



The Effect of Psychological Interventions on Sexual and Marital Satisfaction: A Systematic Review and Meta-Analysis

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Abstract

Background: Sexual and marital satisfaction play an important role in the stability of couples' relationships, so it is necessary to take a proper approach to promote them. This study aimed to identify and categorize psychological interventions affecting sexual satisfaction and marital satisfaction of women in Iran.

Methods: An electronic systematic review search was conducted using the Persian and English databases of SID, Embase, PubMed, Scopus, Web of Science, Medline, Cochran library, and Google Scholar motor engine until 2021 to identify all relevant clinical trials and experimental and quasi-experimental studies assessing the effect of psychological interventions on sexual and marital satisfaction.

Results: Totally, we retrieved 528 studies from the previously mentioned databases, of which, 38 met the eligibility criteria. The subgroup meta-analysis of 4 studies conducted showed that interventions based on individual consultations increase sexual satisfaction (MD: 2.94, 95% CI: -0.36 to 6.24, $P = .23$), ($I^2 = 30.83\%$). The subgroup meta-analysis of 10 studies conducted revealed that couple-based consultations increase marital satisfaction (MD: 5.93, 95% CI: -2.59 to 9.27, $P = .95$), ($I^2 = 0\%$).

Conclusion: The results of meta-analysis demonstrated the effect of counseling-based psychological interventions on increasing sexual and marital satisfaction of couples. However, further clinical trials are required before making a definitive conclusion.

Keywords: Psychological interventions; Sexual satisfaction; Marital satisfaction; Randomized controlled trial; Experimental

Introduction

The marital adjustment and satisfaction of couples are regarded as important factors in creating a good and stable relationship (1, 2). In fact, marital

satisfaction is defined as a sense of joy and happiness of a couple in living together. For most couples, marital satisfaction can even be considered as



the main source of social support and protection against physical and mental illness and cause life satisfaction and success in the community (3, 4). High level of marital satisfaction between couples leads to the increased adjustment ability and establishment of social relation, longer life expectancy, and reduced risk of depression and mental disorders. In addition, the children of these families achieve higher level of education with more adjustment ability (5). Marital satisfaction is influenced by many factors, including age, duration of marriage, education, and income, personality traits, religion, emotional intelligence, sexual relations, personal health (4), and age difference between couples.

Sexual satisfaction is raised as one of the important indicators in forming marital satisfaction (6). Further, sexual satisfaction is considered as an individual need with positive and negative aspects of interpersonal relationship and plays a prominent role in the mental health of couples (7, 8). In general, sexual satisfaction is defined as the emotional response arising from one's subjective evaluation of sexual relationship with his spouse (9). Some factors, such as age of woman, age difference with husband, economic status, method of contraception (10), mood disorders, anxiety (11) and length of marital life affect sexual satisfaction (12).

There is a significant relationship between marital and sexual satisfaction and dissatisfaction in both of them plays a proven role in increasing women's desire for illicit relationships (13) and the rate of divorce and dissolution of the family unit (14). Considering the importance of sexual and marital satisfaction in the stability of couples' relationships, strengthening family foundation, and consequently, the formation of society, it is necessary to identify an appropriate interventional strategy to promote sexual and marital satisfaction of couples.

Although several studies have been conducted on the effect of counseling interventions on sexual and marital satisfaction with different findings, no review study has been conducted for an evidence-based conclusion in this regard. Therefore, this

systematic review and meta-analysis aimed to identify and categorize psychological interventions affecting sexual satisfaction and marital satisfaction of women in Iran.

Methods

Data source and identification of studies

An electronic systematic review search was conducted using the Persian and English databases of SID, Embase, PubMed, Scopus, Web of Science (WoS), Medline, Cochran library, and Google Scholar motor engine until 2021 to identify all relevant clinical trials and experimental and quasi-experimental studies assessing the effect of psychological interventions on sexual and marital satisfaction. The list of all articles found was examined to find relevant articles. MeSH terms and non-MeSH terms included marital satisfaction, sexual satisfaction, consulting interventions, anxiety, and stress.

Inclusion and exclusion criteria

All clinical trial, experimental, quasi-experimental, and interventional studies related to the effect of counseling and psychological interventions on sexual and marital satisfaction were included in the present study. PICO including as:

Population: All the married women.

Intervention: The intervention group received psychological and consultation in regard their marital or sexual satisfaction

Comparison: The comparison group included married women who received no intervention.

Outcomes: Marital and sexual satisfaction.

Data extraction

Two researchers independently reviewed the screened and eligible articles to reduce publication bias and error. After removing the duplicates, the title and abstract of the studies were thoroughly screened to exclude the irrelevant studies and overlapping data (Fig. 1). Then, the full text of all remaining articles was carefully inspected for eligibility. If necessary, the third researcher was consulted on resolving any conflict or disagreement between the two researchers (Table 1).

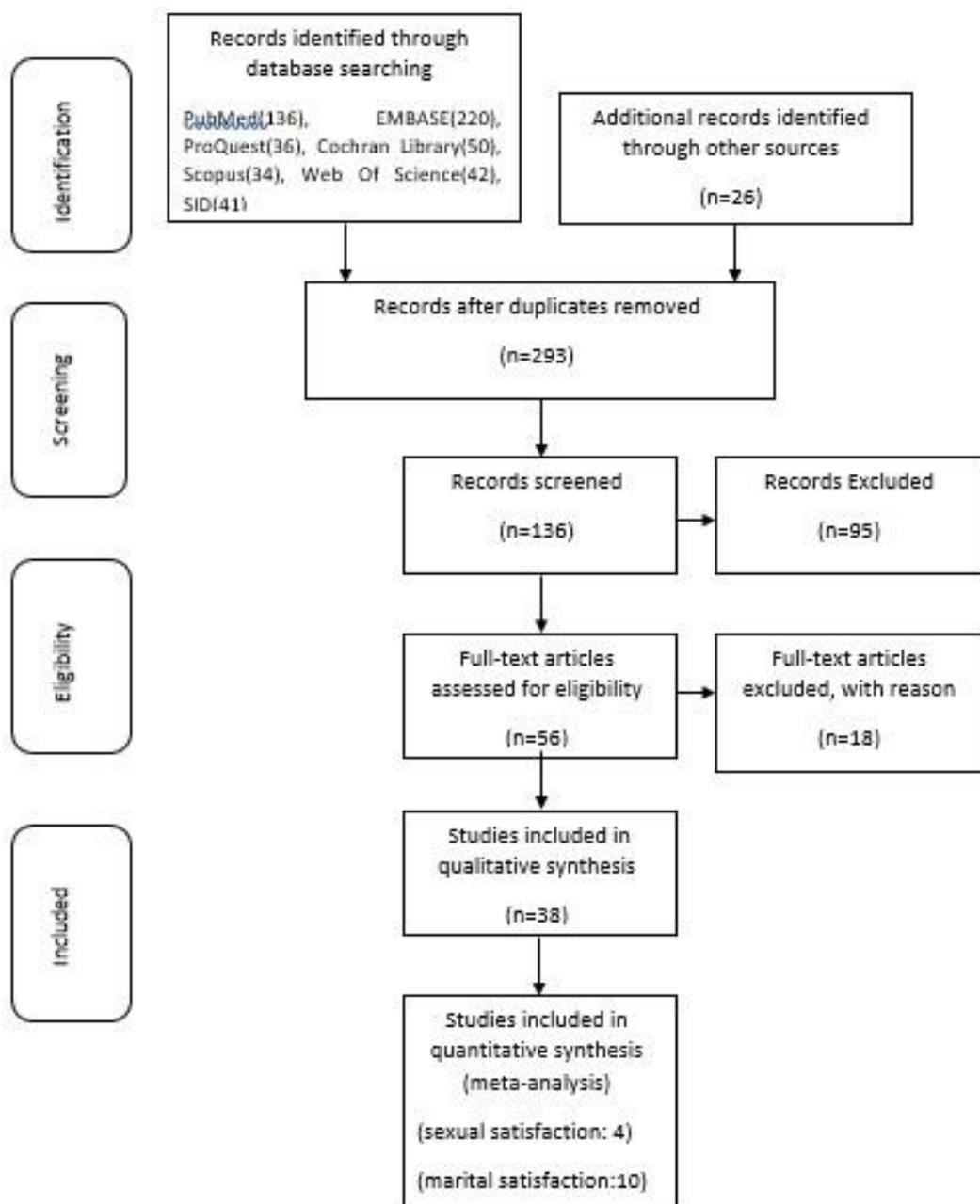


Fig. 1: PRISMA flow chart summarizing the study screening and selection process

Assessment of risk of bias in included studies

The quality of studies was assessed in terms of various risks, including the selection bias, performance bias, detection bias, attrition bias, and reporting bias and other biases by two independent researchers according to the Cochrane handbook.

Each study was rated as either low risk, unclear or high risk according to the reports, and disagreements were resolved by consulting a third person. Performance bias had the highest risk due to the nature of these studies, as blinding the participants and providers was not possible (Figs. 2 and 3).

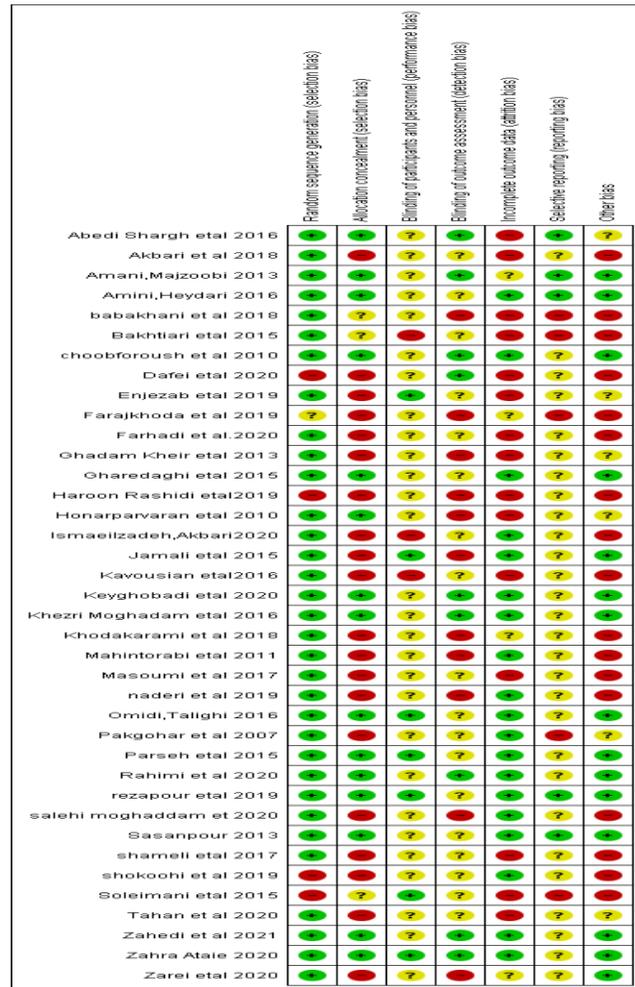


Fig.2: Risk of bias summary as percentages across all included studies

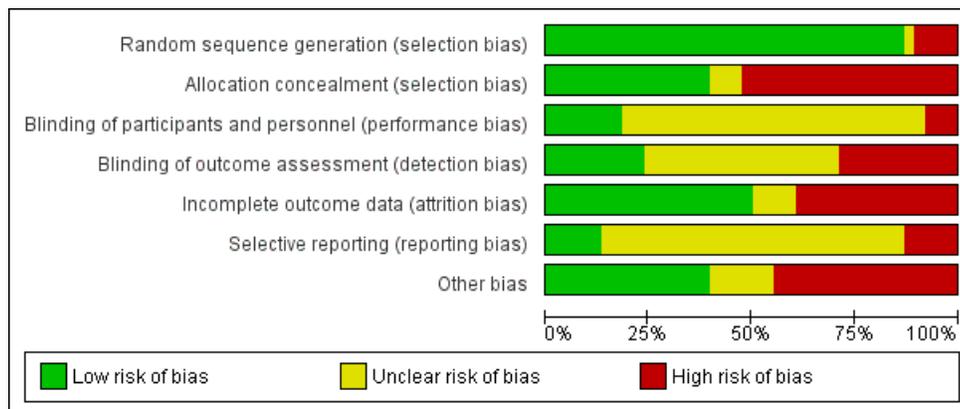


Fig.3: Risk of bias summary for each included study

Statistical method

The STATA16 (StataCorp, College Station, Texas, USA) was used for statistical analysis. The standardized mean difference (SMD) and 95% confidence interval (CI) were estimated as the effect size for the desired outcomes of sexual and marital satisfaction. The heterogeneity of studies was evaluated using random effects model. The statistical heterogeneity of studies included was checked using I^2 test and P -value was assessed. If $P < 0.05$ and $I^2 > 75\%$, heterogeneity was considered significant (15, 16). In addition, Egger's and Begg's test were used to assess the publication bias (17, 18). Further, we conducted sensitivity analysis and removed trials that ran a high risk of bias based on selection bias.

Results

The systematic literature search retrieved 528 articles. After removing duplicates and screening the title and abstract of the articles, the full text of the remaining 56 studies were inspected carefully for eligibility. Finally, 38 articles, were selected for the systematic review. Meta-analysis was performed for ten studies with marital satisfaction outcome and four studies with sexual satisfaction outcome (Fig.1). The minimum and maximum sample size in the studies were 4 (19) and 198 (20), respectively. Based on the type of intervention, articles were classified into general categories of individual and couple counseling interventions.

Investigating the effectiveness of relationships enrichment education on the improvement of marital satisfaction in some studies (21-23) indicated that this intervention through behavioral changes enables individuals to create new lifestyles to alter their unfavorable marital relationship and improve the quality of life of themselves and their spouse. The intervention included 7 sessions of 90-minute relationship enrichment education, including marital intimacy, conflict resolution, improving sexual relations, home management, etc.

Some quasi-experimental studies demonstrated that CBT influenced marital satisfaction in the post-test stage. CBT improves sexual desire of

women and consequently, their husbands and overshadows sexual satisfaction by increasing sexual awareness and skills, imagination, understanding the causes of decreased sexual desire and expressing emotions (24-28).

Further, the effect of cognitive-behavioral counseling on marital satisfaction of 60 infertile women in Isfahan was investigated using virtual education (29). The intervention group received training and cognitive-behavioral counseling via WhatsApp. In this way, the samples received 30 min of training and counseling in 5 wk, and their questions were answered via text message or call. In this study, despite the increase in marital satisfaction score after the intervention ($P=0.187$), virtual education and counseling did not lead to a significant change in the marital satisfaction of infertile women in the intervention group compared to the control group.

Omidi and Talighi (30) (Includes 10 counseling sessions for 50 couples who refer to the counseling center in Kashan) and Kavousian et al. (1) (Based on acceptance and commitment therapy protocol a 12-session intervention was conducted over a period of 3 months) investigated the effectiveness of marital therapy based on the ACT on couples' marital satisfaction. The results demonstrated the effectiveness of the intervention in increasing couples' sexual satisfaction by improving marital relationship through reducing stress and anxiety, understanding the consequences of negative communication, and eliminating conflicting behaviors.

In addition, Abedi Shargh et al. (31) and Ismaeilzadeh and Akbari (32) examined the effectiveness of mindfulness-based cognitive therapy (MBCT) in marital satisfaction of women. MBCT leads to a better understanding of marital life events, better adjustment to different cohabitation situations, correction of negative behavioral patterns, and creation of positive changes in the individual's mental states, and consequently, increases the level of marital satisfaction of couples.

The positive effect of couple therapy education on marital satisfaction of couples was reported in some studies (33-36).

In a study, participants were selected among women referred to counseling centers in Tehran in 2019 to complain of sexual dissatisfaction and they were assigned into CBT (n=15), ACT (n=15), and control groups (n=15) (37). Each intervention group received 9 therapy sessions of 90 min and control group did not receive any treatment. The results indicated the positive effect of both interventions with the greater effect of ACT in increasing marital satisfaction. However, despite the positive effect of 8 two-hour sessions of CBT and ACT on increasing marital satisfaction of the intervention groups (each intervention group including 20 couples referred to counseling centers in Khorramabad) compared to the control group,

CBT counseling played a greater role in improving marital satisfaction (38).

In another study, the effectiveness of emotionally focused, cognitive-behavioral, and cognitive emotional behavior therapy were compared for couple's marital satisfaction (39). All three methods of couple therapy are effective in increasing marital satisfaction. Although emotionally focused therapy for couple (EFT-C) is more effective than cognitive-behavioral couple therapy (CBCT) in follow-up scores (one and three months later), cognitive emotional behavior therapy (CEBT) is more effective than the other two methods during treatment and follow-up.

Table 1: Characteristics of the included studies

Reference	Study Design	Participants	Intervention	Outcome(s)	Outcome Measure	Result
(1)	quasi-experimental pretest-posttest study	40 Students of azad university of bandarabbas	Acceptance and commitment therapy	Marital satisfaction	Enrich questionnaire	The positive effect of ACT on marital satisfaction
(23)	RCT	70 womens referring to health centers of Shahid Beheshti University	Sexual Skills Training	Sexual satisfaction	Enrich questionnaire LARSON questionnaire	The positive effect of intervention on swxual satisfaction
(22)	Quasi-experimental with pre-test and post-test	28 couples referring to couple therapy centers in Tehran	Sexual Skills Training	Marital satisfaction	Enrich questionnaire	Sexual skills training increased marital satisfaction.
(26)	Quasi-experimental with pre-test and post-test	30 couples referring to psychological centers in Shushtar	Cognitive-behavioral family therapy	Sexual satisfaction	Marital Conflict Questionnaire (MCQ) Kermani Sexual Satisfaction Questionnaire (SSQ)	Cognitive-behavioral family therapy had an effect on marital conflicts and sexual satisfaction.
(32)	Quasi-experimental with pre-test and post-test	30 women referring to counseling centers in District 1 of Tehran	Mindfulness-Based Cognitive Therapy	Marital satisfaction	Enrich questionnaire	Improving marital satisfaction in couples with marital differences influenced by mindfulness.
(40)	Two-groups clinical trial study	30 nulliparous women (20-30 wk)	Mindfulness-based cognitive therapy	Marital satisfaction	Enrich questionnaire	positive effect of mindfulness-based cognitive therapy counseling on increasing marital satisfaction
(41)	semi experimental research with two-group and post-pretest and follow up	28 married women referred to Ziaee center of Ardakan city	Commitment Based Intervention	Sexual satisfaction	LARSON questionnaire	commitment based intervention have a positive effect on sexual satisfaction
(42)	semi experimental research with two-group and post-pretest	20 women with sexual desire disorder who referred to the psychology clinic of Taleghani Hospital in Tehran	Cognitive-Behavioral Therapy	Marital satisfaction	Golombok-Rust Inventory of Marital State (GRIMS) questionnaire	Increasing marital satisfaction

(35)	quasi-experimental with pre-test-posttest and follow-up design and control group	30 female students of Islamic Azad University Dezful branch	positive couple therapy	Sexual satisfaction	LARSON questionnaire	Increasing sexual satisfaction
(43)	RCT	70 women referred to Ardabil health centers	Reality Therapy Based on Choice Theory	Sexual satisfaction	Hudson et al's Sexual Satisfaction Questionnaire	Increasing women's sexual satisfaction
(38)	semi experimental research with two-group, pre-test and post-test and follow up	60 couples referring to counseling centers in Khorramabad	ACT & CBT	Marital satisfaction	Enrich questionnaire Battalion questionnaire	Positive effect of both interventions on increasing marital satisfaction of couples (greater effect of CBT compared to ACT)
(30)	semi-experimental study	50 couples referring to Kashan Conscious Mind Center	Marital Therapy based on Acceptance and Commitment	Marital satisfaction	Enrich questionnaire	Increasing marital satisfaction of couples
(44)	semi-experiment, pre-test and post-test with a control group	30 women with marital problems were referred to Kerman Counseling Center	Mindfulness-based Stress Reduction	Marital satisfaction	ENRICH questionnaire	Increasing marital satisfaction
(29)	Clinical trial study	60 infertile women referred to Isfahan infertility centers	Cognitive-Behavioral Counseling	Marital satisfaction	ENRICH questionnaire WHOQOL-BRE	The intervention did not cause a significant change in the marital satisfaction of infertile women
(39)	semi experimental research with two-group and pretest-post test and follow up	45 couples with marital dissatisfaction	Emotion-oriented couple therapy and Cognitive-behavioral and Cognitive-behavioral-emotional	Marital satisfaction	ENRICH questionnaire	Increasing marital satisfaction (more in cognitive-behavioral-emotional couple therapy)
(45)	RCT	36 pregnant women referred to Valiasr Reproductive Health Research Center	Interpersonal psychotherapy and Cognitive-Behavioral therapy	Marital satisfaction	ENRICH questionnaire	Increased marital satisfaction in both groups
(21)	Clinical trial with pre-test-post-test design with control group	32 married female students of Khomeini Shahr Azad University	Relationships Enrichment Education	Marital satisfaction	Spanier Marital Adjustment Questionnaire (DAS)	Positive effect of intervention on increasing marital satisfaction of couples
(27)	Quasi-experimental research	30 married women with children referring to Tehran Cultural Centers	Cognitive-Behavioral therapy	Marital satisfaction	ENRICH questionnaire	The effect of intervention in the prevention of marital dissatisfaction
(28)	quasi experimental study with pre-test-post test design which has a control group and 1 month follow-up	24 infertile women referring to yazd infertility and gynecology clinics in summer 2009	cognitive behavioral stress management therapy	Marital satisfaction	ENRICH questionnaire	The effectiveness of the intervention on marital satisfaction
(25)	RCT	30 women referring to one of the psychological service centers in Kashan	cognitive behavioral therapy	Marital satisfaction	Golombok-Rust Inventory of Marital State (GRIMS) questionnaire	Improving couples' relationships by improving marital satisfaction resulting from the intervention
(24)	quasi-experimental pretest-posttest with a control group	20 married employees of Kermanshah police force	cognitive behavioral therapy	Marital satisfaction	ENRICH questionnaire	Improving marital satisfaction
(46)	semi-experimental	30 married women referred to the Family Counseling	group-based reality therapy based on choice theory	Marital satisfaction	ENRICH questionnaire	Positive effect of intervention on marital satisfaction

(47)	semi-experimental design with a post-test, pre-test, and control group design	Center in District 9 of Tehran Municipality during the first 6 months of 1397 60 couples who referred to the reproductive health centers of Tehran and had at least one DSM-V criteria had sexual dysfunction	Communication Skills Training and Cognitive-Behavioral Therapy	Marital satisfaction	ENRICH questionnaire	communication skills training and cognitive behavioral therapy could significantly increase marital satisfaction
(48)	Quasi experimental pre-test - post-test with the control group	30 married women referring to health centers in Mashhad	rational – emotional behavioral therapy	Marital satisfaction	Walter W. Hudson Marital Satisfaction Index	The effectiveness of the intervention on increasing women's marital satisfaction
(49)	semi-experimental research with single group pretest–posttest	66 parents of Tehran school students	emotion regulation skills based on cognitive - behavioral approach	Marital satisfaction	Walter W. Hudson Marital Satisfaction Index	training has significantly increased marital satisfaction
(36)	semi-experimental pre-test and post-test study with control group	40 couples diagnosed with sexual dysfunction referred to Bahar Consulting Center in Mashhad in 2019	Psychoeducational Group Therapy	Marital satisfaction	ENRICH questionnaire	improving marital satisfaction
(50)	clinical trial with a pre-test and post-test design	64 pregnant women referring to Asadabad health centers in Hamadan	Life Skills Counseling	Marital satisfaction	ENRICH questionnaire	The positive effect of counseling on marital satisfaction of people, especially pregnant women
(31)	clinical trial with a pre/posttest plan for control group	60 infertile women referred to the gynecology clinic of Ali Ibn Abi Talib Hospital in Zahedan	Mindfulness-Based Cognitive Group Therapy	Marital satisfaction	ENRICH questionnaire	Improving the marital satisfaction of infertile women
(51)	RCT	80 pregnant women referring to health centers of Malayer	Sexual Counseling	Marital satisfaction	ENRICH questionnaire	sexual counseling was associated with marital satisfaction and was effective in its promotion.
(52)	experimental methods with preparing pretest and posttest with control group	20 couples who refer to Mehrasa consultation center in Isfahan (IRAN)	sexual cognitive reconstruction therapy	Sexual satisfaction	Hooper sexual problems	The intervention has been effective in reducing sexual problems and increased sexual satisfaction.
(53)	pretest, post-test and a control group	16 couples who had called on the state and private consulting centers of shiraz	Emotionally Focused Couple Therapy (EFT-C)	Sexual satisfaction	index of sexual satisfaction (ISS) by Hudson	couples therapy exerted an increasing influence on sexual satisfaction in couples.
(54)	controlled clinical trial	100 infertile women referred to Valiasr Clinic in Tehran	Counseling	Sexual satisfaction	Lee and Sun Sex Satisfaction Questionnaire	Increased sexual satisfaction in the intervention group 3 months after the intervention
(19)	semi-experimental study based on an AB-type single case study design with follow-up	40 married women who referred to urban health centers of Shahin Shahr	problem-solving approach consulting	Sexual satisfaction	Married Women's Sexual Satisfaction Questionnaire (MWSSQ)	consulting based on problem-solving approach increased sexual satisfaction in the participants.
(55)	controlled randomized study	40 women who referred to the health centers of yazd in 2016	mindfulness-based cognitive therapy consultation	Sexual satisfaction	LARSON questionnaire	The effectiveness of counseling in increasing women's sexual satisfaction

(34)	semi-experimental study with a pre- and post-test design	30 couples from couples who referred to infertility centers during 2013	Emotionally Focused Couples Therapy	Sexual satisfaction	index of sexual satisfaction (ISS) by Hudson	EFT-C significantly impacted sexual satisfaction
(20)	RCT	198 women who had referred to selected health centers of Hamadan in 2016	Cognitive-Behavioral Consultation	Sexual satisfaction	Female Sexual Function Index (FSFI)	Improving sexual satisfaction in the intervention group
(56)	semi-experimental pre-test and post-test study with control group	40 couples of all hurt couples who referred to psychological clinics in Shiraz	acceptance and commitment therapy	Sexual satisfaction	LARSON questionnaire	Significant effect of intervention on increasing sexual satisfaction
(37)	experimental design with pre-test and post-test with the control group	45 women with sexual dissatisfaction who were referred to counseling centers in Tehran in 2019	Acceptance and Commitment Therapy and Cognitive-Behavioral Therapy	Marital satisfaction	Enrich questionnaire	Positive effect of both interventions with more effect of ACT on increasing marital satisfaction

Meta-analysis results

The results of the present meta-analysis demonstrated a high heterogeneity among included studies ($I^2=88\%$). Therefore, subgroup analysis was done for sexual and marital satisfaction based on the type of counseling, including individual and couple counseling.

Sexual satisfaction

The subgroup meta-analysis of 4 studies conducted showed that interventions based on individual consultations increase sexual satisfaction (MD: 2.94, 95% CI: -0.36 to 6.24, $P=.23$), and the random effect model was used due to the high heterogeneity ($I^2 = 30.83\%$) (Fig. 4).

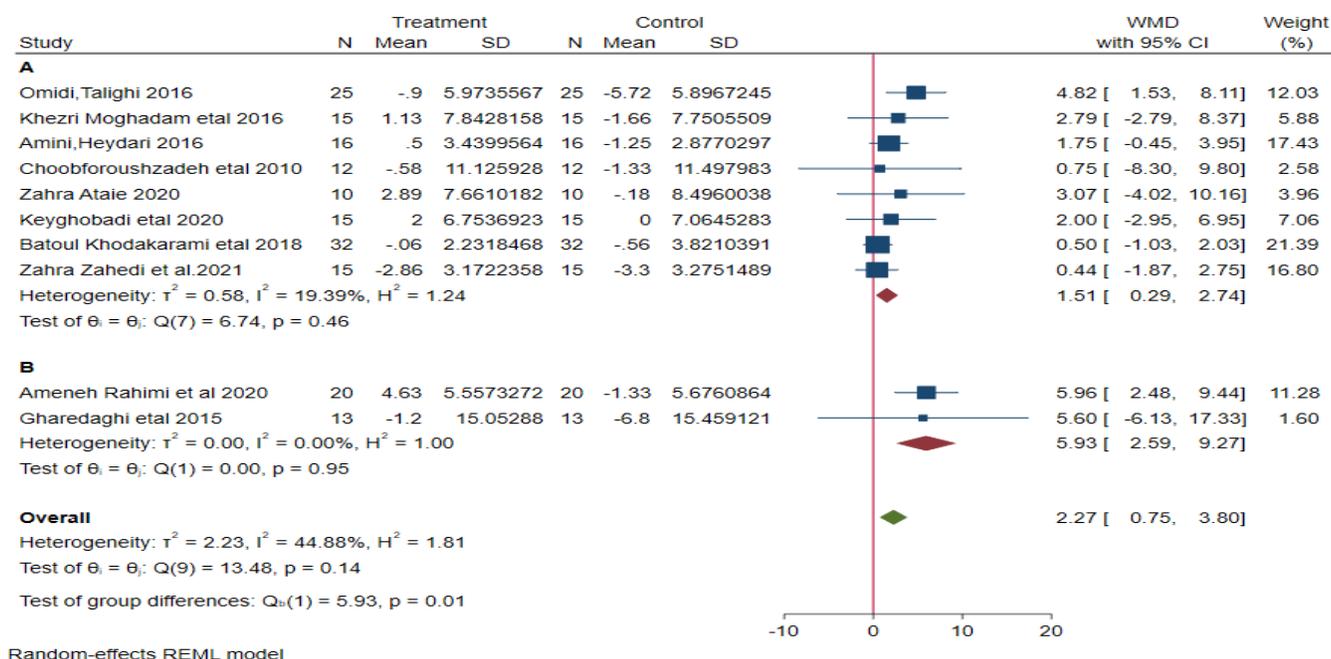


Fig. 4: Forest Plot of Individual Standardized Mean Difference of Marital Satisfaction for Intervention versus the Control Group

Marital satisfaction

The subgroup meta-analysis of 10 studies conducted revealed that couple-based consultations increase marital satisfaction (MD: 5.93, 95% CI: -2.59 to 9.27, $P = .95$), and the random effect model was employed due to the high heterogeneity ($I^2 = 0\%$) (Fig. 5).

Publication bias

Egger and begg tests were performed for sexual and marital satisfaction, the result was $P = 0.706$ and $p = 1.26$ for sexual satisfaction and $p = 0.237$ and $p = 0.283$ for marital satisfaction, respectively, which was not significant and illustrated no publication bias (Figs. 6-7).

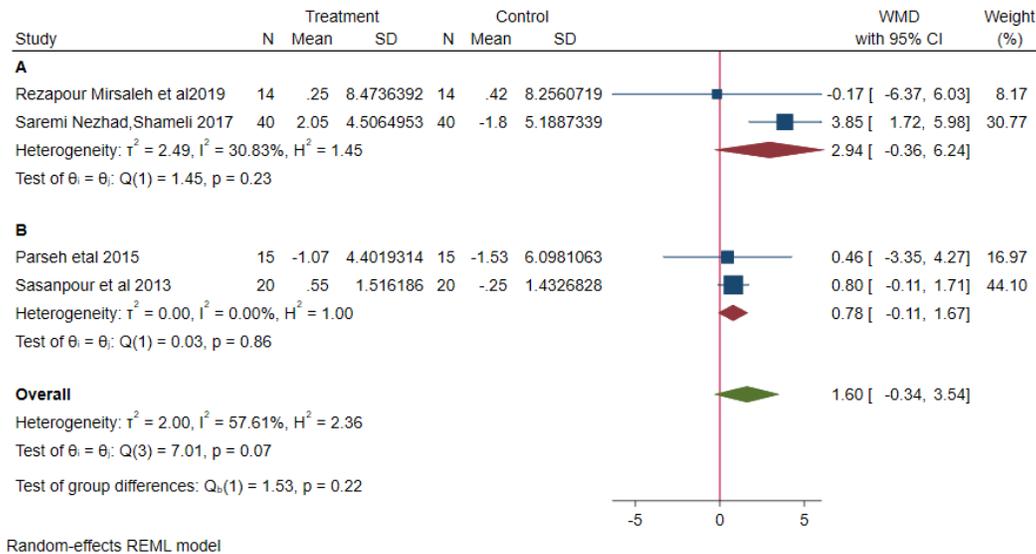


Fig. 5: Forest Plot of Individual Standardized Mean Difference of Sexual Satisfaction for Intervention versus the Control Group

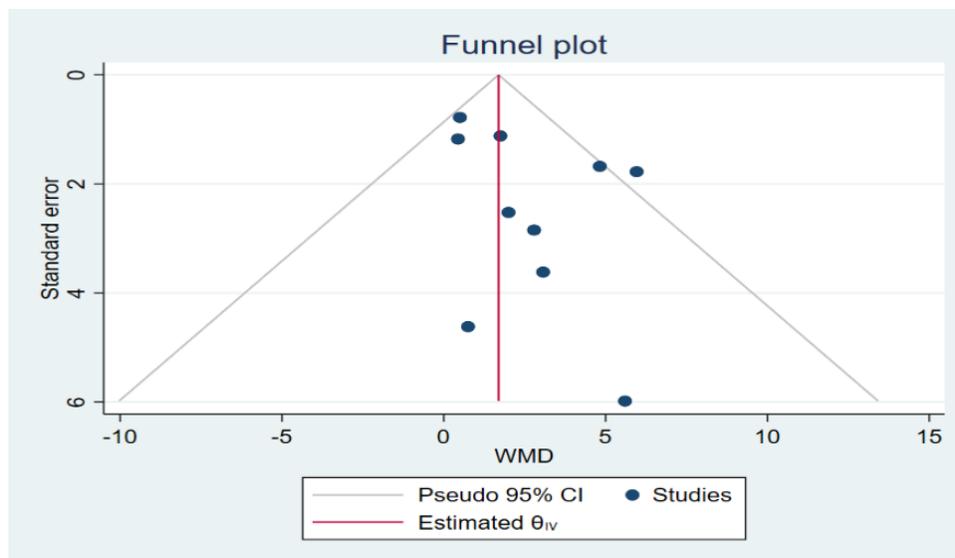


Fig. 6: Funnel Plot of Standardized Mean Difference vs. the Standard Error for Intervention and Control Groups and After subgroup analysis (based on intervention type) in Marital Satisfaction Outcome

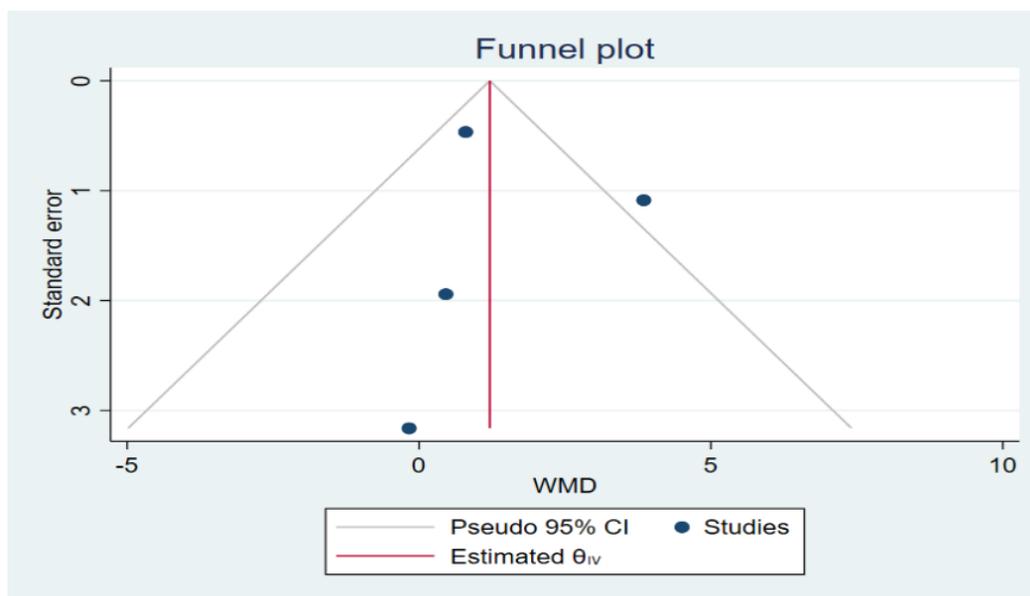


Fig. 7: Funnel Plot of Standardized Mean Difference vs. the Standard Error for Intervention and Control Groups and after subgroup analysis (based on intervention type) in Sexual Satisfaction Outcome

Discussion

Studies with different counseling approaches reported conflicting findings. Most studies conducted on the effect of the education of life skills (50) and relationship enrichment (21) on marital satisfaction and the role of sexual skills education on sexual satisfaction revealed the effectiveness of the intervention method on the sexual satisfaction. However, in a clinical trial (29), despite the increase in marital satisfaction of the intervention group after counseling compared to the control group, this difference was not significant.

Among reviewed studies, four studies were included in the group of ACT-based interventions. The effect of positive couple therapy on students' sexual satisfaction was investigated and the findings indicated an increase in sexual satisfaction in the intervention group (35). Furthermore, based on the results of two studies, EFT-C had an increasing effect on sexual satisfaction in couples (33, 34). The results of the interventions with individual counseling approach, problem-solving approach consulting (19), reality therapy based on choice theory (43, 46), sexual cognitive recon-

struction therapy (52), sexual counseling (51), rational-emotional behavioral therapy (48), counseling (54) and psychoeducational group therapy (36) illustrated that these interventions promoted the marital satisfaction of the participants. Additionally, two studies reported the effectiveness of CBT and ACT on marital satisfaction.

However, the comparison of the effectiveness of the aforementioned interventions indicated contradictory results. In the same vein, ACT was more effective than the other methods (37) and in contrast, CBT was reported as more effective than the other interventions (38). In addition, another studies (47, 57) demonstrated counselling with focus on sexual functions help to promoting marital satisfaction and also quality of sexual life of couples.

Strengths and limitation

The strengths of the present study were the use of relevant Persian and English studies, the existence of almost all psychological interventions in the studied articles, the presence of the control group in all studies, and the comparison of a large number of intervention methods with each other. The main limitations of the study included the difference in the assessment tools and questionnaires

used in studies, the difference in the number of sessions and how to conduct counseling in the same interventions, diversity in study participants (married women, pregnant women, couples, etc.), sampling by convenience sampling method in some studies, and the impossibility of blinding in studies due to the nature of the study.

Conclusion

Psychological interventions have a positive effect on improving the individual mental status of each person and consequently, his family and social interactions and can demonstrate their own effects at the community level. However, further clinical trials are required before making a definitive conclusion.

Journalism Ethics considerations

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

Conflict of interest

The authors declared that they have no conflict of interest.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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