

**ORIGINAL RESEARCH****The effectiveness of group training based on procedure marital infidelity phenomenology on infidelity tendency and intimacy of married traitor women**

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**Abstract**

**Introduction:** The purpose of this study was to design and evaluate the effectiveness of an intervention package on the attitude toward infidelity and marital intimacy among the infidel women.

**Materials and Methods:** The present research uses the pseudo experimental pretest-posttest-follow up methodology with a control group to investigate the effectiveness of the formulated intervention package. Population of the research includes all married infidel women who had referred to Entekhab No Psychology Clinic during 2019, with the statistical sample being made up of 30 married infidel women who had referred to Entekhab No Psychology Clinic. Following the introduction of the research objectives to obtain an informed consent from the participants, they were organized into experimental and control groups by observing the inclusion criteria. The standardized questionnaire on marital infidelity and the marital intimacy questionnaire presented by Vandon-Brouck and Bertommen (1995) were used in the pretest, posttest, and follow up stages. Mixed analysis of variance with repeated measures in SPSS v.24 was adopted to investigate the effectiveness of the formulated intervention package.

**Results:** The results implied that provision of training courses based on phenomenological description of the marital infidelity provides the infidel women with sustainably increased average levels of the sexual intimacy, negative attitude toward infidelity, religious encountering, problem-solving skill, and infidelity avoidance. The findings further indicated that such training material might lead to stably enhanced levels of intimacy, affection/amour, agreement and adherence to marital intimacy commitments among the infidel women.

**Discussion:** Based on the findings of this study, it can be argued that designing an intervention package based on the ecological status of the community under study can effectively improve the components of marital commitment and thus if used by therapists. It can be extremely helpful in preventing marital breakdowns in society.

**Keywords:** Infidelity, Intervention package, Married women

## Introduction

Infidelity is one of the most significant factors facing the health of families with a serious challenge nowadays; in other words, infidelity is the most important factor threatening the function, stability, and continuity of marital relationships (1). Infidelity refers to any type of sexual or emotional relationship beyond the limits of committed relations between a married couple (2); in other words, infidelity is the violation of the commitment in a two-person relationship which leads to various levels of emotional or physical intimacy with a person outside the relationship (3) and, from another point of view, is of the four following types: sexual infidelity, emotional infidelity, compound infidelity (emotional and sexual), and virtual infidelity (including phone sex, sexual conversations, and watching porno movies); In fact, from flirting to sexual intercourse, there is a wide range of two-person behaviors which may have various levels of intensity (4), while the common conception of infidelity is having sexual intercourse with a third person (5).

Researches carried out on the spread of sexual infidelity in the American society demonstrate that the spread of the duration of sexual infidelity is about 20 to 25 percent (6); and in case a wider definition of infidelity as well as emotional factors are also taken into consideration, the amount is estimated to be doubled (7); in fact, the wide variety of the estimation of this problem depends on the definition of infidelity provided by the scholars (8-9-10). It must be noted that, considering the researcher's investigations in the authentic domestic resources, no official statistics was found on the spread of infidelity in the Iranian women and men. There are only a few researches pointing to the wide spread of sexual problems in the people wanting a divorce; for example, Rahmatollahi (11) has demonstrated sexual problems in %91 of damaged marriages.

Similar to many other social phenomena, infidelity is also a multi-dimensional, complex, and immense issue with several potential factors involved in its occurrence; Brown (12) believes that the increase in secret relationships outside the limits of marital life is caused by the interaction of several factors: more expectations for emotional satisfaction in marriage, lack of communication skills and

close relations, as well as sexual revolution and changes in the structure of everyday life are among these factors; some experts argue that personality and personal factors, factors related to marital relationship, the level of satisfaction with the relationship, and social, cultural, and environmental macro-factors are among the predictors of infidelity (13).

Scholars have demonstrated that a large number of perpetrators of infidelity experience cognitive conflicts in their self-concept and behaviors at the same time; the conflict lies in the fact that these people consider themselves faithful and blame infidelity, while their behaviors have an infidelity nature. Theoretically speaking, these conflicting understandings lead to the experience of cognitive dissonance (14-15); therefore, perpetrators of infidelity must report psychological experiences indicating cognitive dissonance such as: dissonance in the self-concept; psychological affliction and weak general emotions, for example, low levels of positive emotions and high levels of negative emotions (16-17); briefly speaking, the way perpetrators of infidelity think and act may conceptualize in the form of the cognitive dissonance process: the conflict between infidelity behaviors and the self-concept leads to cognitive dissonance in the perpetrators and, as a result, they reduce it through dissonance reduction strategies (18).

Infidelity may be experienced by some people during a stage in their lives and its continuity may lead to unhealthy lifestyles and problems for the mental health of the hurt spouse including depression, disorder in communications, addiction to drugs and alcohol, and, in some acute cases, suicide; Infidelity is reliably associated with poorer mental health particularly depression/anxiety and PTSD (19), and relationship dissolution/divorce (20,21). Which has been shown to adversely impact offspring (22). Indeed, across 160 societies infidelity is the single most common cause of marital dissolution (23).

Infidelity always leads to extreme emotional blows to both parties and makes the foundation and the system of the family face challenges, thus, conducting researches related to this field that can help improve the couples' knowledge with regard to the underlying factors for the occurrence of infidelity is

necessary; infidelity can lead to serious emotional consequences in the couple; medical observations and scientific studies show that the disclosure of infidelity has a destructive and painful effect on couples. Medical experts report that in a person hurt due to infidelity, extreme emotions usually fluctuate between the feeling of anger towards the spouse and internal feelings of shame, depression, helplessness, and exclusion (18). Furthermore, other reactions after the disclosure of infidelity include violence and revenge towards the infidelity person, fatigue, boredom, aimlessness, feeling like a victim or feeling abandoned (18) feeling of shock, disbelief and denial(24) beating, murdering the spouse or committing suicide(25)

As noted above and since intervention methods in marital infidelity have often been designed and implemented after the occurrence of this phenomenon and with the aim of treating people affected by marital infidelity, this study looks for the answer of the question that whether designed group training based on marital infidelity Phenomenology is effective on marital infidelity tendency and marital intimacy in the married traitor women or not.

### **Materials and Methods**

The research method was a quasi-experimental method and performed pre-test, post-test, and follow-up with the control group. The intervention package was designed based on the extracted categories and themes from the Phenomenological Study, which was administered on the Intervention group after obtaining the opinion of the experts, confirming the headings and the content of the intervention sessions.

The statistical universe consisted of all married traitor women who were referred to the "EntekhabeNo Psychology Clinic" in Tehran in 2019. Thirty married traitor women who referred to this clinic were selected as the research sample, after explaining the aims of the research and obtaining informed consent, and randomly were categorized into the experimental and control group; conditions of participation in the study included being married, not engaging in extramarital involvement at the time of referral to the clinic, not having a serious psychological

disorder, based on a clinical record, and not having a serious physical disorder such as diabetes and heart disease. The sample size in each group using Cohen's table, with an effect size of 0.80 and a test power of 0.5 was determined 15 (26). The Standardized Marital Infidelity Tendency Questionnaire and Marital Intimacy Needs Questionnaire were used in the pre-test, post-test, and follow-up phases.

**Marital Infidelity Tendency Questionnaire:** This questionnaire was designed and validated by Rahimi, Aghaee, and Abu-al-Moali (27) to assess Marital Infidelity Tendency in married women. The questionnaire has 62 items, which based on a 5-point Likert scale were rated from strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). The minimum score is 62 and the maximum is 310. Using Principal Components Analysis (PCA), Exploratory Factor Analysis (EFA), 7 components have been extracted for this questionnaire;

The components are sexual intimacy, negative attitude to infidelity, growth period traumas, religious coping, emotion seeking, problem-solving skills, and avoidance of infidelity, which internal consistency of these components are as follows: sexual intimacy, 0.933, negative attitude to infidelity, 0.810, growth period traumas, 0.837, religious coping, 0.862, emotion seeking, 0.669, problem-solving skill, 0.692, and avoidance of infidelity, 0.827. The internal consistency of the whole questionnaire was 0.926.

**Marital intimacy needs questionnaire (MIQ):** This questionnaire was developed by Vandon – Brouck and Bertommen (1995), consisting of 56 questions and measures 5 indicators of marital intimacy. The indicators are intimacy (issues related to intimacy), (14 items); couple's agreement, (12 items); honesty? (12 items), affectivity to each other (8 items) and adherence to commitments (10 items). There was a positive and significant correlation between this questionnaire and the intimacy questionnaire of Akbari (2008) and Amiri (2005).

Training content of sessions was designed to provide the category and subject-based training and phenomenology of traitor women experience resulted from Rahimi, Aghaee, and Abu-al-Moali (2019) study, and conducted in

8 one and a half hour sessions over 8 weeks (Table 1).

Table 1: Content of intervention package Sessions

Sessions	Session content	Exercise
Introduction and goal setting	At this session, after getting acquainted with the participants, we were informed about their current problems; and their problems were reviewed, and the structure of the intervention sessions was identified.	
First Session	<p>The nature of self-esteem – characteristics of people with low self-esteem - Types of self-esteem problems and diagnosing them - recognizing the harmful inner critic (critical inner voice) and its function - The most effective factor of the harmful inner critic</p> <p>The source of the harmful inner critic - Important factors of damaged self-esteem</p> <p>Understanding the positive and negative reinforcing role that the harmful inner critic</p>	<p><b>Exercise:</b> Participants need to write their positive and negative characteristics in at least five lines. Describing self-concept inventory (appearance - how to communicate with others — personality — how others see you — academic or job performance — daily performance in life tasks — mental functioning — gender)</p> <p><b>Exercise:</b> Rewriting their description task based on these mentioned 8 items in their self-concept. Explaining the guidelines needed to review weaknesses (using non-critical expression - using precise expression —</p>

	play in the nature of self-esteem	<p>using specific terms not general terms — finding exceptions, or related strengths)</p> <p><b>Exercise:</b> Reviewing the mentioned weaknesses, according to the instructions explained in the Review Class</p> <p>Defining cognitive distortions, and their characteristics and types (overgeneralization — labeling — screening — polarized thinking — self-blaming — personalization — brain-reading — misperceptions about control — emotional reasoning)</p> <p><b>Task:</b> Participants need to list their cognitive distortions and present them at the next session.</p>
Second Session	Reviewing the tasks of the previous session - definition of interpersonal problems – the causes of interpersonal problems — inefficient coping strategies and their source —	<p><b>Exercise:</b> Reading related sentences to the schemas, and asking the participants to determine which sentence are most familiar for them, and is true in them.</p> <p>Nature and characteristics of schemas — Factors affecting</p>

	<p>inability to use inefficient coping strategies</p>	<p>the formation of schemas- primary harmful environments the formation of schemas — defining healthy growth environment and understanding the prerequisites for growth, and basic needs of children to healthy growth — schematic overview — classifying and describing schemas based on children's unmet needs to healthy growth</p> <p><b>Task:</b> Participants need to review the trained schemas, identify the schemas that are true in them, and present them at the next session.</p>		<p>Coping functions or emotional goals - emotion control and adjustment strategies (choosing position - changing position - focusing attention — reappraisal — prevention) - effective behavioral processes and verbal interactions in couple's interactions (positive processes - negative processes)</p> <p>The influence of emotions on marital relationships</p>	<p>spending time with each other — gifts — serving each other — physical contact)</p> <p><b>Task:</b> Participants should find the love time of their spouses and themselves, and explain the details, and present at the next session.</p>
Third Session	<p>Reviewing the tasks of the previous session; defining emotion - elements or dimensions of emotion (physical responses — expressive behaviors — sense of purpose) - identifying emotional benefits (coping tasks - social tasks)</p>	<p><b>Task:</b> Participants need to write their dominant emotions over the past two months about their spouse, identify their coping functions, and present them at the next session.</p> <p>The position of love in human needs Times of expressing love to the spouse (affirmative word —</p>	Fourth Session	<p>Reviewing the tasks of the previous session The importance of marital skills in spouse relationships - listening skills Listening obstacles (brain-reading - rehearsal — selective selection — judgment — fantasy — advice — conflict — always being right — diverting discussion — appeasing) Active listening (quoting — transparency — feedback) - listening techniques (listening by the body - bilateral communication) The skill of expressing feelings and needs - identifying feelings (Good or bad? Place, size - shape, and color? - what do your</p>	

	<p>feelings say? What do you intend to do? - which past experience reminds you by that feeling? Naming your feelings — feelings note sheet)</p> <p>Expressing feelings by appropriate emotional word, and defining words (through explaining the definition, intensity, duration, cause and context, background, the composition of all previous items)</p> <p>Strategies of expressing feelings (using the pronouns "I" in sentences; being honest - congruency)</p> <p>Converting needs to plays - needs expression strategies as a play (situation - feelings — demands — side solutions)</p> <p>Exercise: at the end of the session, the marital skills of listening, expressing emotion, feeling and needs should practice by playing the role of participants.</p>		<p>mutual proposal — disagreement — agreement)</p> <p>Problem-solving skills: the stages of solving the problem (problem statement, goal setting – brainstorm of solutions — trial period — evaluating results)</p> <p>Goal setting – the rules of brainstorm to goal setting (don't judge the value – the best state is self-liberation – finding more solution - cooperation)</p> <p><b>Exercise:</b> at the end of this session, marital transparent communication skills, negotiation, and problem-solving were practiced by playing the role of the participants.</p>
<p>Fifth Session</p>	<p>Transparent communication skills</p> <p>Transparent communication strategies (avoiding judgmental words and terms - avoiding general labels — avoiding blaming and accusative messages — avoiding reminding background — avoiding negative comparisons — avoiding threats — describing emotions instead of attacking them — keeping the body in open and receptive position — using full messages — using transparent messages)</p> <p>Negotiation skills</p> <p>Negotiation involves two legal parties with conflicting interests - separate your feelings from the issue — emphasize your own interests instead of insisting on your own positions — look for alternatives with common beliefs — be flexible — be consistent.</p> <p>Stages of negotiation (readiness to negotiate - the start of a negotiation – proposal and</p>	<p>Sixth Session</p>	<p>Definition of marriage - definition of the happy couple – effective factors in a happy marriage</p> <p>Different aspects of observable behavior in healthy families (common and acceptable power differences - more transparent borders — present performance — respecting individual choice – the skill of conversation - expressing positive feelings)</p> <p>Elements of a successful marriage (sufficient adaptability to adapt changing situations or dealing with problems – the skill of effective communicating – the skill of empathizing with each other emotional status)</p> <p>Warning signs of wrong marriage and signs of trouble</p> <p>Predictive factors of a happy marriage</p> <p>The concept and role of communication in couples' lives, and determinants of the quality of their relationships (respect - responsibility - understanding – attempt - to make important)</p> <p>Healthy relationship foundation (intimacy - psychological relationship)</p> <p>The benefits of sexuality and the relationship in human beings</p> <p>The sexual reaction cycle, according to William Masters</p>

	<p>and Virginia Johnson                  Definition of sexual behavior: important concepts in sexual behavior (the concept of sex or sexuality — the concept of sexual identity — the concept of sexual role or sexual roles — the concept of sexual tendency — the concept of sexual behavior) — concept and importance of sexual health — the concept of sexual intimacy                  The concept of sex lifestyle and its basics and expressions in sentences that describe couples' sexual style; sexual style table  <b>Exercise:</b> participants should fill the sexual style table for the next session</p>		<p>and their common causes (interpersonal disorders — sexual dysfunctions — infertility and extramarital involvement — lack of sexual satisfaction — lack of sexual skills)                  The relationship between love and sex — how to improve sex — the concept of sexual disorders and how diagnosing them — effective factors on sexual malfunction — sexual desire/arousal disorder in women — hypoactive sexual desire disorder in men — erectile dysfunction — female orgasmic dysfunction — delayed ejaculation — premature ejaculation                  Problems related to pain or penetration in the genital area in the pelvis or near it                  Exercise: participants write the most important emotional touch priorities of themselves and their spouse, and provide at the next session.                  Task: participants list the inhibitor factors in the sex between themselves and their spouses that inhibit them to have pleasure sex, and provide at the next session.</p>
<p>Seventh Session</p>	<p>Presenting the prior session tasks by participants and discussing them                  Instructions to increase sexual satisfaction                  The concept of sex and its stages and dimensions — the concept of sexual problems — causes of sexual problems (lack of proper communication — lack of time and hastening in sexual relations — adherence to previous sexual teachings and induction of predetermined traditions — embarrassment during sex — the quality of sex)                  Sexual mistakes (the wrong opinion about initiating sex — worry about the way of sex — imitating sexual patterns like movies, etc.)                  Inhibitors or destructors of sexual life (over-self-consciousness — paying more attention to sexual behavior — negative feeling toward physical appearance and shape — guilt feeling and shame about sex — anxiety about sexual function — repression of sexual stimulation and pleasure — fear of coercion and sexual pressure — sexual obsessions — anger — stress)                  Most common sexual problems</p>	<p>Eight Session</p>	<p>Reviewing the tasks of the prior session and discussing them                  Venereal disease (VD) or sexually transmitted disease (STDs) (treatable venereal disease (VD) gonorrhea, syphilis, and chlamydia - untreated sexually transmitted diseases of the first and second genital herpes virus and hepatitis virus and Condylomata Acuminata and AIDS).                  Definition of marital infidelity — the process of infidelity — the thoughts, feelings, physical reactions and behaviors that a person experience while discovering their spouses' infidelity. - physiological and psychological effects of marital</p>

	<p>extramarital, causes of marital infidelity (factors related to the injured person - factors related to a traitor person external factors, factors related to sex) — infidelity effects — infidelity consequences — children's reactions to extramarital relationships — impacts of extramarital relationships on children</p> <p>Exercise: Participants in the session should list the motivating factors that cause infidelity tendency among couples and discuss it in the same session.</p>
<p>Final session</p>	<p>All the tasks and exercises presented in the sessions will be evaluated in this session.</p> <p>At the end of the session, the marital infidelity tendency questionnaire, marital intimacy needs questionnaire (MIQ) redistributed among participants.</p>

Mixed analysis of variance with repeated measures in SPSS v.24 was adopted to investigate the effectiveness of the formulated intervention package.

**Results**

The mean and standard deviation of the participants' age in the experimental and control groups was  $7.08 \pm 33.07$  and  $8.07 \pm 36.40$ , respectively. Using an independent t-test showed that there is no significant difference between the two groups in terms of age ( $F(28) = 1.203, p > 0.05$ ). In other words, the two groups were homogenous in terms of age. The results showed that in the experimental group, the education level of 3 subjects was a high school diploma and school dropouts, 6 subjects, bachelor's, and 6 subjects were higher than a bachelor's degree. In the control group, the level of education of two participants was a high school diploma and school dropouts, 11 bachelor's degrees and 2 higher than the bachelor's degrees. Pearson's Chi-Square test showed no significant difference between the two groups in terms of education. It also showed that in the experimental group, 7 subjects had no child, 4 had a child and 4 had more than a child. In the control group, 8 participants had no child; 2 had a child and 5 had more than a child.

Pearson's Chi-square test showed that there are no significant differences based on the number of children between the two groups.

**The Effectiveness of Training Package on the Components of Marital infidelity Analysis of Variance (ANOVA) by defaults**

Table 2: Descriptive results on the marital infidelity components in the experimental and control groups

Group		Mean ± standard deviation	Shapiro-Wilk	Leven's Test
Sexual intimacy	pretest experimental group	6.54±5.80	0.678(p=0.044)	F(1, 28)=1.117(NS)
	pretest control group	8.70±4.73	0.974(NS)	
	Post-test experimental group	8.76±5.53	0.984(NS)	
	Post-test control group	9.30±5.47	0.944(NS)	
	Follow-up experimental group	8.23±5.73	0.962(NS)	
	Follow-up control group	9.16±6.73	0.941(NS)	
Negative attitude to infidelity	pretest experimental group	6.53±7.33	0.955(NS)	F(1, 28)=0.005(NS)
	pretest control group	6.02±7.47	0.949(NS)	
	Post-test experimental group	7.44±5.07	0.927(NS)	
	Post-test control group	9.19±5.60	0.895(NS)	
	Follow-up experimental group	7.56±6.87	0.929(NS)	
	Follow-up control group	8.23±7.33	0.927(NS)	
Growth period traumas	pretest experimental group	3.24±2.27	0.898(NS)	F(1 and 28)=1.086(NS)
	pretest control group	3.16±1.88	0.916(NS)	
	Post-test experimental group	6.90±3.27	0.902(NS)	
	Post-test control group	5.23±3.49	0.896(NS)	
	Follow-up experimental group	6.53±4.55	0.890(NS)	
	Follow-up control group	4.68±3.60	0.960(NS)	
Religious coping	pretest experimental group	4.42±2.68	0.956(NS)	F(1 and 28)=0.386(NS)
	pretest control group	4.75±2.40	0.923(NS)	
	Post-test experimental group	3.83±2.47	0.959(NS)	
	Post-test control group	4.62±2.30	0.950(NS)	
	Follow-up experimental group	5.09±2.73	0.874(p=0.038)	
	Follow-up control group	4.61±2.40	0.953(NS)	
Emotion seeking	pretest experimental group	1.60±1.87	0.908(NS)	F(1 and 28)=0.012(NS)
	pretest control group	1.53±1.27	0.900(NS)	
	Post-test experimental group	2.00±1.80	0.936(NS)	
	Post-test control group	2.14±1.80	0.949(NS)	
	Follow-up experimental group	2.16±1.33	0.923(NS)	
	Follow-up control group	1.71±1.54	0.917(NS)	
Problem-solving skills	pretest experimental group	3.13±1.97	0.957(NS)	F(1 and 28)=0.356(NS)
	pretest control group	2.68±1.20	0.946(NS)	
	Post-test experimental group	4.16±2.67	0.898(NS)	
	Post-test control group	2.75±1.13	0.947(NS)	
	Follow-up experimental group	4.66±2.80	0.951(NS)	
	Follow-up control group	2.88±1.13	0.914(NS)	
Avoidance of infidelity	pretest experimental group	6.05±2.75	0.935(NS)	F(1 and 28)=0.274(NS)
	pretest control group	6.89±2.13	0.941(NS)	
	Post-test experimental group	5.68±2.54	0.900(NS)	
	Post-test control group	8.81±2.49	0.946(NS)	
	Follow-up experimental group	4.45±2.17	0.970(NS)	
	Follow-up control group	4.20±2.00	0.964(NS)	

Table 2 shows that the Shapiro-Wilk index of sexual intimacy and religious coping is significant at the 0.05 level for the experimental group in the pre-test and follow-up stages, respectively. However, according to the significance level of variance analysis methods resistance against assumption deviation and sample size equivalence in groups, it can be expected that this assumption deviation would not invalidate the results of the analysis. The result of Leven's Test also shows that the difference of infidelity tendency error variance is insignificant at the level of 0.05. This result indicates that the assumption of homogeneity of error variances is confirmed for all components of infidelity tendency in the research data. The dependent variable independence from the other group membership variable, at the pre-test stage, was the main assumption of the repeated measurement Mixed model ANOVA method, which was examined in this section. In order to evaluate this assumption, the components of infidelity tendency in the pre-test phase in the experimental and control groups were compared using the Multivariable Analyze of Variance method. The results showed that F value ( $p < 0.05, F(V, 22) = 0.301$ ) was not significant at 0.05. Accordingly, it was concluded that before applying the independent variable between the experimental

and control groups, there is no significant difference in terms of infidelity tendency components. Therefore, the assumption of independence of the pretest variable from the group membership variable was confirmed.

### Hypothesis test

Table 3: Results of Multivariate Analysis of Variance comparing the effect of independent variables on components of infidelity tendency

	Wilks Lambda	F	degree of freedom	Significance Level	$\eta^2$
Sexual intimacy	0.616	8.418	2,27	0.001	0.384
Negative attitude to infidelity	0.460	15.850	2,27	0.001	0.540
Growth period traumas	0.986	0.195	2,27	0.824	0.014
Religious coping	0.459	15.891	2,27	0.001	0.541
Emotion seeking	0.981	0.258	2,27	0.774	0.019
Problem-solving skills	0.742	4.688	2,27	0.018	0.258
Avoidance of infidelity	0.673	6.554	2,27	0.005	0.327

According to table 3 the result of the multivariate analysis of variance shows that the interaction effect of situation  $\times$  time on the components of sexual intimacy (Wilks Lambda = 0.616,  $\eta^2 = 0.384$ ,  $p = 0.001$ ,  $(F(2 \text{ and } 27) = 8.418)$ ), negative attitude to infidelity (Wilks Lambda = 0.460,  $\eta^2 = 0.540$ ,  $P = 0.001$ ,  $(F(2 \text{ and } 27) = 15.850)$ ), religious coping (Wilks Lambda = 0.459,  $\eta^2 = 0.541$ ,  $P = 0.001$ ,  $(F(2 \text{ and } 27) = 15.891)$ ), avoidance of infidelity (Wilks Lambda = 0.673,  $\eta^2 = 0.327$ ,  $p = 0.005$ ,  $(F(2 \text{ and } 27) = 6.554)$ ) are significant at the level of 0.01, and the component problem solving skill (Wilks Lambda = 0.742,  $\eta^2 = 0.258$ ,  $p = 0.018$ ,  $(F(2 \text{ and } 27) = 4.688)$ ) was significant at the level of 0.05. Next, the sphericity condition or error variance matrix equation was evaluated using Mauchly's test. Table 4 shows the result of the error covariance matrix test in the components of infidelity tendency.

Table 4: Mauchly's test in the error covariance matrix equality test for the components of infidelity tendency

	Mauchly's test	$\chi^2$	degree of freedom	Significance Level
Sexual intimacy	0.935	1.815	2	0.404
Negative attitude to infidelity	0.696	6.795	2	0.007
Growth period traumas	0.918	2.316	2	0.314
Religious coping	0.658	11.286	2	0.004
Emotion seeking	0.849	4.414	2	0.110
Problem-solving skills	0.918	2.296	2	0.317
Avoidance of infidelity	0.747	7.862	2	0.020

According to the results of the above table, Mauchly's test showed that the chi-square value in components of sexual intimacy, growth period traumas, emotion seeking and problem-solving skills was insignificant at the 0.05 level, therefore, the spherical assumption confirmed for them. In contrast, the chi-square value in the components of negative attitude to infidelity ( $p < 0.01$ ,  $\chi^2(2) = 6.795$ ) and

religious coping ( $p < 0.01$ ,  $\chi^2(2) = 11.286$ ) were significant at level of 0.01 and avoidance of infidelity ( $p < 0.05$ ,  $\chi^2(2) = 7.862$ ) was significant at 0.01 level and therefore, spherical assumption confirmed for them. It is why the components' degrees of freedom were corrected using the Greenhouse–Geisser correction method. Table 5 shows the results of the repeated measurement Mixed model ANOVA to explain the interaction effect of the situation  $\times$  time on the components of infidelity tendency.

Table 5: the results of the repeated measurement Mixed model ANOVA to explain the interaction effect of the situation  $\times$  time on the components of infidelity tendency

Component	sum of squares	Error Sum of Squares	Degree of freedom	F	Significance Level	$\eta^2$
Sexual intimacy	496.69	2000.04	2 and 56	6.953	0.002	0.199
Negative attitude to infidelity	725.36	1526.49	1.533&42.936	13.305	0.001	0.322
Growth period traumas	5.422	726.04	2 and 56	2.711	0.812	0.007
Religious coping	189.07	270.58	1.491&41.739	19.565	0.001	0.311
Emotion seeking	0.600	93.33	2 and 56	0.180	0.806	0.006
Problem-solving skills	62.16	469.78	2 and 56	3.705	0.031	0.117
Avoidance of infidelity	137.09	958.78	1.597&44.706	4.006	0.033	0.125

Table 5 shows the interaction effect of situation  $\times$  time on the components of Sexual intimacy ( $\eta^2 = 0.199$ ,  $p = 0.002$ ,  $(F(2 \text{ and } 56) = 6.953)$ ), negative attitude to infidelity ( $\eta^2 = 0.322$ ,  $P = 0.001$ ,  $(F(1.533 \text{ and } 42.936) = 13.305)$ ) and religious coping ( $\eta^2 = 0.411$ ,  $p = 0.001$ ,  $(F(1.491 \text{ and } 41.739) = 13.305)$ ) is significant at level of 0.01 and on the components of problem solving skills ( $\eta^2 = 0.117$ ,  $P = 0.031$ ,  $(F(2 \text{ and } 56) = 3.705)$ ) and avoidance of infidelity ( $\eta^2 = 0.125$ ,  $p = 0.033$ ,  $(F(1.597 \text{ and } 44.706) = 4.006)$ ) is significant at the level of 0.05.

This indicates that applying the independent variable, compared to the control group, has increased the components of sexual intimacy, negative attitude to infidelity, religious coping, problem-solving skills, and avoidance of infidelity. Accordingly, in the first hypothesis test, it can be concluded that training based on explaining marital infidelity phenomenology increases constantly the mean score of sexual intimacy, negative attitude to infidelity, religious coping, problem-solving skills, and avoidance of infidelity in married traitor women.

## The Effectiveness of Training Package on the Components of Marital intimacy

### Analysis of variance (ANOVA) by defaults

Table 6 summarizes the mean, standard deviation, and Shapiro-Wilk index of each component of marital intimacy (intimacy, agreement, honesty, adherence to commitments, and affectivity to each other) in both experimental and control groups, and in three stages of pre-test, post-test and follow-up.

Table 6: Descriptive results on the Marital intimacy components in the experimental and control groups

	Group	Mean ± standard deviation	Shapiro-Wilk	Leven's Test
Intimacy	pretest	experimental group	5.63±24.80	0.964(NS)
		control group	4.19±23.53	0.851(NS)
	Post-test	experimental group	2.53±29.60	0.918(NS)
		control group	3.31±23.60	0.957(NS)
	Follow-up	experimental group	3.29±30.14	0.933(NS)
		control group	4.02±24.13	0.947(NS)
Agreement	pretest	experimental group	4.24±20.71	0.959(NS)
		control group	5.40±20.20	0.977(NS)
	Post-test	experimental group	7.69±26.73	0.971(NS)
		control group	7.10±18.93	0.965(NS)
	Follow-up	experimental group	4.19±26.27	0.948(NS)
		control group	3.43±20.25	0.969(NS)
Honesty	pretest	experimental group	4.51±22.74	0.901(NS)
		control group	4.22±21.49	0.930(NS)
	Post-test	experimental group	3.68±21.40	0.926(NS)
		control group	4.60±18.71	0.884(NS)
	Follow-up	experimental group	6.29±21.80	0.968(NS)
		control group	3.97±18.53	0.915(NS)
Adherence to commitments	pretest	experimental group	2.37±17.93	0.916(NS)
		control group	3.29±17.67	0.931(NS)
	Post-test	experimental group	2.52±22.80	0.890(NS)
		control group	3.58±18.07	0.963(NS)
	Follow-up	experimental group	2.77±21.60	0.983(NS)
		control group	3.19±17.80	0.947(NS)
Affectivity to each other	pretest	experimental group	3.06±13.27	0.972(NS)
		control group	3.78±13.76	0.917(NS)
	Post-test	experimental group	3.06±18.80	0.962(NS)
		control group	7.22±12.27	0.971(NS)
	Follow-up	experimental group	7.61±16.73	0.965(NS)
		control group	5.13±14.20	0.933(NS)

Table 6 shows that the Shapiro-Wilk index of all marital intimacy components is insignificant for both experimental and control groups at 0.05. Accordingly, the data distribution of marital intimacy in both groups is normal. The Levin test also showed that the error variance of the marital intimacy components is insignificant at the 0.05. This result indicates that the assumption of error variances homogeneity is also confirmed for all the components of marital intimacy.

In order to evaluate the hypothesis, the independence of the dependent variable in the pretest stage of the group membership variable, the components of marital intimacy, in the pretest stage in both experimental and control groups, were compared using multivariate analysis of variance. The results showed that F value ( $p < 0.05$ ,  $F(24 \text{ and } 7) = 0.884$ ) is insignificant at 0.05 level. Accordingly, it was concluded that the assumption of independence of the pretest variable from the group membership variable

for the components of marital intimacy is confirmed.

### Hypothesis test

Training based on explaining marital infidelity phenomenology increases marital intimacy in married traitor women.

Table 7: Results of Multivariate Analysis of Variance comparing the effect of independent variables on components of marital intimacy

	Wilks Lambda	F	degree of freedom	Significance Level	$\eta^2$
Intimacy	0.795	3.488	2 and 27	0.045	0.205
Agreement	0.653	7.180	2 and 27	0.003	0.437
Honesty	0.964	0.499	2 and 27	0.612	0.036
Adherence to commitments	0.633	7.819	2 and 27	0.002	0.367
Affectivity to each other	0.792	3.556	2 and 27	0.043	0.208

According to table 7 the result of the multivariate analysis of variance shows that the interaction effect of situation  $\times$  time on the components of intimacy (Wilks Lambda = 0.795,  $\eta^2 = 0.205$ ,  $P = 0.045$ , ( $F(2 \text{ and } 27) = 3.488$ )), Affectivity to each other (Wilks Lambda = 0.795,  $\eta^2 = 0.208$ ,  $P = 0.043$ , ( $F(2 \text{ and } 27) = 3.556$ )), are significant at the level of 0.05, and the component of agreement (Wilks Lambda = 0.633,  $\eta^2 = 0.367$ ,  $p = 0.002$ , ( $F(2 \text{ and } 27) = 7.819$ )) was significant at the level of 0.01.

Table 8: Mauchly's test in the error covariance matrix equality test for the components of marital intimacy

	Mauchly's test	$\chi^2$	degree of freedom	Significance Level
Intimacy	0.919	2.282	2	0.320
Agreement	0.916	2.376	2	0.305
Honesty	0.827	3.689	2	0.158
Adherence to commitments	0.898	2.895	2	0.235
Affectivity to each other	0.855	4.232	2	0.121

According to table 8, Mauchly's test showed that the chi-square value in components of marital intimacy is insignificant at the 0.05 level, therefore, the spherical assumption confirmed for them. Table 9 shows the results of the repeated measurement Mixed model ANOVA to explain the interaction effect of the situation  $\times$  time on the components of marital intimacy.

Table 9: The results of the repeated measurement Mixed model ANOVA to explain the interaction effect of the situation  $\times$  time on the components of marital intimacy

Component	sum of squares	Error Sum of Squares	degree of freedom	F	Significance Level	$\eta^2$
Intimacy	112.02	725.24	2 and 26	4.325	0.018	0.134
Agreement	207.36	1038.18	2 and 26	5.592	0.006	0.165
Honesty	16.96	708.22	2 and 26	0.670	0.516	0.023
Adherence to commitments	83.27	420.58	2 and 26	5.543	0.006	0.165
Affectivity to each other	185.00	1112.27	2 and 26	4.657	0.013	0.143

Table 9 shows the interaction effect of situation  $\times$  time on the components of intimacy ( $\eta^2 = 0.134$ ,  $p = 0.018$ , ( $F(2 \text{ and } 56) = 64.325$ )) and affectivity to each other ( $\eta^2 =$

0.143,  $p = 0.013$ , ( $F(2 \text{ and } 56) = 4.657$ )) is significant at level of 0.05 and on the components of agreement ( $\eta^2 = 0.165$ ,  $p = 0.006$ , ( $F(2 \text{ and } 56) = 5.592$ )) and adherence to commitments ( $\eta^2 = 0.165$ ,  $p = 0.006$ , ( $F(2 \text{ and } 56) = 5.543$ )) is significant at the level of 0.01. This indicates that applying the independent variable, compared to the control group, has increased the components of intimacy, affectivity to each other, agreement and adherence to commitments. Thus, according to the second hypothesis test, it can be concluded that training based on explaining marital infidelity phenomenology, increases constantly the components of intimacy, affectivity to each other, agreement and adherence to commitments in married traitor women.

### Discussion

The research results showed that the designed intervention package based on the extracted categories and themes from the phenomenological study of marital infidelity in married women (27), increases constantly the mean score of sexual intimacy, negative attitude to infidelity, religious coping, problem-solving skills, and avoidance of infidelity in married traitor women. Moreover, regarding the effectiveness of the intervention package on the components of marital intimacy, the results showed that the intervention package, increases constantly the components of intimacy, affectivity to each other, agreement and adherence to commitments in married traitor women.

The important point about interventions in the field of infidelity is that, although researchers have reported infidelity as the major cause of divorce, and couples' therapist describes infidelity as one of the most difficult treatable problems, only in recent years several empirical studies have been designed and implemented to treat couples who are struggling in infidelity. Until 2011, the only designed empirical research for couples struggling in infidelity, which was empirically tested and its effectiveness has been confirmed, was the integrative approach of Snyder, Baucom, and Gordon; the integrative approach of Snyder et al. was designed to treat couples who are struggling in infidelity based on two supportive therapies used in marital

disturbances that received good empirical support that is: cognitive-behavioral couple therapy (CBCT) and insight-oriented couple therapy (IOCT). Cognitive-behavioral couple therapy is a skill-based approach that emphasizes on communication skills (e.g., emotional expression and problem solving), behavior change skills (e.g., agreements on changing personal and common behaviors), and cognitive processes (e.g. standards and communication beliefs and interpersonal attributions) that moderate the commencement and continuation of communication skills (28). The findings of this study are consistent with the results of studies showing that there is a significant relationship between couples' sexual activity and their tendency to marry; this result is consistent with the findings of Rahmani, Merghati Khoie, Sadeghi and Allah Gholi (29). Most sexual intercourse problems are around the frequency of sexual intercourse, satisfaction, and quality of intercourse. The formation of positive feelings toward the spouse, closeness and intimacy with the spouse, the increase of the marital relationship, and the ability to resolve conflicts between couples, and as a result higher marital satisfaction can be cited.

It should be noted that the designed intervention of this marital infidelity phenomenology based research, is based on interpersonal skills, problem-solving skills, and attitudes to marital infidelity, based on their interventions, with emphasis on the cognitive-behavioral couple therapy and insight-oriented couple therapy mentioned in the integrative approach of Snyder, Baucom, and Gordon. However, the important and innovative result of this research was the design of intervention essence based on phenomenology results and the analysis of empirical theories and researches conducted in the field of marital infidelity.

Moreover, the results of this study, based on the effectiveness of the intervention package are consistent with the results of Marín, Christensen & Atkins (30). In their research, the researchers suggested that the applied intervention program has had long-term positive and long-term effects on the studied variables; in addition, the effectiveness of the program varied among the traitor and non-traitor people. For example, the divorce rate

was significantly higher in couples who were involved in secret infidelity (80%) than those who are obviously involved in infidelity (43%) and non-traitors (23%). The results also showed that couples who remained married has improved their relationship satisfaction over time, and this change was apart from the infidelity status. The research results categorize the involved couples in infidelity into two groups: first, couples who continue to recover and are not distinguishable from their non-traitor counterparts; second, traitor couples who are getting drastically worse and getting divorced. There are other studies on intervention in injured people by marital infidelity that have shown the effectiveness of these programs in adapting to this challenge; for example, Snyder, Gasbarrini, Doss, & Scheider (8) have provided an integrated procedure to rapid improvement of marital infidelity by designing an experimental treatment. Their research results showed that military couples who have received the treatment protocol not only received information on the conceptual bases and specific interventions appropriate to these concepts but also could apply it in similar clinical situations. Moreover, in this regard, Fife, Weeks & Stellberg; Filbert (31) in their

research have examined the role that forgiveness facilitator plays in the treatment of marital infidelity in an interpersonal model; in this model, forgiveness has been emphasized as a key component of the recovery process. Infidelity causes serious damage in the couples' relationships, leads to a loss of trust and relationship stability. In their research, the researchers concluded that forgiveness facilitating interpersonal relationships through the following four integrated factors: empathy, humility, commitment, and apology. At the end, it can be argued that the intervention package of this research, which has been designed based on the ecological status of the studied community can effectively improve the components of marital infidelity, and as a result, while using by therapist couple, can be useful to prevent marital infidelity in a highly vulnerable community. Encouraging couples to look for effective interventions to solve marital problems can improve sexual and emotional intimacy between couples and protect the family's foundations from the overwhelming threat factors.

#### **Conflict of interest**

Authors declare no conflict of interest.

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