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Fuzzy Analysis of Factors Affecting the Tendency Towards Establishing Extramarital Relationship of Married Men and Women in Isfahan

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Abstract: *The main purpose of the present study is to identify factors that despite, leads to a tendency of married men and women to establish a relationship outside the marital domain; therefore, its results can be used to provide health for the main pillar of society, that is family. This study was conducted in a descriptive-correlational design with cluster random sampling method and 400 individuals had been selected from the statistical population of married men and women living in Isfahan in 2012. The research instrument was a 62-item questionnaire for assessing the tendency toward betrayal. Data analysis was performed using correlation, multiple regression and Fuzzy inference with the use of SPSS-20 software. With the designed model, you can get the rate of betrayal by giving input for each male and female. The findings of the current study show that according to the correlation coefficients, the relationship between the tendency towards extramarital relationship with the variables (sexual satisfaction, emotional satisfaction, suspicion and sense of revenge, variety-seeking) is meaningful and positive. ($P < 0.05$). Regression results show that 26.7% of the variance in the tendency toward extramarital relationship can be explained with the model. The effect of age, duration of marriage and education variables in interaction with one another on five variables of tendency towards extramarital relationships, that are sexual satisfaction, emotional satisfaction, suspicion and sense of revenge and variety-seeking are significant ($P < 0.05$) and they don't have significant effect individually ($P < 0.05$). In all findings, women's tendencies for betrayal is higher than men. Therefore, with creating a cultural context for raising sexual and emotional satisfaction and reducing variety-seeking and revenge, it is possible to decrease the tendency towards extramarital relationship in married women and men.*

Keywords: *Extramarital Relationship, Sexual Satisfaction, Emotional Satisfaction, Revenge, Variety-Seeking, Fuzzy Inference.*

INTRODUCTION

The family is where the person feels belong to. Anything that creates a gap in the family, threatens the individual's feelings of belonging. Marital abjuration also threatens the structure of the family and, consequently, the most fundamental feeling, that is, the sense of belongingness, and the kind of fear of a very fundamental rejection inflicts deep into our existence. Marital abjuration and its excitement in literature, history, artwork, anecdotes and modern stories have been described in cinematic films of all countries (Brown, 2001).

Glasser believes that couples begin their shared life with love, but they observe that the initial intimacy gradually dies. With time, some couples will be separated, but the majority will continue to live they shared life with a monotonous tone and in boredom and they will endure alcohol, overeat, drug use, or illicit communication to endure their life. The most important motive for married men and women who are drawn to illegitimate relationships is the re-experience of personal and sexual intimacy. Something that they no longer find it in their shared life. Therefore, the attractiveness of illegitimate relationships is because neither side criticizes, blames or nags (Glasser, 2004). As marriage occurs in any well-known culture, marriage breakdown is also found in every culture (Smith, 2004).

Marital distress is a phenomenon often associated with the satisfaction of one's emotional needs through relationships outside the marital domain (Harley & Willard, 2006). In general, the definition that can be used for marital abjuration is based on the notion that couples have about the concept of marriage (Pittman, 1989). Drigotas & Barta describes betrayal as when a person crossing the boundaries of marital relationship by establishing a physical or emotional affinity with an individual outside of the relationship (Drigotas & Barta, 2001). Unfaithfulness or betrayal is a kind of disorder and illness in behavior, because due to the abnormal and unpleasant consequences it has, it creates various injuries and problems for other person (Kaveh, 2004). Betrayal or abjuration is a sexual, emotional or emotional-sexual interaction with a person other than a spouse that is kept hidden from the spouse and its main characteristic is its secrecy (Brown, 2001).

Illegitimate relationships outside the marital domain always cause a severe blow to the parties. This type of relationship causes symptoms similar to post-traumatic stress disorder and also feelings such as depression, anger, disappointment, lack of self-esteem, loss of identity and worthlessness in the injured spouse. In addition, it causes a feeling of doubt, depression and guilty feeling in the straying spouse (Buunck, 1995). Marital abjuration is the cause of many marital violence (Buss, 1994) and can have devastating consequences for family members, friends and consequently, the community. The family is where we feel belong. Anything that creates a gap in the family threatened our feeling of belongingness. Marital abjuration also threatens the structure of the family and, consequently, the most fundamental feeling, that is, the sense of belongingness, and awakens a kind of a very fundamental fear that inflicts deep into our existence (Brown, 2001).

According to a survey, 21 percent of men and 11 percent of women in America commit marital infidelity during their lives (De Stefano & Oala, 2008). Examples of national research in the Western countries have shown that between 6% and 1.5% of married people will be involved in sexual relationship outside of their marriages (Snyder et al., 2008). One of the common reasons for ending marriage or divorce is marital abjuration. Overseas research shows that having an illegitimate relationship while the person is married is an important predictor of divorce (Amato & Previti, 2003). Social corruption of establishing a relationship outside marriage threatens psycho-social, and even political and economic health and safety of the society, and for the survival and sustainability of the community, some measures must be taken to prevent such corruptions and this, except through precise factors for creating and exacerbating the tendency to establish a relationship outside of marriage is not possible (Kamrani Fokoor, 2003).

Marital infidelity is one of the factors that threatens the health of the family and it is the most important factor affecting the performance, stability and continuity of marital relationships (Mark et al., 2011). The most prominent indicator of marital disturbance is divorce. One of the most important reasons for divorce in recent decades, which has grown dramatically, is marital infidelity and extramarital relationships (Salimi et al., 2007). Infidelity is a feeling of being harmed by deliberate or intrusive behavior of a trusted person (Rachman, 2010).

The issue of marital infidelity in Iranian society is a growing concern that is associated with unsustainability in the relationship and high rate of divorce (Momeni et al., 2017). In Iran, scientific and substantive research on infidelity and its causes and factors has not been conducted and statistics presented in this area are the results of clinical and consulting experiences of psychologists and specialists. Evidence suggests that marital infidelity has a high prevalence and that men are more likely to break their vows to their partner than

women (Basharapur, 2012). Despite the cultural differences that exist between human societies, the issue of "betrayal" in marital relations is often considered despicable and unethical in many societies. In our country, religion and custom of the community regarding this issue of "infidelity" is very obscene, and have a negative view on this issue, and in our society this issue is not a matter of personal or private concern, and it is linked to the dignity of the community of people, while the issue is also religiously and legally prohibited (Ejtehadi and Vahedi, 2017).

Studies have shown that one's reaction to the betrayal of a spouse is similar to the symptoms of post-traumatic stress, shock, confusion, anger and depression (Snyder et al., 2007). In addition, it causes feelings of shame, guilt, doubt, anger and disappointment in the straying spouse (Glass and Wright, 1997). After the betrayal of the spouse is revealed, families face issues such as marital crisis, poor performance in parental roles, job problems, beatings and suicide (Gordon et al., 2005).

Based on the results of various researches, various factors contribute to the development of marital infidelity, such as the emotional character (Zuckerman, 1994; Ghamati, 2012), lack of marital quality and lack of attention in marital relationships (Jeanfreau, 2014), individual and personality factors (Zakie and Karami, 2013), the existence of co-workers of opposite sex (Koruki, 2013), socioeconomic status (Adamopoulou, 2013), degree of education and watching satellite programs (Javidnia, 2013; Abdul Maliki, 2013), lack of sexual diversity (Medina, 2013), external reactions of negative affection (Rauer & Volling, 2005), and neglect in marital relationships (Solstad & Mucic, 1999). (Momeni et al, 2017).

Brown (2001) believes that increased secret relations is due to a set of factors: our greater expectations for emotional satisfaction in marriage, the severe lack of communication skills and intimate relationships, sexual revolution, and the transformation of the structure of everyday life are all among these. For example, when the goal of marriage is emotional satisfaction, emotional sensitivity becomes more important. While as a society we don't help children learn these skills. Women, more than ever, consider themselves entitled to emotional satisfaction and they look for it at work as much as they do at home (Brown 2001). Also, in a study by Momeni Javid et al., they stated that the most important reasons for betrayal in men were emotional and sexual dissatisfaction (Momeni Javid and Shoja Kazemi, 2011).

In our country, in a study entitled "Investigating the relationship between sexual dissatisfaction and divorce", it was stated that 67 percent of the reason for divorce was due to lack of familiarity with the sexual behaviors and desires of the partner (Foroutan and Milani, 2005). Researchers have shown that people who focus on relationships outside the marital domain state that their friends are also engaging in this type of relationship. Other social factors include sexual liberalization in society, the increasing flood of women seeking work and the decline of moral values (Brown 2001). Also, given the situational predictions for betrayal, the opportunity to engage in illegitimate relationships is more likely to lead to betrayal. Opportunities can take the form of presence of potential partners, frequent travels, or living in a big city (Smith, 2004). Atkinson et al. (2001) also consider the amount of income and occupational status as the variables related to the state of betrayal. Finally, substance abuse of couples are more likely to be at the level of abjuration situation (Hall et al. 2004). According to the definitions, high prevalence and consequences of marital infidelity and the mentioned issues, the present study addresses the factors of betrayal from three perspectives: 1) cognitive causes and motivations; 2) Social causes and motivations; and 3) situational causes and motivations. So the question that this research seeks to answer is that what are the cognitive, social, and situational factors that affect the establishment of extramarital relationships among married people?

Research Method

This research was conducted in a descriptive-correlational design with an applied nature and in terms of time it was cross-sectional. For this purpose, a sample of 400 individuals from the statistical population of married men and women in Isfahan who were resident in this city in 2012 was selected using random cluster sampling

method. Data collection was a field study and data collection tool was a questionnaire. The tools for this research was a questionnaire for measuring the tendency of people towards extramarital relationship (Shirdel, 2004). Data analysis was performed using Pearson correlation test and multiple regression and Fuzzy inference system with the use of SPSS-20 software.

Research Tools

Outside of Iran, research has been conducted directly on people about establishing an extramarital relationship. Due to the social atmosphere of our society, we could not collect the information from the subjects directly with the questions in which the resistance of the subjects and the authorities' opposition to such questionnaires would be provoked. For this reason, the test used in this research is a questionnaire for assessing the tendency of individuals to establish extramarital relationships (Shirdel, 2004), which is indirectly ask questions from subjects. This test consists of 62 items (11 items referring to the demographic information of the respondents) and 8 subscales that are scored by the Likert method. The subscales and the number of items in each subscale are as follows:

The subscales for measuring marital satisfaction: This subscale consists of 10 questions that examines the degree of sexual satisfaction of a person with his/her spouse. In this subscale, the amount of sexual intimacy, flirting before sex, the pleasure that a person gains from intimate relationship with his/her spouse, and other important points to consider in couples' sexual relations is addressed in order to measure the degree of people's satisfaction.

The subscale for measuring emotional satisfaction: This sub-scale consists of 9 questions that examines the degree of satisfaction that one feels in the emotional relationships with her/his spouse and measures the quality of their relationship.

The subscales for measuring the suspicion of individuals about their spouse's loyalty: In this subscale, questions are raised which measures the level of suspicion of individuals in relation to their spouses, and the result indicates whether that the person (the woman or the man) trust loyalty of his/her spouse or not. With the assumption that some couples will counteract their spouse's disloyalty, in other words, they create the context for revenge. This subscale has 7 questions.

The subscale for measuring verity-seeking in individuals: This subscale consists of 10 questions that measure the tendency of an individual to establish pleasure and emotional relationships and diversity with individuals of the opposite sex. Also, some people tend to experience new and prohibited relationships, and enjoy this type of relationships; this is what this subscale measures; that is the tendency of individuals for engaging in new and attractive relationships.

The subscale for measuring the tendency of individuals to establish extramarital relationship: This subscale measures the tendency of individuals towards betrayal which consists of four groups of questions as follows: 1) 4 questions related to the assessment of the tendency of individuals for betrayal due to sexual dissatisfaction with a spouse. 2) 4 questions related to measuring the tendency of individuals to betrayal due to emotional dissatisfaction with spouse. 3) 4 questions related to measuring the tendency of individuals to betrayal, due to verity-seeking. 4) 4 Questions related to measuring the tendency of individuals to betrayal due to suspicion about the loyalty of their spouses and a sense of revenge.

"It's worth noting that the questionnaire for men and women is only different in using the words 'male or female' in each of the questions, depending on the concept."

Shirdel (2004) states in his research that for measuring the content validity, this questionnaire was reviewed by five professors with doctoral degrees in psychometrics, counseling, psychology and social pathology and family. All of these people have approved the content validity of the questionnaire.

Then, in order to measure the validity of the questionnaire (internal consistency), the questionnaire was performed on 21 people (10 women and 11 men) as a sample and Cronbach's alpha was calculated for each subscale which the results are summarized below.

Cronbach's Alpha for subscale of sexual satisfaction was 95%, for subscale of emotional satisfaction was 85%, for subscale of suspicion and the sense of revenge was 81%, the subscale for verity-seeking was 89%, and for the subscale of the tendency towards extramarital relationships was 93%, which indicates that these subscales have high validities.

Research Results

Results: The correlation table between the research variables is shown in Table 1.

Table 1: Correlation coefficient between research variables

Statistic Variable		Tendency for relationships outside the marital domain	Sexual Satisfaction	Emotional Satisfaction	Suspicion and sense of revenge	verity-seeking
Tendency for relationships outside the marital domain	The correlation coefficient	1				
	Significance					
Sexual Satisfaction	The correlation coefficient	0.290	1			
	Significance	0.01				
Emotional Satisfaction	The correlation coefficient	0.381	0.675	1		
	Significance	0.001	0.001			
Suspicion and sense of revenge	The correlation coefficient	0.304	0.360	0.541	1	
	Significance	0.001	0.001	0.001		
verity-seeking	The correlation coefficient	0.491	0.745	0.729	0.465	1
	Significance	0.001	0.001	0.001	0.001	
Duration of marriage	The correlation coefficient	0.046	0.013	-0.011	0.031	-0.041
	Significance	0.183	0.398	0.410	0.269	0.205
Gender	The correlation coefficient	0.258	0.325	0.115	0.158	0.305
	Significance	0.001	0.001	0.001	0.001	0.001
Age	The correlation coefficient	-0.003	0.011	0.018	0.070	-0.052
	Significance	0.952	0.821	0.732	0.165	0.302
Education	The correlation coefficient	-0.070	-0.056	-0.093	0.039	-0.076
	Significance	0.083	0.270	0.065	0.428	0.131
Duration of marriage	The correlation coefficient	0.046	0.013	-0.011	0.031	-0.041
	Significance	0.183	0.796	0.820	0.539	0.410
Ethnicity	The correlation coefficient	-0.076	-0.116	-0.025	-0.064	-0.212
	Significance	0.067	0.021	0.621	0.204	0.001

As shown in table (1), the relationship between the variable of tendency for relationships outside the marital domain with variables (Sexual satisfaction, emotional satisfaction, suspicion and sense of revenge, verity-seeking); the relationship between the variable of sexual satisfaction with variables (emotional satisfaction, suspicion and sense of revenge, verity-seeking), as well as the relationship between the variable of emotional satisfaction with variables (suspicion and sense of revenge, verity-seeking) as well as the relationship between the variables of suspicion and the sense of revenge with the variable of verity-seeking and the relationship of gender variable with variables (tendency for relationships outside the marital domain, sexual satisfaction,

emotional satisfaction, suspicion and revenge, verity-seeking) as well as the relationship between ethnicity variable with variables (sexual satisfaction and verity-seeking) are positive and statistically significant ($P < 0.05$). Other research correlations between other variables are not significant ($P > 0.05$).

Multivariable regression analysis has been used to examine this assumption that sexual satisfaction, emotional satisfaction, suspicion and sense of revenge, verity-seeking, and gender affect the tendency towards relationships outside the marital domain. The results are presented in Table (2).

Table 2: Regression results between predicting sexual satisfaction, emotional satisfaction, suspicion and sense of revenge, verity-seeking, gender and variable of tendency towards relationships outside marital domain ($\alpha = 0.05$, statistical power = 95%)

	Model	R	R ²	Coefficients		t- statistic	Beta	P-value
				B	Standard Error			
*	Fixed value (c)	0.516	0.267	1.461	0.121	12.076	-	0
	Sexual Satisfaction			-0.120	0.036	-3.330	0.233	0.001
	Emotional Satisfaction			0.069	0.036	1.915	0.138	0.056
	verity-seeking			0.227	0.035	6.422	0.485	0
	Suspicion and sense of revenge			0.031	0.037	0.876	0.046	0.382
	Gender			0.199	0.062	3.229	0.152	0.001

The results of Table (2) for regression indicate that the correlation coefficient of the model is equal to 0.516, the second power of the correlation coefficient that is coefficient of determination is equal to 0.267. This value indicates that 26.7% of variations in the variables of tendency for relationships outside the marital domain are justified by the model. Also, based on the results of this table, and according to the t-statistic and p-value, it is shown that there is a statistically significant relationship between the variables of sexual satisfaction, verity-seeking, gender and tendency for relationships outside the marital domain ($P < 0.05$). However, there was no significant relationship between the variables of emotional satisfaction, and suspicion and the sense of revenge with the tendency for relationships outside the marital domain ($P > 0.05$). Regarding the regression coefficients, we can now refer to a linear model for the following variables: (sexual satisfaction (x_1), emotional satisfaction (x_2), verity-seeking (x_3), suspicion and sense of revenge (x_4), gender (x_5) and tendency for relationships outside marriage (Y))

$$Y = -0.120x_1 + 0.227x_3 + 0.199x_5 + 1.461$$

To examine the hypothesis that age, duration of marriage and education affects the tendency towards extramarital relationships, sexual satisfaction, emotional satisfaction, suspicion and sense of revenge and verity-seeking, multivariate analysis of variances has been used. The age and duration of marriage variables are classified in this hypothesis. The necessary assumptions for using this method are equality of variances and equality of covariance. The purpose for examining the assumption is the equality of variances, equality of the variances groups. To this end, Levin's test was used. The results of the Levin test in the dependent variables are presented in Table 4.14.

Table 3: Equivalence test of variances of scores for tendency towards relationships outside marital, sexual satisfaction, emotional satisfaction, suspicion and sense of revenge and verity-seeking

Indicators Dependent Variable	Coefficient F	Degree of Freedom 1	Degree of Freedom 2	Significance (P value)
Tendency for relationships outside the marital domain	1.697	54	327	0.003
Sexual Satisfaction	2.323	54	327	0.000
Emotional Satisfaction	2.388	54	327	0.000
Suspicion and sense of revenge	1.862	54	327	0.001

verity-seeking	1.595	54	327	0.008
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As seen in Table (3), the equality assumption of variance is not confirmed in any of the predictive variables ($P < 0.05$). To ensure the results, a nonparametric Kruskal-Wallis test was performed. If MANOVA analysis rejects null hypothesis, but not rejected in the non-parametric, it would suggest that the observance of the definitions is important.

Box test results are presented in Table 4 for examining the equality of covariance.

Table 4: Box test for examining the equality covariance scores in two groups

Box Score Test	Coefficient F	Degree of Freedom 1	Degree of Freedom 2	Significance (P value)
37.616	1.096	225	7.315	0.159

As it can be seen in Table 4, the assumption of covariance equalization or the relationship between the five dependent variables is confirmed, that is the equality between covariance is significant ($P > 0.05$).

The multivariable analysis results are presented in Table (5).

Table 5: Multivariate analysis results, criterion variables

Source of change	value	F Statistic	Significance	Effect Size	Statistical Power
Education	0.894	1.47	0.064	0.022	0.877
Duration of marriage	0.927	1.655	0.055	0.025	0.882
Age	0.950	0.832	0.676	0.013	0.555
Education * Duration of marriage	0.802	1.33	0.055	0.043	0.997
Education * Age	0.787	0.994	0.496	0.047	0.997
Duration of marriage * age	0.916	1.145	0.283	0.017	0.750
Duration of marriage * age * education	0.832	1.737	0.005	0.36	0.992

Based on the findings of Table 5, the difference between the centroid groups according to the five criterion variables is only statistically significant in the interaction of the predictive variables of the duration of marriage, age and education ($P < 0.05$) and the difference is about 36%; that is 36 percent of the variance or the individual differences in five variables is related to the differences between the interactions of the five variables of age groups, four variables of duration of marriage groups and the six variables of education groups. The results are the same in all four proposed methods and show that two groups have a significant difference with regard to the three variables. The statistical power of the test is also 0.992 and high. In other words, the effects of variables such as age, duration of marriage, and education in interaction with one another are significant on five variables of tendency towards extramarital relationships, sexual satisfaction, emotional satisfaction, suspicion and sense of revenge, and verity-seeking ($P < 0.05$) and they don't have a significant effect individually ($p < 0.05$).

The results of the analysis of single criterion variable on age, duration of marriage, and education interaction are presented in Table (6).

Table 6: Single-variable test results for each of the research variables or the test of the effects between the subjects in the interaction of age, education and duration of the marriage

Dependent Variable	Sum of Squares	Degree of Freedom	Mean of Squares	F	Significance	Effect Size	Test Power
Tendency to relationships outside the marital domain	4.432	7	0.633	1.644	0.122	0.034	0.677
Sexual Satisfaction	22.823	7	2.260	2.074	0.046	0.043	0.795
Emotional Satisfaction	23.101	7	3.300	2.060	0.047	0.042	0.792
Suspicion and sense of revenge	14.521	7	2.074	2.720	0.009	0.055	0.906

verity-seeking	28.729	7	4.104	2.327	0.025	0.047	0.847
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The results of Table 6 show that the effects of variables such as age, education, and duration of marriage have significant effects on sexual satisfaction, emotional satisfaction, suspicion and sense of revenge, and verity-seeking variables ($p < 0.05$). However, the effects of these variables on the tendency towards extramarital relations is not statistically significant ($P > 0.05$). In other words, when the three factors of age, education, and duration of marriage are considered together, they affect sexual satisfaction, emotional satisfaction, suspicion and the sense of revenge, and verity-seeking.

As previously mentioned, according to the assumption that equality of variances was rejected in all five dependent variables, to ensure the results, nonparametric tests are also used. The results of Kruskal-Wallis's nonparametric analysis are presented in Table (7) to (9).

Table 7: Non-parametric Kruskal-Wallis test results for independent variable of age

Variable	Chi Square	Degree of Freedom	Significance
Tendency to relationships outside the marital domain	1.225	4	0.874
Sexual Satisfaction	7.84	4	0.098
Emotional Satisfaction	5.249	4	0.263
Suspicion and sense of revenge	6.249	4	0.181
verity-seeking	10.44	4	0.034

Table 8: Non-parametric Kruskal-Wallis test results for independent variable of Duration of Marriage

Variable	Chi Square	Degree of Freedom	Significance
Tendency to relationships outside the marital domain	5.661	4	0.129
Sexual Satisfaction	0.611	4	0.864
Emotional Satisfaction	1.248	4	0.741
Suspicion and sense of revenge	2.3	4	0.512
verity-seeking	0.560	4	0.906

Table 9: Non-parametric Kruskal-Wallis test results for independent variable of Education

Variable	Chi Square	Degree of Freedom	Significance
Tendency to relationships outside the marital domain	14.907	4	0.011
Sexual Satisfaction	11.2	4	0.048
Emotional Satisfaction	17.371	4	0.004
Suspicion and sense of revenge	10.844	4	0.055
verity-seeking	17.892	4	0.003

As it can be seen in Tables (7) to (9), null hypothesis was confirmed with nonparametric test, except for verity-seeking in age and variables (tendency to relationships outside the marital domain, sexual satisfaction, emotional satisfaction, and verity-seeking) in the education variable. Given the confirmation of null hypothesis in MANOVA analysis, the presumption of equality of variances in this variable was not necessary. Therefore, it is referred to the results of the MANOVA test. Thus, the interaction of age, education, and duration of marriage variables affect the criterion variables.

Findings of Fuzzy inference system with the output of betrayal:

In the fuzzy inference system, there are 18 inputs (sexual satisfaction, emotional satisfaction, verity-seeking, sense of revenge and suspicion, age, duration of marriage, level of education, traditionalism, religion, spirituality, addition of the person, addiction of the spouse, addiction to sexual relationships, personality disorder, Personal passage, existence of a gap between couples, reproductive capacity, bitter childhood experiences) and on output (tendency to betrayal). However, due to the lack of system's bustle, more than four variables such as sexual satisfaction, emotional satisfaction, verity-seeking, sense of revenge and suspicion have been used. To test the system, different input vectors are used, which are discussed below. Each of the

concepts of output and input, according to its nature, has three high, medium and low Fuzzy sets. The concepts of input and outputs, Fuzzy sets, the codes, and the parameters assigned to each Fuzzy set in Tables (10) and (11) are summarized as follows:

Table 10: Fuzzy sets for the tendency towards betrayal system

Triangular fuzzy sets		
Parameters	Code	Sets
[-0.4 0 0.4]	Low	Low
[0.6 1 1.4]	Middle	Middle
[06 1 1.4]	High	High
Trapezoidal Fuzzy Sets		
[0.49 0.5 1.1 1.5]	Not	Not

Table 11: Inputs and outputs for the tendency towards betrayal system

Inputs and Outputs			
Code	Meaning	Code	Meaning
JE	Sexual satisfaction	SO	Traditionalism
AT	Emotional satisfaction	HA	Drug addiction of the spouse
TA	verity-seeking	FR	Addiction of the person
EN	Sense of revenge and suspicion	RJ	Sexual addiction
SE	Age	EK	Personality disorder
MO	Duration of marriage	GO	Personal transition (change)
SA	Level of Education	FA	Existence of a gap between couples (due to working position)
MA	Religion	MI	Fertility rate
MN	Spirituality	TJ	Bitter experiences of the childhood

Therefore, Fuzzy sets, defined codes and parameters are defined similarly for 18 input concepts and one output concept. Figure 1 shows Fuzzy sets for the system output.

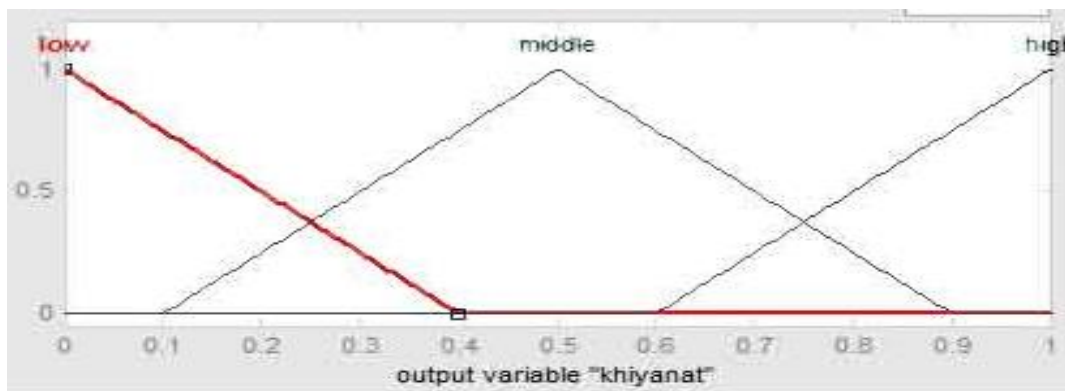


Figure 1: Fuzzy sets for the output of the tendency towards betrayal system

From the set of Fuzzy rules, after eliminating impossible situations, according to the experts, 70 Fuzzy rules are located at the base. The linking of all inputs in the introduction of the Fuzzy rule is with the operator "and". The relatively large number of these rules is due to the fact that possible Fuzzy rules are defined more fully when working on simulated data, the result of the simulation is expected to be more consistent with reality. In defining the number of Fuzzy sets, it is imperative to considered whether the inputs are continuous or discrete; which all inputs are continuous. In Table (12), Fuzzy rules defined in the most compressed form possible, which the use of numerical codes are reported.

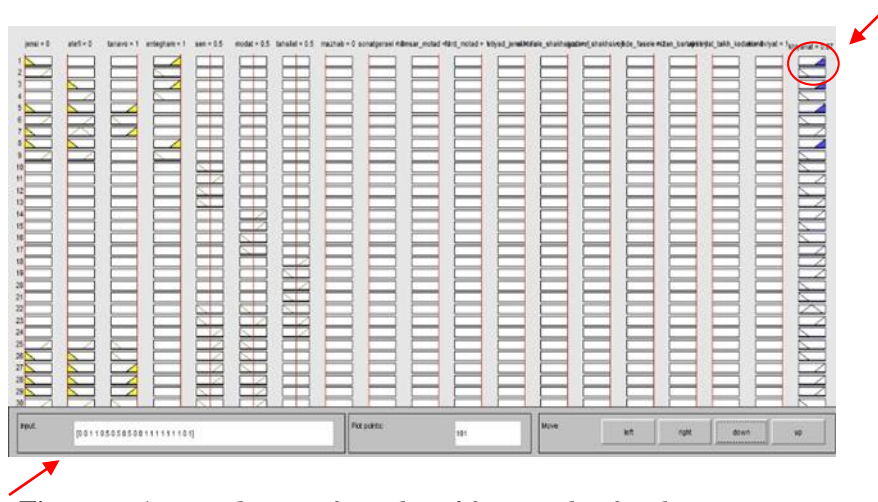


Figure 2: Accumulation of results of fuzzy rules for the given input

The value of the variable indicated in the figure above shows that with respect to the line vector defined as input, the value of 0.87 is expected for the output of the tendency towards betrayal, according to the defined Fuzzy inference system. So, in case of low sexual satisfaction, low emotional satisfaction, high levels of diversity and a sense of suspicion and revenge, then the tendency toward betrayal will be high as well.

In addition to the obtained value of 0.87, as you can see from the code specified at the bottom, the output level resulting from the accumulation of Fuzzy rule results can be obtained as well. Figure (3) shows the selective non-Fuzzy of the centroid method.

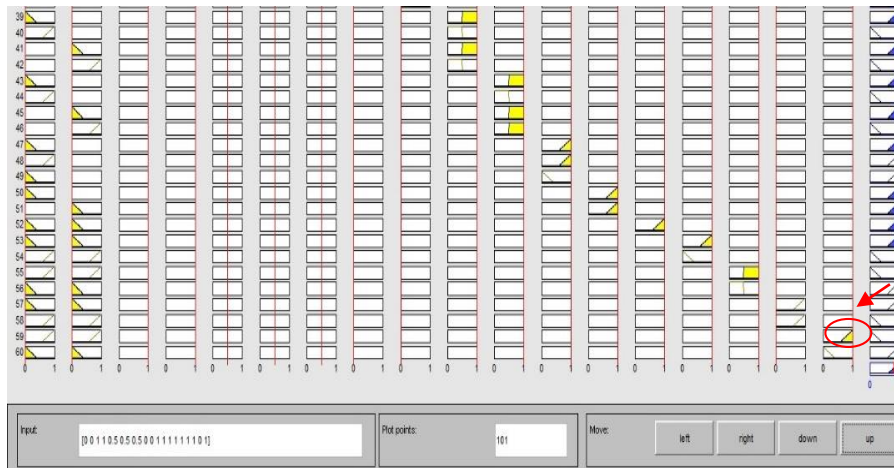


Figure 3: Accumulation of the results of fuzzy rules

In order to better illustrate the system in Figure 4, the number of Fuzzy rules has been reduced, but there is a case where there are strong incentives for tendency towards betrayal. The input vector used is (0 0 1 1.5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5), And Figure (5) shows the lack of tendency towards betrayal.

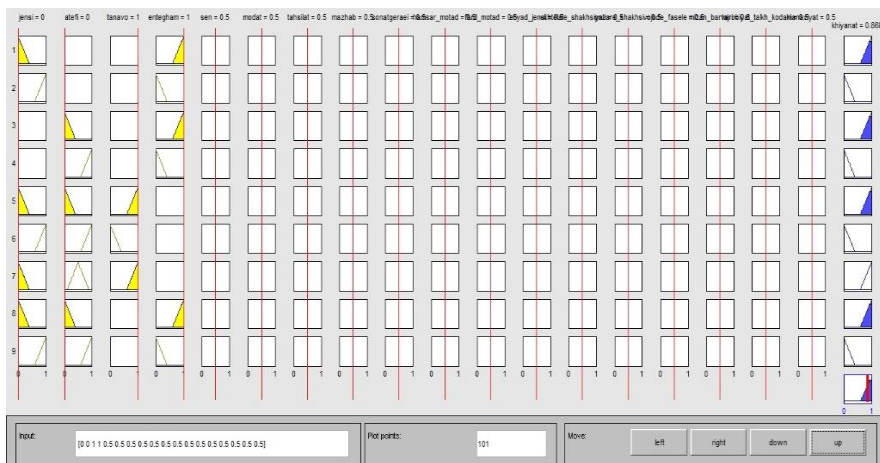


Figure 4: Tendency towards betrayal with Fuzzy rules

The determined value of 0.86 in the figure indicates that the tendency of female sample is high.

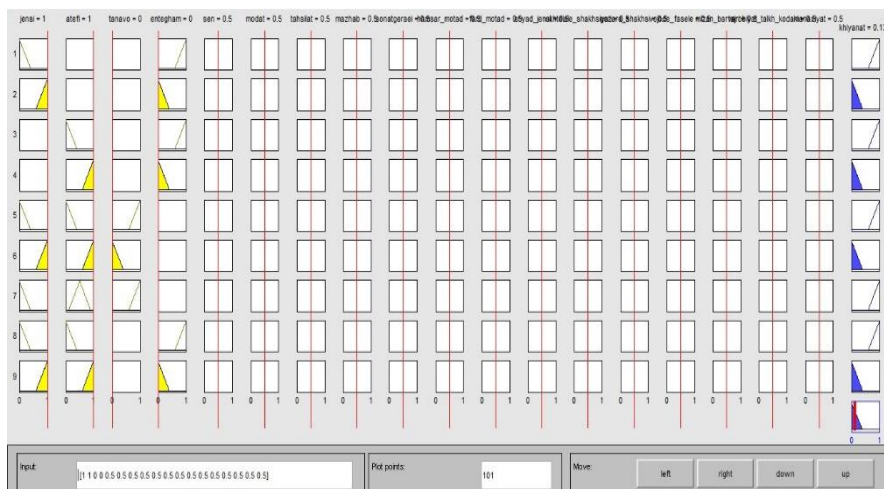


Figure 5: Lack of tendency towards betrayal with Fuzzy rules

From the value of 0.13 in the figure, it can be determined that with changing the input vector (1 1 0 0), in case of high sexual satisfaction, high emotional satisfaction, low verity-seeking and the sense of revenge then the tendency toward betrayal will be low.

Considering that one of the most widely used advantages of using Fuzzy inference systems is the use of simulation data, to determine changes in inputs will result in which outputs, we use one question to test the system.

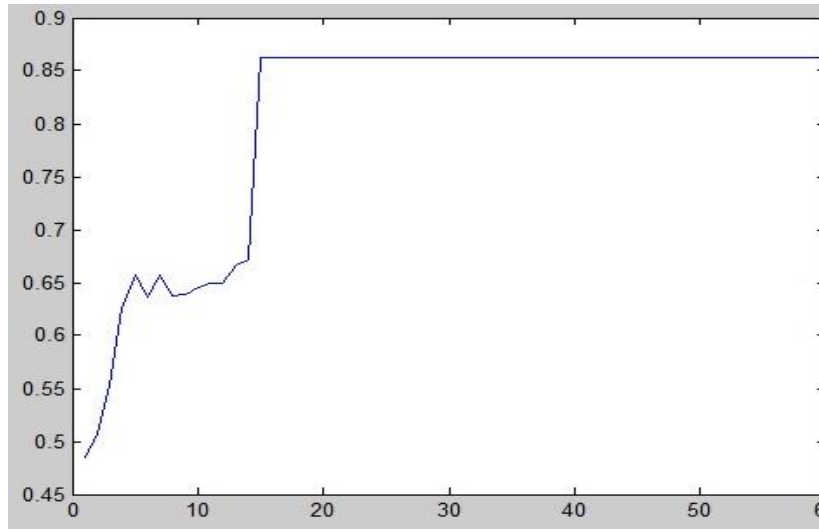
If two variables of emotional satisfaction and sexual satisfaction gradually move from desirable to undesirable (low tendency to high tendency towards betrayal) and other variables are fixed, then how will the rate of betrayal change?

The system's response to this question is analyzed in the form of the matrix of figure (6) and graphs (1) and (2):

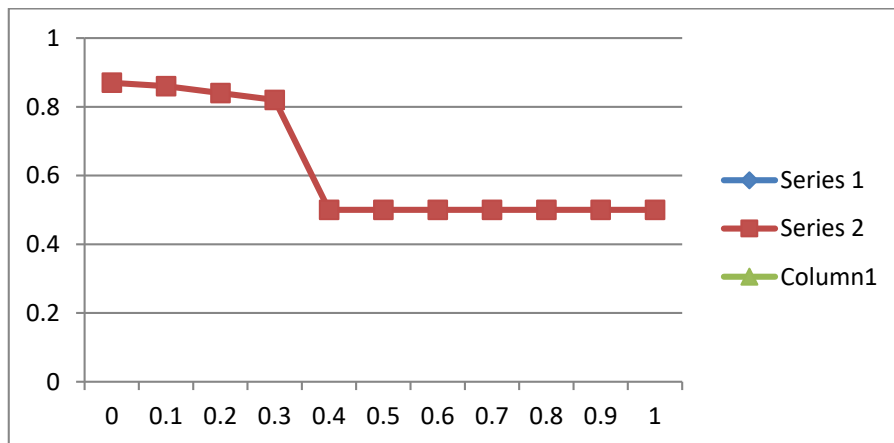
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1																
2	0.9000	0.9000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.8453
3	0.8000	0.8000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.5072
4	0.7000	0.7000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.5536
5	0.6000	0.6000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6259
6	0.5000	0.5000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6377
7	0.4000	0.4000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6566
8	0.3000	0.3000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6577
9	0.2000	0.2000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6588
10	0.1000	0.1000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6591
11	1.3878e-16	1.3878e-16	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6618
12	-0.1000	-0.1000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6701
13	-0.2000	-0.2000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6710
14	-0.3000	-0.3000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6721
15	-0.4000	-0.4000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
16	-0.5000	-0.5000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
17	-0.6000	-0.6000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
18	-0.7000	-0.7000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
19	-0.8000	-0.8000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
20	-0.9000	-0.9000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
21	-1.0000	-1.0000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
22	-1.1000	-1.1000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
23	-1.2000	-1.2000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
24	-1.3000	-1.3000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
25	-1.4000	-1.4000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
26	-1.5000	-1.5000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
27	-1.6000	-1.6000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
28	-1.7000	-1.7000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
29	-1.8000	-1.8000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
30	-1.9000	-1.9000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
31	-2.0000	-2.0000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
32	-2.1000	-2.1000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828
33	-2.2000	-2.2000	1	1	1	0.5000	0.5000	0.5000	0.5000	0.5000	1	1	1	1	1	1	0.6828

Figure 6: Decreasing the degree of membership of two variables and other variables remains stable

As it can be seen in the matrix, by decreasing the amount of sexual satisfaction (first variables) and emotional satisfaction (second variable) by a step of 0.1 and other variables remain fixed, the output is increasing, and this analysis is well shown in the graph:



Graph 1: Changing the output of betrayal by changing the two inputs



Graph 2: Changing the output of betrayal by changing one input

Testing Fuzzy system through the actual data entry: The following forms are related to paired information which their data is entered into the system and the output is provided:

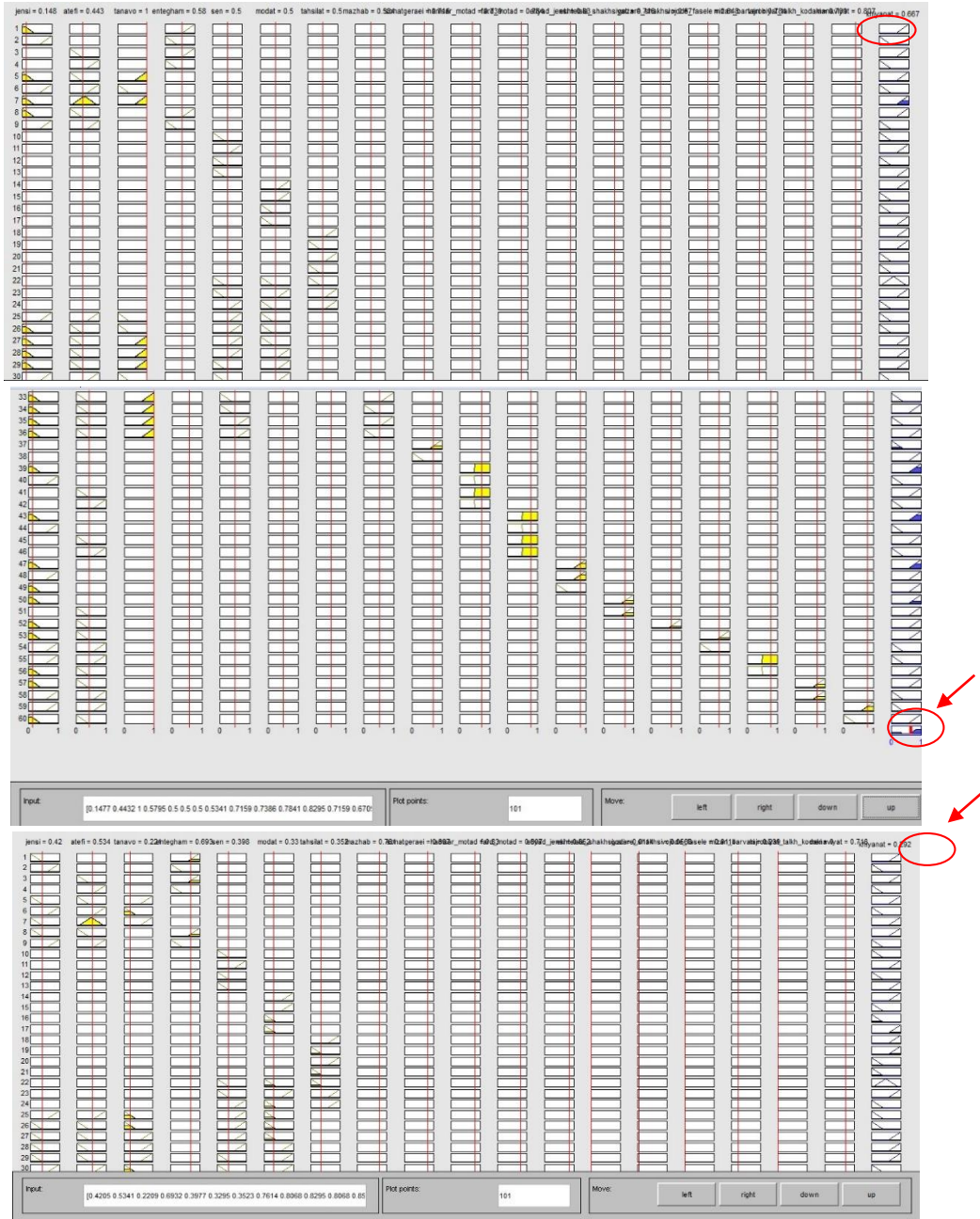


Figure 7: Results of the System with Real Data

Regarding the fact that the information about the male and female participants was separately entered, the output related to male participants, with a value of 0.66, suggests that if there are low sexual satisfaction, moderate emotional satisfaction, high verity-seeking, low sense of revenge, average age, moderate duration of marriage, high education, moderate tendency to religion, moderate traditionalism, lack of addiction of the person, lack of addiction of the wife, low sexual addiction, low personality disorder, high personal transition, high separation from one another, low fertility, low bitter childhood experiences and low spirituality, then the

rate of betrayal would almost be high; and in the case of a females with an output of 0.29, it can be said that if there are moderate sexual satisfaction, moderate emotional satisfaction, low verity-seeking, low sense of revenge, average age, moderate duration of marriage, moderate education, moderate tendency to religion, moderate traditionalism, lack of addiction of the person, lack of addiction of the husband, low sexual addiction, low personality disorder, low personal transition, high separation from one another, fertility power, low bitter experiences of childhood and high spirituality, then tendency towards betrayal would be low.

Discussion and Conclusion:

Findings of the present study suggest that married men and women who have a tendency towards betrayal, most likely don't have a satisfied sexual relationship with their spouse. These findings are consistent with the Controversy Theory of Oskarzony (2005). Our men and women in the traditional society are still unaware of their duties of providing pleasure for one another. Usually mating is done by force and unilaterally. Some men without considering the desires of their sexual partner and only to satisfy their erotic pleasure, engage in sexual activity whom unfortunately, their number is not low (Kaveh, 2004).

Motlagh Pirouz (2008) believes that many women complain about coldness of their spouses and believe that they cannot achieve sexual pleasure, but often they are not cold, but the problem of these women and their husbands is the lack of awareness of their sexual stimulation pattern, which this coldness are the same as anxiety, depression, and even digestive and chronic diseases after sex (Parvinian, 2004). The results of this research are consistent with Bagherinejad's research (2006), which showed that one of the causes of divorce is sexual dissatisfaction, and it is consistent with the research of Edwards and Booth (1994), who in a longitudinal study on married couples showed that decrease of sexual satisfaction over time is associated with increased probability of divorce.

Also, according to the results of this study, men and women who tend to have extramarital relationships are not satisfied with emotional relationships with their spouses; this is consistent with the results of Schulz (1997), Spring (1998), Mahabadi and Bachari (2003). There are only a few emotional needs that when are satisfied by an opposite sex, the individual feels so much happiness, that he/she is willing to risk having a secret relationship with that individual. These are the needs that, if satisfied lead to the most satisfactory and simple emotions in humans. These needs are: the need for admiration, the need for affection which is a symbol of security, support, calmness and approval.

The findings also suggest that there is a relationship between suspicion and a sense of revenge with the tendency towards extramarital relationships in men and women, which is more common in women. In fact, men and women in some cases do not have the ability to solve the problem and the crisis, and when there is a crisis in marital relations, the husband and wife instead of trying to solve the crisis, they show negative reactions toward the problem because of the lack of awareness and inability to solve it (Iwanir & Ayal, 1999). The results of the current research are consistent with the study of Kaveh (2004), who believed that when the unfaithfulness and betrayal of a spouse is revealed, the controversy and conflict arises between the two couples for a time, they do not come to a conclusion, a reaction like revenge comes to the mind the injures spouse, and sometimes to provoke the sense of jealousy and attraction of the spouse, the injured partner takes revenge and counteracts.

The results of the research, which show that women like men and even more are prone to verity-seeking that lead them to the tendency towards betrayal, is consistent with the view of Liten Tel (1994). He believes that the desire of some people (men and women) to illegitimate relationships is due to the fact that their long-term marital relationships do not satisfy their needs and they are biologically attracted to polygamy; in some cases, what leads to an illegitimate love relationship is the need for experience of passion and love and the desire to experience a new and forbidden sexual relationship.

Research findings also show that the interaction of age, level of education, and duration of marriage affect the tendency toward illegitimate relationships, sexual satisfaction, emotional satisfaction, suspicion, and the sense of revenge, and verity-seeking. In the first years of marriage, the role of sex, pleasure and excitement in relationships, establishing a sincere, emotional and romantic relationship is bold in a positive relationship between spouses, because usually couples do not have children or they have few children, and therefore they have more time for emotional and sexual relationship; however, because their experience in solving conflicts and problems is low and sometimes they do not know how to solve the problem, misunderstanding and dissatisfaction with marital relations may lead them to betrayal. While it is likely that in the following years, they will learn how to solve the conflict.

Sexuality and the need for love and affection, and the need for caresses and love affairs is stronger in young couples than couples who have long been married; and the lack of satisfaction of these needs lead to depression, aggression and more negative reactions. Moreover, young men cannot stand this dissatisfaction for a long time, and they are constantly seeking a solution to meet their unfulfilled needs in marital relationships. However, usually men who have been married for a long time, and the passion of the first years of marriage in their relationship have been lessened, more often the issues of children, promotion, and professional gain for more success, economic issues and educational and welfare needs of children become more important to them and, therefore, they are less likely to have a tendency towards illegitimate relationships. At the same time, they have more experience in dealing with problems and solving them (Shirdel, 2004).

In addition, in a general conclusion, it should be noted that the results of this study show that sexual and emotional satisfaction of women in marital life plays an important role in their satisfaction of their shared life and in their mental calmness and in turn reduces the number of conflicts between spouses. Previous domestic and international research in this area have also emphasized on the important role of couples' sexual satisfaction in life, although they have not specifically investigated such impact on the level of conflicts and tendency towards betrayal.

According to the findings of Fuzzy inference in the current study, a model was developed to measure the tendency of individuals toward betrayal. This method represents a kind of predictive model. Indicators are those concepts that are defined by experts as factors influencing betrayal. However, all 18 factors expressed in the system predict the tendency toward betrayal; so as we have seen, the greatest impact was observed when these concepts interact with each other. Concepts of emotional dissatisfaction, sexual dissatisfaction, verity-seeking and the sense of revenge in interaction with age, duration of marriage, spirituality, and personality disorders had maximum effect.

Form other results of the designed model it can be noted that with the increase of emotional or sexual satisfaction, tendency towards betrayal decreases to a certain extent and then due to the influence of other factors it remains fixed; these results are consistent with the results of tested hypotheses presented in the first section. The results obtained from the designed model for the input data of the samples is equivalent to the results obtained by the expert diagnosis of the same samples, which indicates the correct functioning of the system.

Therefore, according to the findings of the current study and considering that sexual issues are among the most important issues in marital life, and adjustment in sexual relations and proportion and balance in the amount of sexual desire in men and women are the most important causes of happiness and success of marital life; moreover, the emotional need is a desire and passion that if satisfied, will create a sense of satisfaction and happiness in the person, otherwise it will cause frustration and discontent in the person. by creating a cultural context for raising sexual and emotional satisfaction and reducing variety-seeking and revenge, the tendency towards a relationship outside marital life in married couples can be reduced.

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