INTERNATIONAL JOURNAL OF CURRENT RESEARCH IN BIOLOGY AND MEDICINE
ISSN: 2455-944X
www.darshanpublishers.com
Volume 5, Issue 11 - 2020

Original Research Article

DOI: http://dx.doi.org/10.22192/ijcrbm.2020.05.11.003

The Prevalence of Depression in Iranian Infertile Women Referred to Infertility Clinics: A systematic review and meta-analysis

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Abstract

Introduction: Stress due to infertility cause marital dissatisfaction, low self steam and decreased intercourse frequency in couples. The aim of this study was evaluated the The Prevalence of Depression in Iranian Infertile Women Referred to Infertility Clinics.

Methods: The two researchers independently analyzed the titles and abstracts of the articles according to the eligibility criteria.All eligible studies were included in the data collection after systematic review and the data were integrated using the accumulation diagram.The random effects model was evaluated based on the overall prevalence of the disease among the participants.

Results: According to the random effect model, the prevalence of moderate depression in 2008 was 13% for infertile women (95% in the confidence interval 0.12-0.15 for I^2 = 88.1) and the prevalence of major depression in 2008 for infertile women was 5% in the 95% confidence interval. And I^2 = 88.2% equal to 0.04-0.06%.

Conclusion: Infertility can impair the quality of marital relationships and reduce intimacy, fear of ending a marital relationship, separation, divorce, low self-esteem, feelings of rejection and helplessness, and frustration.Studies have shown that the prevalence of depression in infertile women is higher than the general female population.

Keywords: Infertility, depression, anxiety, marital satisfaction

Introduction

Infertility is the infertility of a couple after one year of regular sexual intercourse without the use of contraceptive methods(1).Approximately 15% of couples suffer from infertility, the causes of infertility in 40% of cases are related to female factors, 40% are related to male factors and 20% are related to common factors.Of the 20% of common causes, 5 to 10% are idiopathicThe phenomenon of fertility is a physiological process in living organisms that in human beings, in addition to physiological aspects, also has social and psychological dimensions(2-4).Studies have shown that infertility can have many psychological consequences(5-7).The fact that a person cannot follow the reproductive process naturally and like other normal people and have a child, is itself one of the most bitter experiences of life that the psychological and social context and conditions can add to its importance and that Turn into a psychological crisis for the person(8-11).Infertile women are among those in the community who are exposed to psychological and personality damage(12).Feelings of inability to reproduce and the common social reactions in society to this group of people are the cause of many psychological pressures for this group(13-15).Infertility can also impairs the quality of marital relations, divorce reduces a person

self-confidence and sense of rejection in the infertility (16-19). These indicators may lead to depression, anxiety, or guilt.Infertility has so many psychological consequences for people that it can be one of the bitterest experiences in life and turn it into a psychosocial crisis (20).Having a child is one of the most important goals of family formation and marriage, so the problem of infertility can play a role in creating stress in the family (21).Infertility stress causes marital dissatisfaction, decreased self-esteem, and decreased sexual intercourse(22).The combination of these feelings leads to depression and anxiety and feelings of helplessness and guilt in the infertile person(23).This can lead to an increase in marital discord and a lack of enjoyment of life while the couple is in the treatment stages of fertility and sexual activity is done solely for the purpose of having children.Having the support of others, especially your spouse, as well as providing the necessary advice during treatment can be effective ways to reduce infertility problems.

Methods

Inclusion criteria (eligibility criteria)

The methods used in this systematic review have been developed based on the Checklist Guidelines (PRISMA).The study includes cross-sectional studies, case studies, and cohort studies, and excludes case studies, letters to editors, case reports, clinical trials, study protocols, systematic reviews, and reviews.

Participants: All studies on depression in infertile women were studied.The main purpose of the study was the prevalence of depression in infertile women. The findings were collected according to the report.Sampling methods and sample size: All observational studies, regardless of their design, were included in the systematic review.The minimum sample size was 25 patients or more.

Search strategy

The searches were performed by two independent researchers and the purpose of the search was to find published studies from 1/1/2000 to 12/30/2019.Studies published in MEDLINE were searched through PubMed, EMBASE through Ovid, the Cochrane Library.For studies published in other languages, national database (Magiran and (SID, KoreaMed and LILACS) and for searching unpublished studies OpenGrey (www.opengrey.eu/) and the WHO Clinical Trials Register (who.int/ictrp) And we searched for ongoing studies.To ensure the adequacy of the studies, a list of relevant research sources or studies found by the search was read.Systematic review articles were searched using MESH phrases and open phrases in accordance with print standards.After the MEDLINE strategy was finalized, the results were compared to search other databases.Keywords used in search strategy were: Infertility, depression, anxiety, marital satisfaction .

Select study and extract data:

The two researchers independently analyzed the titles and abstracts of the articles according to the eligibility criteria.After deleting additional studies, the full text of the studies was collected based on the eligibility criteria and information about the authors if necessary.General information (relevant author, province and year of publication), study information (sampling technique, diagnostic criteria, data collection method, research conditions, sample size and risk of bias) and output scale (prevalence of depression) were collected.

Quality evaluation

The developed scale of Hoy et al. Was used to evaluate the quality of the method and the risk of bias in each observational study.This is a 10-item scale to assess the quality of studies according to their external validity (items 1 to 4 of the target population, sampling framework and minimum participation bias) and internal validity (items 5 to 9 of data collection, problem statement , Evaluates the research scale and data collection tools while item 10 evaluates the data analysis bias.The risk of bias was measured by the two researchers independently and the differences were resolved by agreement.

Collecting data

All eligible studies were included in the data collection after systematic review and the data were integrated using the accumulation diagram.The random effects model was evaluated based on the overall prevalence of the disease among the participants.The heterogeneity of the initial studies was assessed using the I^2 test.In addition, subgroups were analyzed to determine heterogeneity based on participants age, year of publication, and country.Finally, a meta-analysis was performed in STATA14 statistical software.

Results

Study selection

A total of 268 articles were extracted through initial searches in various databases.Out of 268 essential studies identified by analyzing titles and abstracts, 215 studies were omitted due to irrelevant titles.Out of 43 existing studies, 27 articles were deleted. Out of the remaining 16 studies, 6 studies had study criteria. (figure 1).

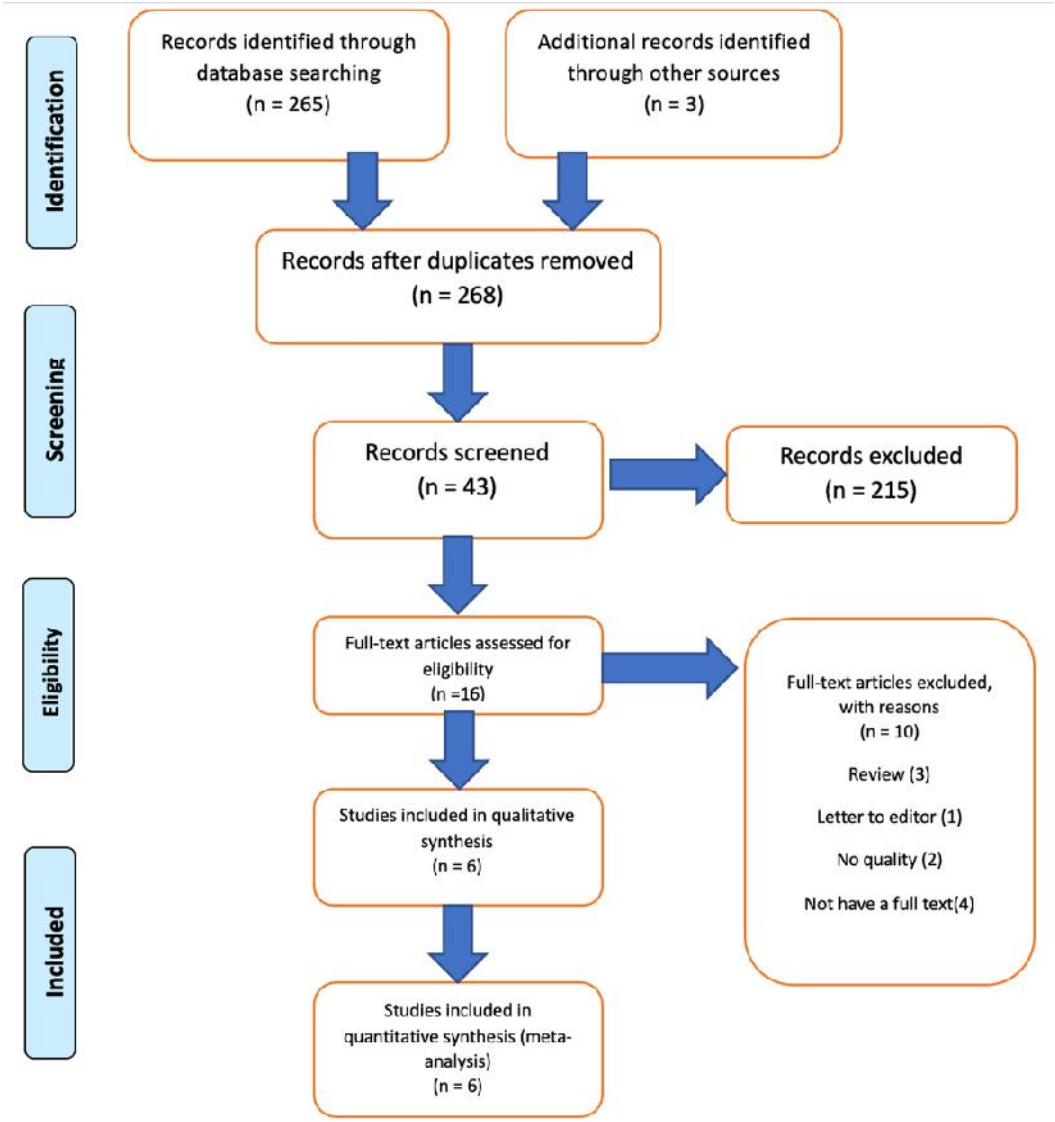

Figure 1:PRISMA flow diagram

Research specifications:

A total of 2008 infertile women were evaluated. All studies were retrospective. A total of 6 studies from 4 provinces that met the inclusion criteria were reviewed.Among these studies, 2 studies from Tehran, 3 studies from Mashhad, Urmia and Mazandaran were included in the study.

The risk of bias was low in most studies. The main method of data collection was medical records and questionnaires. (Table 1).

Table 1:Characteristics of the included studies.

Author	Year	Patients	Prevalence(moderate)	Prevalence(Severe)	Age	Province
Haririyan[20]	2009	100	10%(0.03)	11%(0.031)	27.5+4.4	Urmia
Peyvandi [21]	2010	200	25.5%(0.0306)	9%(0.0202)	28(18-48)	Mazandaran
Abediniya[22]	2003	370	10%(0.0155)	4.9%(0.0113)	28+5.3	Tehran
Noorbala [23]	2008	638	12.5%(0.0128)	3%(0.00675)	26.3+4.4	Tehran
Ezzati[24]	2014	400	22%(0.0207)	12%(0.0162)	NA	NA
Behdani[25]	2004	200	10%(0.0212)	11%(0.0221)	27.68+4.41 Peyvandi	Mashhad

Meta-analysis of the frequency of depression:

According to the random effect model, the prevalence of moderate depression in 2008 was 13% for infertile women (95% in the confidence interval 0.12-0.15 for I^2 = 88.1) and the prevalence of major depression in 2008 for infertile women was 5% in the 95% confidence interval. And I^2 = 88.2% equal to 0.04-0.06%, (Figure 2 and 3, Table 1).

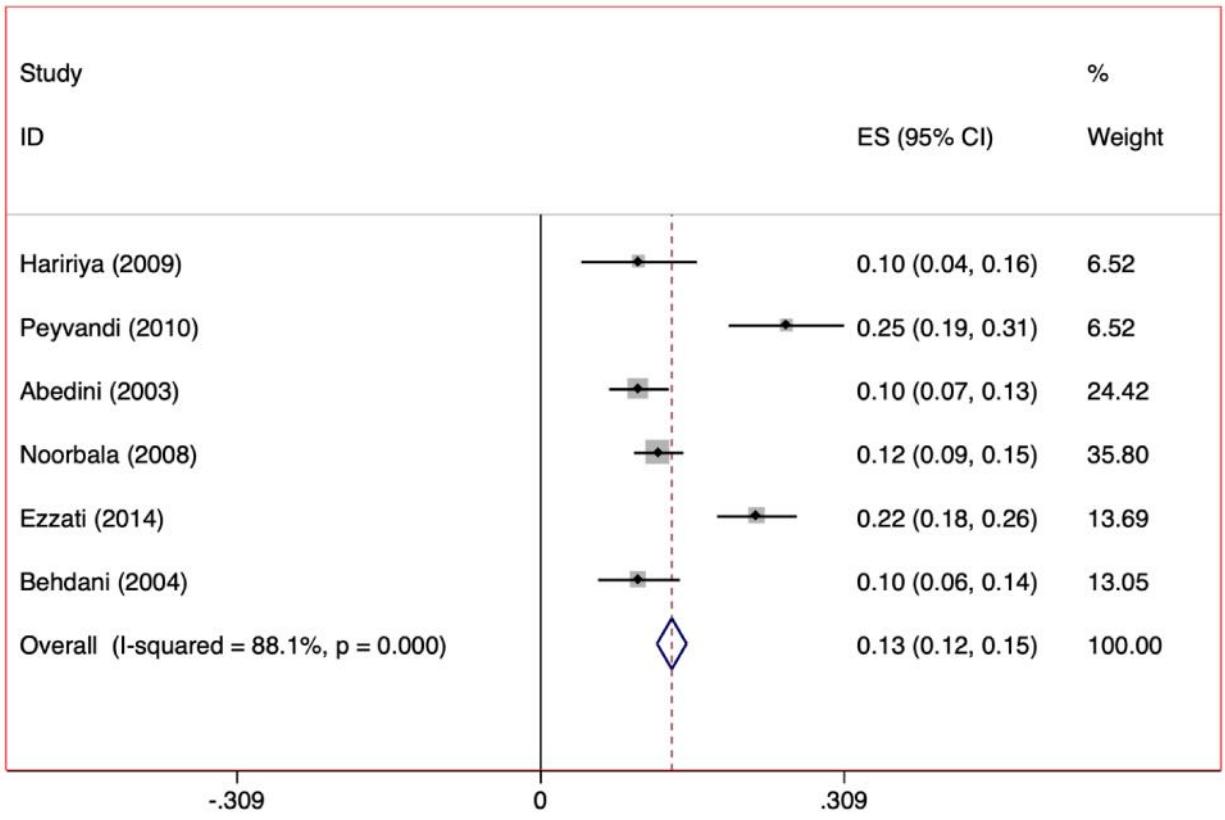

Figure 2:Meta-analysis of the prevalence of moderate depression in Iranian Infertile women

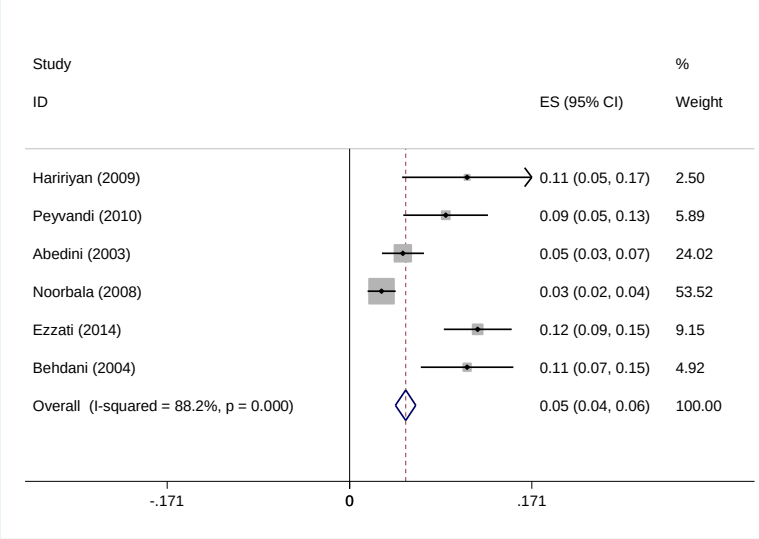

Figure 3:Meta analysis of the prevalence of severe depression in Iranian Infertile women

Subgroup analysis:

Meta-regression results:

Results of meta-regression between participants' age and frequency of depression:

The regression of the study was evaluated according to the relationship between the age of the participants and the rate of moderate and severe depression.There was no significant linear trend in univariate meta-regression to explain the change in the effect of age of participants. (Figure 4 and 5).

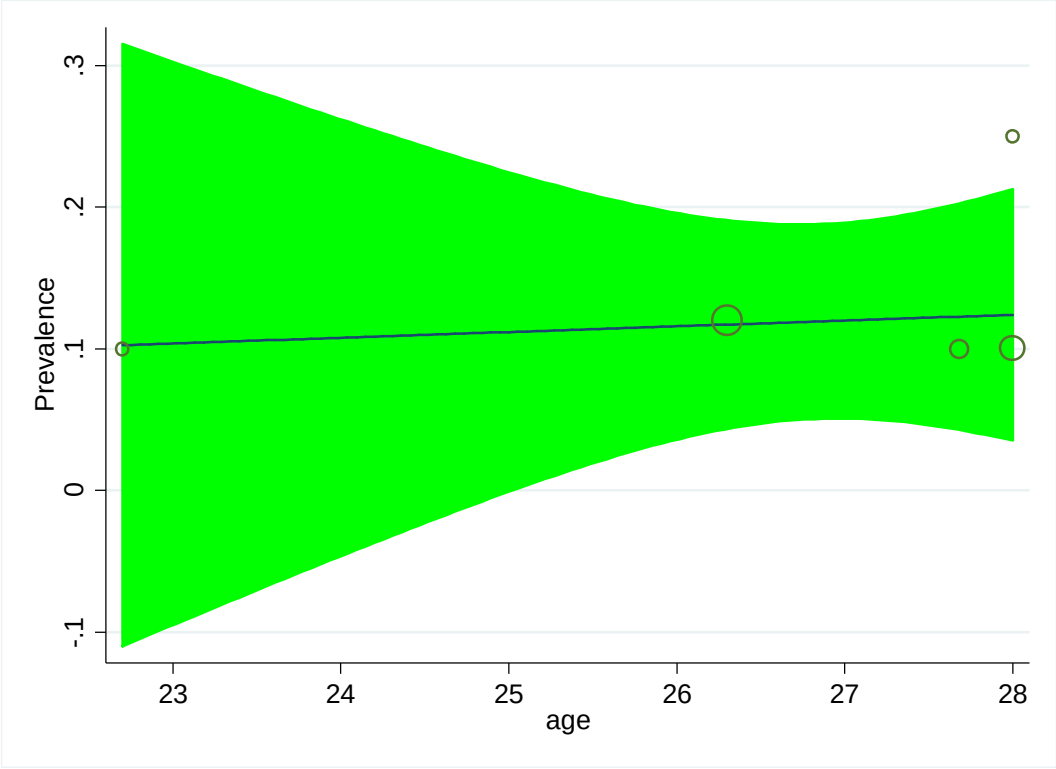

Figure 4:Meta-regression between participants' age and the prevalence of moderate depression in Iranian Infertile women

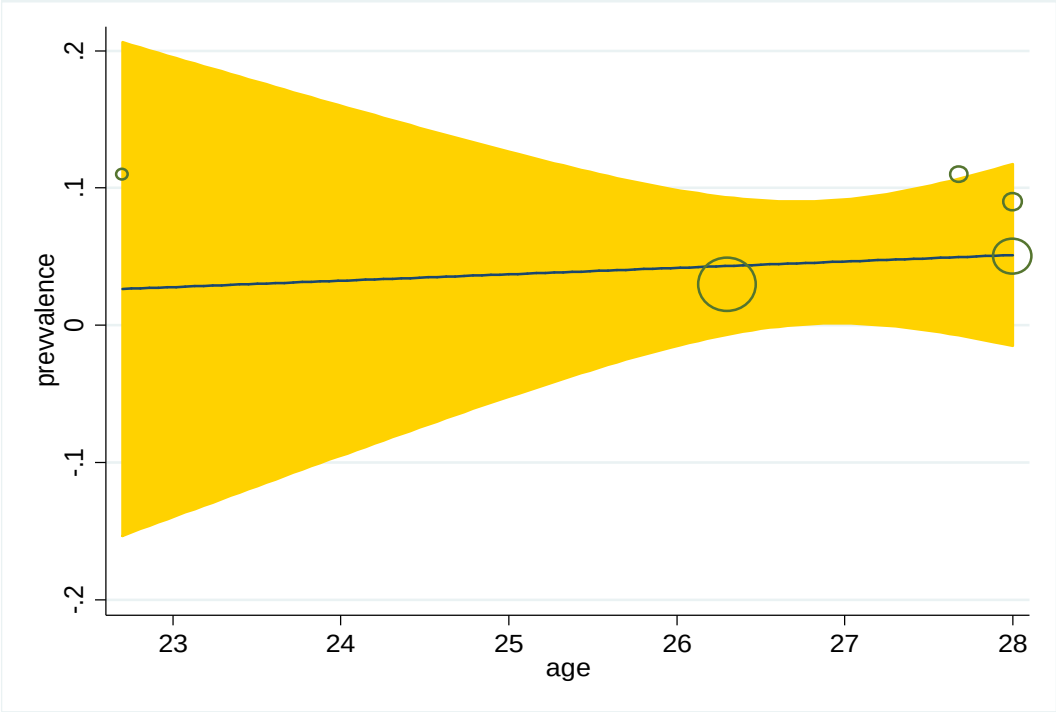

Figure 5::Meta-regression between participants' age and the prevalence of severe depression in Iranian Infertile women

Results of meta-regression between study publication year and frequency of depression:

Study regression was evaluated according to the relationship between the year of publication of the study and the rate of moderate and severe depression.There was a significant linear increase in univariate meta-regression to explain the effect size change of the year of publication. (Figure 6 and 7).

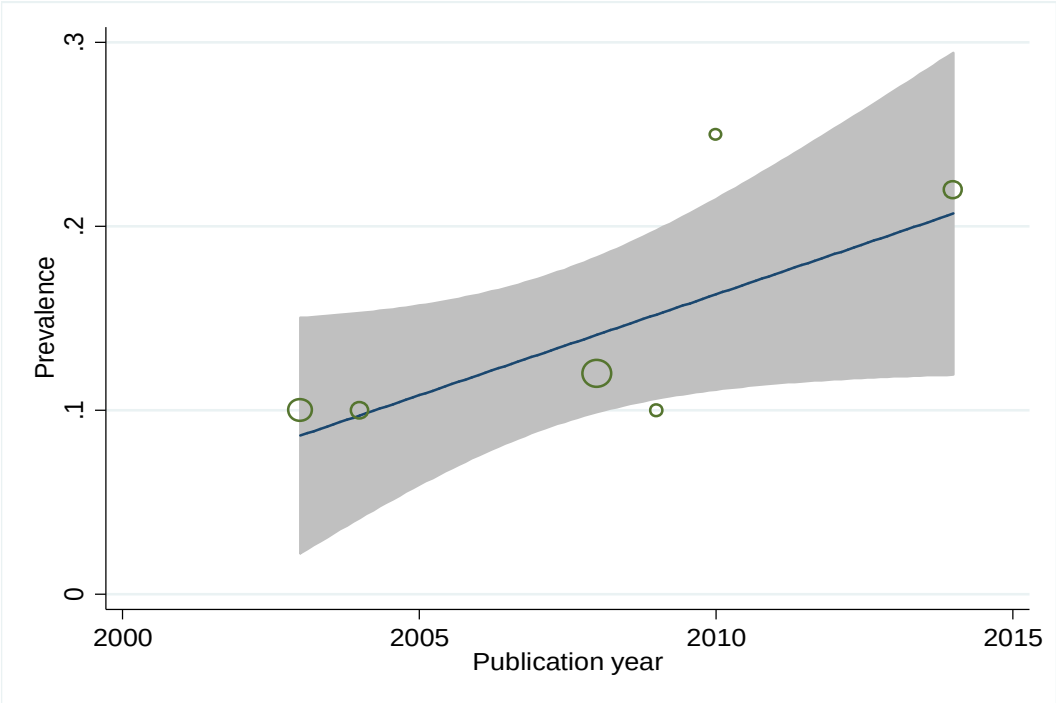

Figure 6:Meta-regression between study publication year and the prevalence of moderate depression in Iranian Infertile women

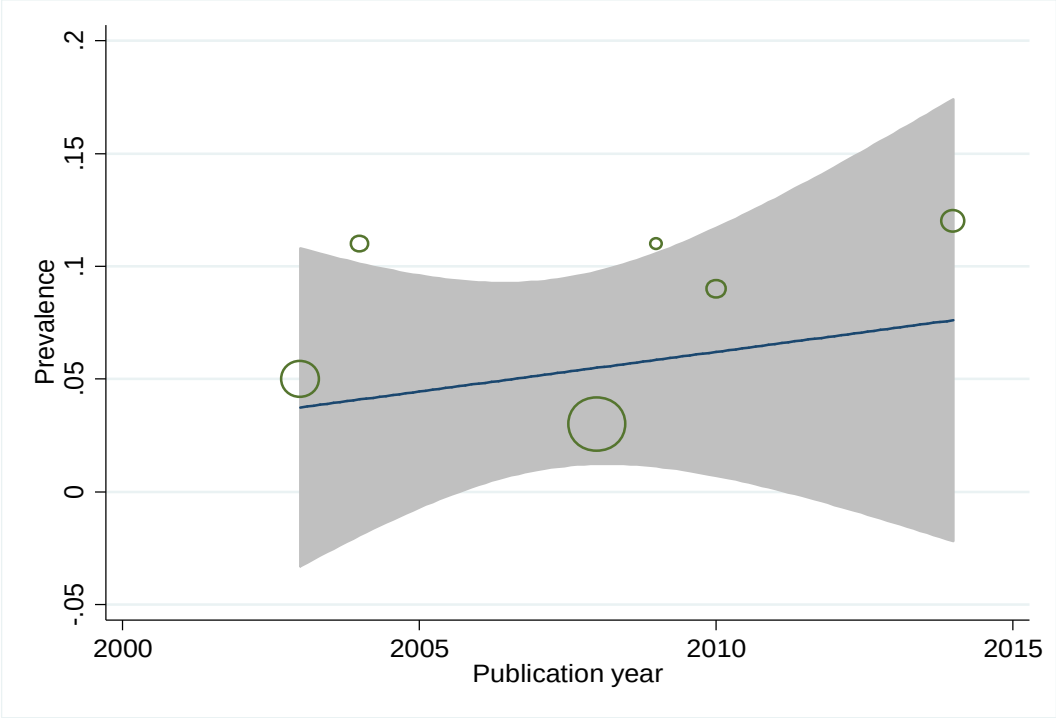

Figure 7:Meta-regression between study publication year and the prevalence of severe depression in Iranian Infertile women

Bias in publishing articles

The funnel plot in Figure 8 does not show the diffusion bias and is a symmetrical funnel diagram.

Circle size indicates the size of the study (larger circles show more samples and smaller circles show fewer samples) (Figure 8).

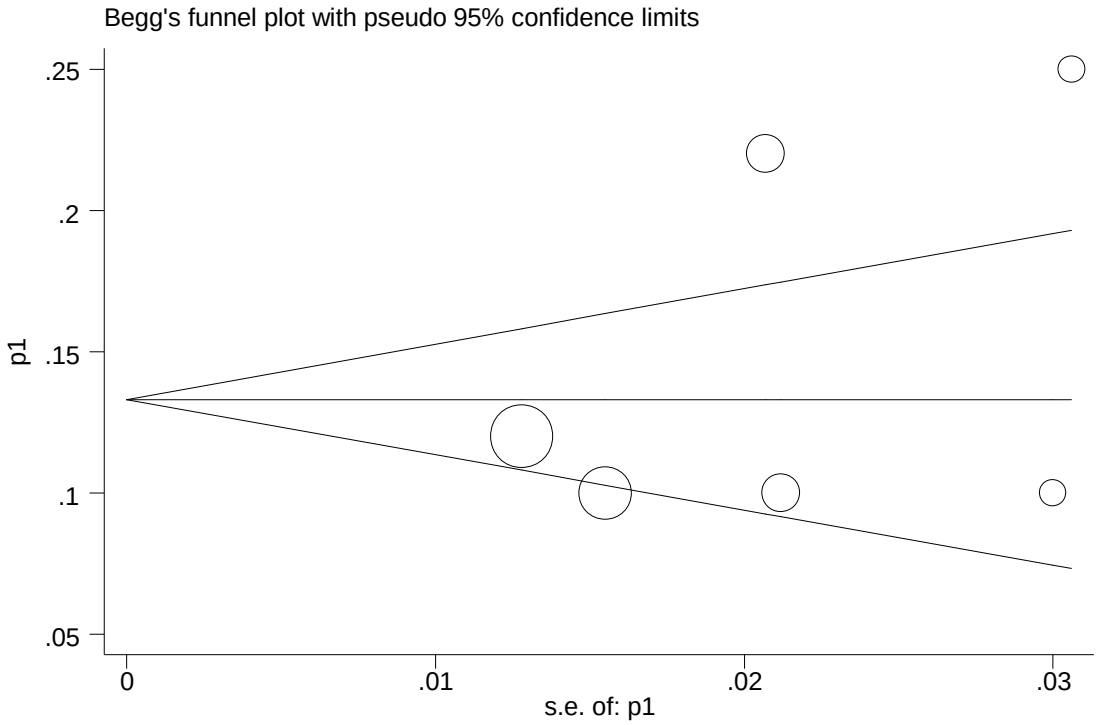

Figure 8:Begg's funnel plot for publication bias

Discussion

A total of 2008 infertile women were evaluated. All studies were retrospective.A total of 6 studies from 4 provinces that met the inclusion criteria were reviewed.Among these studies, 2 studies from Tehran, 3 studies from Mashhad, Urmia and Mazandaran were included in the study.The risk of bias was low in most studies. The main method of data collection was medical records and questionnaires. In Japan and Nigeria, the level of anxiety and depression in infertile women was higher than in fertile women, but in a number of studies, there was no significant difference between the level of depression and anxiety in fertile and infertile women (26).In a study conducted at the University of Tehran, depression in infertile women was associated with the cause of infertility, duration of infertility, educational level and occupation of women (27).The phenomenon of fertility is a physiological process in living things that in humans, in addition to physiological aspects, also has social and psychological dimensions.Studies have shown that infertility can have many psychological consequences (24).The fact that a person, naturally and like other normal people, cannot follow the process of reproduction and have a child, is itself one of the most bitter life experiences that psychological and social contexts and conditions can add to its importance. Turn it into a psychological crisis for the person.Infertile women are among those in society who are exposed to psychological and personal harm.Lack of ability to reproduce and the common social reactions in society to this group of people cause a lot of psychological stress for this group (28).Infertility is seen as an individual crisis that can put a lot of stress and strain on couples and threaten their mental health in various ways(25).It can also disrupt the quality of marital relationships, reduce intimacy and fear of ending the relationship, separation and divorce, and reduce self-esteem and feelings of exclusion from family and society, all of which can predispose a person to mental illnesses such as depression and Anxiety and lack of enjoyment of married life.It seems that infertile couples because of depression and anxiety caused by infertility under the psychological pressure of his side and the community, which makes the partnership are only going to have a baby take no satisfaction in this There should be a relationship between the parties.Although depression is one of the most common illnesses in today's society, seeking help is much less than the actual prevalence of the disease and the prevalence of depression is usually lower than the actual amount.The prevalence of depression in infertile people is higher than the whole society. In cases where depression is suspected with the help of screening questionnaires, the average score for infertile people is higher than the control group (28,29).Infertility can impair the quality of marital relationships and reduce intimacy, fear of ending a marital relationship, separation, divorce, low self-esteem, feelings of rejection and helplessness, and frustration.Studies have shown that the prevalence of depression in infertile women is higher than the general female population.

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How to cite this article:
Mania Kaveh. (2020). The Prevalence of Depression in Iranian Infertile Women Referred to Infertility Clinics: A systematic review and meta-analysis. Int. J. Curr. Res. Biol. Med. 5(11): 17-26.
DOI: http://dx.doi.org/10.22192/ijcrbm.2020.05.11.003