Iran in 2012. J Forensic Leg Med. 2014 May;24:28-32.

69. Golchin N, Hamzehgardeshi Z, Ahoodasti M. Sociodemographic characteristics of pregnant women exposed to domestic violence during pregnancy in an Iranian setting. Iran Red Crescent Med J. 2014 Apr;16(4):e11899.

70. Mohammad M, Dehghanian H, Dehghani F. Psychological and Social factors influencing the violence against women, Nourabad, Fars. Armaghan-e-danesh. 2014;19(6):542-52.

71. Kafaei AM, Abbasszadeh F, Sarafraz N, Izady AF, Jafariabadi MA. Survey of domestic violence during gestation, in women referred to Kashan’s Golabchi health clinics in 2008. J Zabol Univ Med Sci. 2012;3(4):29-37. (Persian)

72. Mohammad G, Aliakbari SA, Ramezankhani A, Majd HA. The reproductive health status of women with experience of violence in harm reduction centers in Tehran, 2010. Pejushandeh J. 2011;16(5):219-25.

73. Mohammadhosseini E, Sahraeian L, Bahrami T. Domestic abuse before, during and after pregnancy in Jahrom, Islamic Republic of Iran. East Mediterr Health J. 2010 Jul;16(7):752-8.

74. Ranji A, Sadik Khanlou M. The study of domestic violence during pregnancy, its relationship with agents Demographic and its effects on pregnancy centers Urmia city health. Woman and Family Studies. 2012;4(15):107-26.

75. Hassan M, Kashanian M, Roohi M, Vizheh M, Hassan M. Domestic violence against pregnant women: prevalence and associated factors Journal of Research - Women and Society. 2010;1(4):77-96.

76. Erfani F, Khadivi Zadeh T. The prevalence of domestic violence and its relationship with pregnancy side effects in Iranian pregnant women. Poster presentations International Journal of Gynecology & Obstetrics. 2009;107(2):663.

77. Khosravi F, Hasheminasab L. Study of the incidence and outcomes of domestic violence among pregnant women referring to childbirth unit of Sanandaj hospitals. Urmia Med J. 2008;19(1):8-14.

78. Baheri B, Ziaie M, Zeighamn-Mohammad Sh. Frequency of domestic violence in women with adverse pregnancy outcomes (Karaj 2007-2008). Scientific Journal of Hamadan Nursing & Midwifery Faculty. 2012;20(1):31-8.
79. Jafamezhad F, Moghadam V, Soltanifar A. Study of the relationship between domestic violence intensity during pregnancy and mother-infant. Scientific Journal of Hamadan Nursing & Midwifery Faculty. 2009;18(1):22-31.

80. Shakerinezhad M. Domestic violence and related factors in pregnant women. J Zanjan Univ Med Sci 2014;21(89):117-26. (Persian)

81. Ansari H, Parsaei Z, Rahimi E, Rakhsheh F. Relationship between violence exposure pregnancy and neonatal low birth weight. Journal of Jahrom University of Medical Science. 2008;6(2):17-26.

82. Faramarzi M, Esmailzadeh S, Mosavi S. Prevalence, maternal complication and birth outcome of physical, sexual and emotional domestic violence during pregnancy. Acta Med Iran. 2005;43(2):115-22.

83. Khadivzadeh T, Erfanian F. Compare domestic violence before and during pregnancy and its related factors. 2011;14(4):47-56.

84. Jahanfar S, Malekzadegan Z. The prevalence of domestic violence among pregnant women who were attended in Iran University of Medical Science hospitals. Journal of Family Violence. 2007;22(8):643-8.

85. Salehi S, Mehralian HA. The prevalence and types of domestic violence against pregnant women referred to maternity clinics in Shahrekord, 2003. Journal of Shahrekord University of Medical Sciences. 2006; 8(2): 72-7.

86. James L, Brody D, Hamilton Z. Risk factors for domestic violence during pregnancy: a meta-analytic review. Violence Vict. 2013;28(3):359-80.