




# The Effect of Combination of Increased Physical Activity and Verbal Communication on Life Satisfaction and Happiness of Couples

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## ABSTRACT

**Objective:** This study aimed to determine the effect of combination of increased physical activity and verbal communication on life satisfaction and happiness of couples.

**Materials and Methods:** The research method was quasi-experimental with pre-test and post-test followed up. The statistical population consisted of couples referring to counseling centers and psychological services under the supervision of well-being and the organization of the Psychological System of Qom in 2019, which numbered 558 couples. The sample required by convenience sampling from counseling centers and psychological services of Qom city was 60 couples who in the process of the study eventually reached 48 couples in 3 groups (15 couples in the intervention group increased physical activity with verbal communication, 16 couples in the intervention group of increased physical activity without verbal communication and 17 couples in the intervention group with no increased physical activity) were selected. For data collection, life satisfaction questionnaire (Deiner et al., 1985) and Oxford happiness questionnaire (Hill & Argyll 2002) were used. Interventions included increased physical activity based on Pour-Ranjbar and Nematollahzadeh Mahani protocol (2005), verbal communication based on sessions of verbal communication training program (Miller et al. 2004) and intervention of the researcher's proposed combined program. In this study, the data were analyzed by repeated measures analysis of variance using SPSS software version 25.

**Findings:** The findings showed that the combination of increased physical activity with verbal communication had a significant effect on "life satisfaction" and "happiness of couples" with effect size of 0.31. The results of Tukey's post hoc test showed that the main factor in increasing life satisfaction and happiness of couples is increased physical activity with verbal communication. Also, the effect of increased physical activity on life satisfaction and happiness of couples was 0.23 and the effect of verbal communication on increasing life satisfaction and happiness of couples was estimated as 0.15.

**Conclusion:** According to the results of the study, it can be concluded that combination of all three interventions, especially increased physical activity along with verbal communication, are effective methods for increasing life satisfaction and happiness of couples, and these interventions can be used as a combined intervention.

**Keywords:** Verbal Communication, Happiness, Physical Activity, Life Satisfaction, Couples.

## 1. Introduction

The family is the most important social institution necessary for the survival of society. The family is the center for maintaining health, mental hygiene, and fulfilling various physical, rational, and emotional needs. Numerous variables influence the way spouses communicate with each other in married life, which leads to their satisfaction or dissatisfaction with their marital life (Parsakia et al., 2023). Therefore, one of the indicators of the spouses' mental health is their level of satisfaction with life. Life satisfaction refers to an individual's attitude, a general evaluation of their overall life, or aspects of life such as family and marital life (Blasco-Belled et al., 2020; Diener et al., 1985). Life satisfaction in couples is a very important aspect of marital relationships (Marashi et al., 2016) and is a significant factor in the stability of marital life in couples (Foroughi et al., 2018; Rose et al., 2018) and plays an important role in avoiding marital problems (Hasson-Ohayon et al., 2019). Various factors can play a role in individuals' life satisfaction, with happiness considered as a key variable in life satisfaction. This is a two-way interaction where life satisfaction can also lead to individuals' happiness (Blasco-Belled et al., 2020). Happiness is a positive emotional state characterized by contentment and pleasure, accompanied by attributes and symptoms such as positive beliefs about life, positive emotions, and the absence of negative emotions (Lavner et al., 2016; Sepehrian-Azar et al., 2016). In other words, happiness is a mental peace that predicts desirable outcomes for life, enhances life satisfaction, and leads to optimism in individuals' lives (Chen et al., 2018; Sadeghi & Taher, 2019; Trudel-Fitzgerald et al., 2019; Yazdanpanah et al., 2019).

Considering the importance of life satisfaction and happiness and the role of these two constructs in strengthening marital life, identifying factors that can influence these two variables and lead to increased life satisfaction and happiness should be a focus for those working in the family field (Abedini et al., 2022; Kamthan et al., 2019; Lawrence et al., 2019). Most studies have been conducted using psychological interventions, with less attention given to physical dimensions and physical activities. Research on the role of physical activities in improving couples' relationships and increasing happiness and life satisfaction in couples is very limited, despite the well-known impacts of physical activities on physical health and their influence on the psychological aspect of life (Abedini et al., 2022; Blasco-Belled et al., 2020; Nikrahan

& Ghasemi, 2019; Zhang & Chen, 2019). Physical activities, considering their mood effects and the ability to manage responses to excitability, can not only bring positive conditions for the individual but also improve an individual's abilities in interpersonal relationships and high-pressure situations. Thus, interventions based on physical activities should be considered in interventions related to couples. Ibanez-Perez et al. (2019) showed that increased physical activity improves the quality of life in couples (Ibañez-Perez et al., 2019). Mikkelsen et al. (2017) demonstrated that increased physical activity improves mood (Mikkelsen et al., 2017). Oaten and Cheng (2006) also found that increased physical activity regulates mood in the short and long term (Oaten & Cheng, 2006).

Sackett-Fox et al. (2021) and Yorgason et al. (2018) showed that increased physical activity with a loved one improves mood and increases relationship satisfaction (Sackett-Fox et al., 2021; Yorgason et al., 2018). Physical activity and exercise contribute to life satisfaction and individual happiness through two pathways: the release of endorphins and the reduction of cortisol levels (An et al., 2020; Pengpid & Peltzer, 2019). Porges (2007) emphasized the role of physiological reactions in the emotional dimension and individuals' reactions to high-pressure situations in his theory and considered the function of the sympathetic and parasympathetic systems in response to environmental situations and the inhibition of certain behaviors as important (Porges, 2007). Physical activities can help balance emotional responses and predict a higher quality of marital relationship. In other words, physical activity can help individuals manage physical symptoms and reactions to high-pressure environments, improving their relationships and thus contributing to their life satisfaction (Nelson, 2022). In addition to the aforementioned, exercise and physical activity can play a role in improving sexual relationships and increasing couples' physical readiness for satisfying sexual relations (Hornbuckle et al., 2021), and all these factors can play a role in the effectiveness of physical activity in improving relationships and enhancing the quality of marital life, life satisfaction, and happiness.

Given that communication is an inseparable part of a couple's relationship, it seems important in marital life and marital communication includes the verbal and non-verbal exchange of thoughts and feelings between spouses. This communication is the central core of the family system and its disruption is considered a serious threat to the family's survival (Javadi et al., 2021). On the other hand, communication skills in couples can lead to joy and

happiness. People with high communication skills, especially verbal communication skills, can express their desires, needs, and feelings well and discuss issues and problems without turning the conversation into an argument. This leads to the experience of more positive emotions in life, which can bring happiness and joy (Lavner et al., 2016). Numerous studies confirm the effectiveness of communication skills on couples' happiness (An et al., 2020; Blasco-Belled et al., 2020; Lawrence et al., 2019; Nikrahan & Ghasemi, 2019). Considering the research background, increased physical activity and verbal communication can affect life satisfaction and happiness in couples, raising the question of whether the combined effect of increased physical activity and verbal communication on life satisfaction and happiness in couples differs from the effect of each individually.

Considering the importance of life satisfaction and happiness in improving life conditions and reducing marital life problems, the importance of choosing a more effective intervention on one hand, and the role of physiological changes in the body in emotional and high-pressure situations, as well as the importance of communication and verbal communication in relationships between couples, interventions based on physical activity and verbal communication were examined. Since research and theoretical backgrounds confirm the effectiveness of integrative interventions, combined intervention was also considered. In this regard, the present study seeks to answer whether the combined effect of increased physical activity and verbal communication on life satisfaction and happiness in couples differs from the effect of each individually.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The methodology of this study was a quasi-experimental design with pre-test, post-test, and a follow-up phase. The study population comprised all couples (male and female) who visited counseling and psychological service centers under the supervision of the Welfare Organization and the Psychology Organization of Qom city in 2019, totaling 558 couples. From the 32 centers, three were randomly selected, and 60 couples willing to participate were chosen from among them. Finally, they were randomly divided into 3 groups, with the final number due to limitations and attrition reaching 48 couples. Fifteen couples were in the increased physical activity intervention group with verbal communication; 16 couples in the increased physical activity

group without verbal communication; and 17 couples in the verbal communication group without increased physical activity. Considering that the method is quasi-experimental, and such methods require a sample size of no less than 15 individuals, and anticipating sample attrition, an additional 5 couples were selected for each group. Inclusion criteria for the study were informed consent to participate in the study, absence of serious physical and psychological issues, age between 25 – 35 years, at least 6 months of cohabitation under one roof, holding a bachelor's degree, scoring low in life satisfaction and happiness, having marital and high-tension relationship issues. Exclusion criteria included lack of interest in continuing participation, absence from more than three training sessions, and receiving concurrent psychological interventions.

Through posting announcements in counseling centers and information dissemination via Instagram, a total of 60 couples were selected based on identification documents and educational qualifications, as well as their statements. They were eventually divided into three groups. The couples from all three groups were pre-tested under identical conditions using life satisfaction and happiness questionnaires. The responses from the questionnaires of each group were coded and stored in envelopes specific to each group. At this stage, the couples received group training, including physical activity instruction and verbal communication training in person. The physical activity training took place in a dedicated gym room, and the verbal communication training was conducted at the counseling center. The sessions were held in the gym (it should be noted that the physical activity component was conducted separately for each gender). The research questionnaire for each individual was stapled in three copies: one for the pretest, another for the posttest, and a third for follow-up (it should be noted that the questionnaire administration took place at the counseling center). After completing the pretest, the filled questionnaires were collected, and the first experimental group, after obtaining ethical consent, underwent increased physical activity combined with verbal communication. The second experimental group underwent increased physical activity without verbal communication, and the third group underwent verbal communication without increased physical activity. After the training sessions, a posttest was conducted for all three groups under similar conditions. The couples responded to the same questionnaires they had answered in the pretest. In this phase, all three groups answered the posttest questions under similar conditions, and each couple filled out another blank copy of their

respective questionnaires, which had been stored with their name and code during the pretest. Additionally, a follow-up phase was conducted after 60 days, where the couples responded to the life satisfaction and happiness questionnaires for the third time. After collecting the pretest, posttest, and follow-up data, the gathered information was analyzed using appropriate statistical tests, and appreciation was expressed to all the couples who participated in the study. It should be noted that the implementation period was from June to December 2019.

2.2. Measures

2.2.1. Life Satisfaction Questionnaire

Developed by Diener, Emmons, Larsen, and Griffin (1985), this questionnaire comprises 5 questions, scored on a 7-point Likert scale. Each question has 7 options ranging from 'strongly disagree' to 'strongly agree,' with 'strongly disagree' scored as 1, and 'strongly agree' as 7. Hence, scores range from 5 to 35, with higher scores indicating greater life satisfaction (Diener et al., 1985). In Iran, the psychometric properties of the questionnaire have been examined. For reliability, internal consistency was used, yielding a Cronbach's alpha coefficient of .78 (Sadeghi & Taher, 2019). Internationally, its psychometric properties have been investigated and its reliability and validity is proven (Blasco-Belled et al., 2020; Yorgason et al., 2018).

2.2.2. Happiness Questionnaire

The Oxford Happiness Questionnaire, created by Hill and Argyle (2002), contains 29 questions based on the Beck Depression Inventory. It measures 5 components: Satisfaction (Q1, 2, 3, 5, 6, 8, 24, 26), Self-Esteem (Q4, 10, 11, 15, 20, 21, 23), Subjective Well-Being (Q12, 16, 18, 19,

29), Peace of Mind (Q7, 9, 17, 23), and Positive Mood (Q22, 27, 28). Scoring is on a 4-point Likert scale, thus the minimum and maximum possible scores for a participant are 29 and 116, respectively, with higher scores indicating greater happiness. In Iran, reliability was assessed using internal consistency, yielding a Cronbach's alpha of .78. Internationally, the questionnaire's psychometric properties have been assessed, with studies reporting a decent validity and reliability (SalehSedghpour et al., 2020; Trudel-Fitzgerald et al., 2019; Zhang & Chen, 2019).

2.3. Interventions

2.3.1. Increased Physical Activity Sessions

This intervention consisted of a 60-minute program, conducted once a week for 8 weeks under the supervision of a physical education instructor (Master's in Physical Education). The program included 15 minutes of warming up, 10 minutes of stretching, 30 minutes of aerobic exercise (including slow and fast continuous running, chasing games, fast and slow marching, jacking, and Swedish exercises), with the intensity set between 70 to 75% of the maximum heart rate. The session ended with 5 minutes of cooling down (An et al., 2020; Gerber et al., 2014).

2.3.2. Verbal Communication

The intervention program in this area was based on the verbal communication training sessions between couples by Miller et al. (2004). The sessions were focused on verbal communication skills. In this intervention, each couple participated in a 60-minute session once a week for 8 weeks, where they engaged in discussions based on prior training (Azarnik et al., 2022; Lavner et al., 2016).

**Table 1**

*Verbal Communication Sessions*

Session	Objectives	Techniques	Tasks
Week 1	Establishing a good relationship, self-awareness about oneself and issues with spouse	Self-awareness, desires, expectations, and interpersonal problems	Couples were taught to pay attention to each other while speaking and expressing their problems. They were first taught to recognize their own desires, expectations, and then talk about their marital issues. In this session, couples discussed a marital life issue and talked about it.
Week 2	Identifying ineffective communication patterns	Introducing healthy communication, rules and principles of effective healthy communication	They became familiar with healthy communication, its rules, and principles and were then asked to examine these in their marital communications, identifying instances of unhealthy communication and where they had healthy communication.
Week 3	Increasing awareness about communication and verbal interaction	Effective listening, barriers to listening, rules of verbal communication	In this session, couples were taught the skill of listening and the barriers to listening, taking turns in speaking, and verbal communication. They were asked to talk about a topic in their life and practice the principles of communication and active listening, identifying their communication barriers.

Week 4	Increasing awareness about basic needs and how to express them	The five basic needs	In this session, types of needs including security, autonomy, self-expression, accepting limitations, and leisure were taught. Then, the couples were asked to first recognize their own needs and then express them.
Week 5	Increasing awareness about identifying expectations and desires	Recognizing emotions and expectations	In this session, couples were taught about expressing expectations and emotions. They discussed their expectations of marital life and talked about identifying realistic and unrealistic expectations.
Week 6	Improving communication patterns	Identifying negative communication patterns	They became familiar with Gottman's four negative communication patterns (criticism vs. complaint, contempt, defensive behavior, stonewalling). They reviewed their problematic relationships to see which patterns they used most often.
Week 7	Improving communication patterns	Creating appropriate behavioral patterns	False communication beliefs were eliminated and replaced with correct beliefs, establishing communication patterns and correct communication methods. Couples practiced their daily conversations with these new patterns.
Week 8	Summarizing and concluding the intervention	Reviewing concepts related to healthy communication, verbal interaction, barriers, and empathetic understanding	This session was a review of the previous sessions. Couples revisited the technique of healthy communication. They focused on establishing communication with full attention, body language, turn-taking, listening barriers, attending to each other's needs, expectations, and expressing emotions.

### 2.3.3. Increased Physical Activity Combined with Verbal Communication

This intervention was a combination of the two previous interventions and was used for the first time. The researcher, based on theoretical and research foundations indicating the effectiveness of increased physical activity and verbal communication interventions in empowering individuals to manage emotions and mood changes, thereby improving relationships, decided to use a combined approach to enhance the effectiveness of interventions in solving couple problems. Each intervention method was implemented according to its specific protocol with proven efficacy and research background. As the interventions targeted two

different dimensions, one physical and the other psychological-social, the researcher fully utilized both interventions in a combined approach, extending the duration compared to other methods. This intervention involved 8 weeks of increased physical activity, each session lasting 60 minutes under the supervision of a Master's in Physical Education, followed by a couples' discussion on the taught subjects under the supervision of a Master's in Psychology. After physical activity, couples discussed the subjects they had learned. At this stage, couples had already been trained in physical activity and verbal communication skills and were implementing these two methods in combination. Considering the combination of physical activity and verbal communication methods, the intervention lasted 120 minutes.

**Table 2**

#### Combined Intervention Sessions

Session	Objectives	Techniques	Tasks
Week 1	Establishing a good relationship, self-awareness about oneself and issues with spouse	Self-awareness, desires, expectations, and interpersonal problems	Couples were taught to pay attention to each other while speaking and expressing their problems. They were first taught to recognize their own desires, expectations, and then talk about their marital issues. In this session, couples discussed a marital life issue and talked about it.
Week 2	Identifying ineffective communication patterns	Introducing healthy communication, rules and principles of effective healthy communication	They became familiar with healthy communication, its rules, and principles and were then asked to examine these in their marital communications, identifying instances of unhealthy communication and where they had healthy communication.
Week 3	Increasing awareness about communication and verbal interaction	Effective listening, barriers to listening, rules of verbal communication	In this session, couples were taught the skill of listening and the barriers to listening, taking turns in speaking, and verbal communication. They were asked to talk about a topic in their life and practice the principles of communication and active listening, identifying their communication barriers.
Week 4	Increasing awareness about basic needs and how to express them	The five basic needs	In this session, types of needs including security, autonomy, self-expression, accepting limitations, and leisure were taught. Then, the couples were asked to first recognize their own needs and then express them.
Week 5	Increasing awareness about identifying expectations and desires	Recognizing emotions and expectations	In this session, couples were taught about expressing expectations and emotions. They discussed their expectations of marital life and talked about identifying realistic and unrealistic expectations.

Week 6	Improving communication patterns	Identifying negative communication patterns	negative	They became familiar with Gottman's four negative communication patterns (criticism vs. complaint, contempt, defensive behavior, stonewalling). They reviewed their problematic relationships to see which patterns they used most often.
Week 7	Improving communication patterns	Creating appropriate behavioral patterns	behavioral	False communication beliefs were eliminated and replaced with correct beliefs, establishing communication patterns and correct communication methods. Couples practiced their daily conversations with these new patterns.
Week 8	Summarizing and concluding the intervention	Reviewing concepts related to healthy communication, verbal interaction, barriers, and empathetic understanding	verbal	This session was a review of the previous sessions. Couples revisited the technique of healthy communication. They focused on establishing communication with full attention, body language, turn-taking, listening barriers, attending to each other's needs, expectations, and expressing emotions.

**2.4. Data Analysis**

In this research, descriptive statistics such as mean, standard deviation, minimum, maximum, and inferential statistics including repeated measures analysis of variance (mixed analysis), hypotheses including the Kolmogorov-Smirnov test for normality, Box's M test for examining variance-covariance matrices, the interaction of pretest assumptions and multicollinearity among auxiliary variables (pretests), and linearity assumption (scatterplot) were used. Additionally, Tukey's post hoc test was used to compare intervention groups, utilizing SPSS software version 25.

**3. Findings and Results**

The mean (standard deviation) age of participants in the first experimental group was 32.7 (9.4), in the second

experimental group 33.3 (9.8), and in the third experimental group 33.0 (7.9). There were no significant age differences among the three groups ( $P = 0.128$ ).

To examine the significance of differences in life satisfaction and happiness scores between the two experimental groups and the control group, repeated measures analysis of variance was used. The results of the Kolmogorov-Smirnov test for the research variables indicated the data's normal distribution. The Levene's test for homogeneity of variances assumption in the experimental and control groups showed equal variances of the research variables in pre-test, post-test, and follow-up stages. Also, the results of the Mauchly's test of sphericity indicated a lack of covariance matrix sphericity among the groups and the necessity to use the conservative Greenhouse-Geisser test.

**Table 3**

*Results of Mean and Standard Deviation*

Variable	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Follow-up Mean	Follow-up SD
Life Satisfaction	Experiment 1	21.47	2.29	32.04	1.95	32.20	1.90
	Experiment 2	20.94	2.82	30.15	3.57	31.19	4.47
	Experiment 3	17.25	1.41	23.82	2.26	24.86	5.33
Happiness	Experiment 1	21.36	2.60	61.33	9.10	62.00	9.11
	Experiment 2	22.13	3.08	59.96	8.89	60.65	8.96
	Experiment 3	18.29	1.74	50.66	4.82	51.17	4.86

Experiment 1 Group: Combined Intervention; Experiment 2 Group: Increased Physical Activity; Experiment 3 Group: Verbal Communication

The results of the multivariate repeated measures analysis of variance among the study groups for life satisfaction and happiness variables showed that the between-subjects effect (group) is significant, meaning that at least one of the groups differs from the others in at least one of the variables of life

satisfaction and happiness. The within-subjects effect (time) for the research variables was also significant, indicating that there has been a change in at least one of the mean variables over time from pre-test to follow-up.

**Table 4**

*The Results of Analysis of Variance*

Scale	Source of Effect	Sum of Squares	Degrees of Freedom	Mean Squares	F	Significance	Eta Squared
Life Satisfaction	Time	119.46	1.13	92.71	148.15	0.001	0.84
	Time*Group	93.95	2.26	72.91	116.52	0.001	0.80
	Group	146.94	2	146.94	41.16	0.001	0.59
Happiness	Time	400.08	1.13	296.70	261.46	0.001	0.90
	Time*Group	277.06	2.26	205.46	181.07	0.001	0.86
	Group	260.10	2	260.10	14.93	0.001	0.35

The results in Table 4 indicate that the analysis of variance for the within-group factor (time) is significant and the between-group effect is also significant. This means that considering the group effect, the time effect is also

significant on its own. Additionally, the interaction of group and time is significant. Furthermore, the Bonferroni post-hoc test was used for pairwise comparison of the groups.

**Table 5**

*The Results of Tukey's Post-Hoc Test*

Variable	Group	Compared Group	Mean Difference	Significance
Life Satisfaction	Experiment 1	Experiment 2	1.89	0.019
		Experiment 3	8.22	0.001
		Experiment 3	6.33	0.001
Happiness	Experiment 1	Experiment 2	1.37	0.025
		Experiment 3	10.67	0.001
		Experiment 3	9.30	0.001

The results in Table 5 show that life satisfaction and happiness in the first experimental group (increased physical activity with verbal communication) are higher in the post-test than in the pre-test compared to the second (increased physical activity without verbal communication) and third (verbal communication without increased physical activity) experimental groups ( $P < 0.01$ ). Also, the comparison between the second and third experimental groups revealed a significant difference in life satisfaction and happiness scores ( $P < 0.05$ ). Specifically, the second experimental group (increased physical activity without verbal communication) had a greater impact on increasing life satisfaction and happiness among couples compared to the third experimental group (verbal communication without increased physical activity).

**4. Discussion and Conclusion**

This study aimed to determine whether the combined effect of increased physical activity and verbal communication on life satisfaction and happiness among couples is greater than the effect of increased physical activity or verbal communication alone. The results showed that the combination of increased physical activity and verbal communication had a significant impact on life

satisfaction and happiness among couples, greater than the effect of increased physical activity or verbal communication alone. These results are in line with the findings of previous studies (Azarnik et al., 2022; Foroughi et al., 2018; Javadi et al., 2021; Lavner et al., 2016), confirming the relationship between verbal communication skills and life satisfaction.

The family, being the most crucial social institution, is essential for societal survival, serving as the hub for maintaining health, mental hygiene, and satisfying diverse physical, rational, and emotional needs. Numerous variables influence how couples communicate, affecting their satisfaction or dissatisfaction with marital life (Yazdanpanah et al., 2019). Thus, one of the mental health indicators for couples is their level of life satisfaction and happiness. Communication skills are also a significant factor in marital life, including marital life quality and life satisfaction. Couples with good communication skills, especially verbal communication, can easily discuss their desires, needs, thoughts, and feelings, increasing mutual understanding. This mutual understanding enhances individuals' satisfaction with the relationship and, consequently, their life satisfaction.

If individuals, in addition to having a better mood and emotional environment, also possess stronger verbal communication skills, these combined skills make them more effective in coping with high-pressure situations and better at handling conflict situations. Therefore, the combination of increased physical activity with verbal communication significantly impacts life satisfaction. In other words, the combination of increased physical activity and verbal communication is effective in enhancing life satisfaction among couples. It appears that increased physical activity between couples induces cooperation, necessitating dual coordination and non-verbal communication. Solely verbal communication may not be helpful in improving relationships and life satisfaction among couples who have not learned verbal communication skills. However, coordinated non-verbal communication between couples can be more beneficial for life satisfaction. Additionally, communication skills, the way couples communicate, and verbal interactions are good predictors of marital life satisfaction among couples (Javadi et al., 2021). Verbal and non-verbal communications play a crucial role in sexual and marital satisfaction and happiness among couples (Blasco-Belled et al., 2020).

It was also found that increased physical activity plays a significant role in couples' life satisfaction. Physical activity generally benefits individuals' physical health, improving functional capacity, reducing disease risks, improving body composition, and aiding weight loss. Other studies have also shown the psychological benefits of physical activity, including mood improvement and reduced depression and anxiety. Furthermore, physical activity has extensive effects on life quality and satisfaction (An et al., 2020; Zhang & Chen, 2019). Other results from the research showed that the combination of increased physical activity and verbal communication had a significant impact on couples' happiness, effectively enhancing it (Kamthan et al., 2019; Trudel-Fitzgerald et al., 2019; Zhang & Chen, 2019). The changes caused by endorphins and serotonin from physical activity can affect mood and create a more peaceful environment for couples, leading to greater happiness and joy in the relationship.

The results also showed that increased physical activity significantly affects increased life satisfaction and happiness among couples. In fact, physical activity, through releasing endorphins and serotonin and reducing cortisol levels, can simultaneously create life satisfaction and happiness among couples. Various research studies have established the relationship between life satisfaction and happiness among

couples, showing that increased life satisfaction leads to greater happiness among couples. These results are in line with the previous research (An et al., 2020; Pengpid & Peltzer, 2019).

Another result of the research showed that verbal communication affects couples' happiness, effectively increasing it. These results are consistent with the previous research (Abedini et al., 2022). Communication helps couples better understand each other's gender differences and know each other more, paying more attention to each other's emotions and needs. When spouses are satisfied with meeting their needs and expectations in marital relationships, they experience more joy and happiness. Another result of the research showed that the combination of increased physical activity and verbal communication is effective in enhancing couples' happiness. This result aligns with the previous research (Gerber et al., 2014; Oaten & Cheng, 2006). The changes caused by endorphins and serotonin from physical activity can affect mood and create a calmer environment for couples, facilitating better communication and bringing more happiness and joy to the relationship.

Among other results, the significant impact of verbal communication on increasing life satisfaction and happiness among couples was noted. Verbal communication is an inseparable element of a couple's relationship. Through verbal communication, couples convey their thoughts and feelings, forming the core of the family system. Couples can express their desires, needs, and emotions through verbal communication, discussing issues and problems without escalating into arguments. This leads to experiencing more positive emotions in life, which can accompany happiness and consequently increase life satisfaction. Therefore, the better the couples' verbal communication skills, the more effectively and positively they interact with each other, reducing tension. This, in turn, enhances the experience of positive emotions in the family, which can be a factor towards happiness and life satisfaction among couples.

## 5. Limitations & Suggestions

Every research study has its limitations, problems, and deficiencies, which affect the precise implementation and presentation of findings. In this study, the researcher faced the following limitations: The study was conducted using a convenience sampling method, which could affect the generalizability of the research results. Only self-report instruments were used to assess each variable, which might



influence the results. The lack of control over personality traits, educational levels, and socio-economic status of the couples could also impact the results. Considering the use of a convenience sampling method in this study, it is recommended to use probabilistic research designs in future studies to increase the generalizability of the results. Since only self-report instruments were used to assess each variable, future research should, if possible, use additional assessment tools. Due to the lack of control over personality traits, educational levels, and socio-economic status of the couples, it is suggested that more thorough matching be conducted in future studies.

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### Declaration of Interest

The authors of this article declared no conflict of interest.

### Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

### Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. In the implementation phase, an ethics code numbered IR.IAU.QOM.REC.1399.096 was obtained, and the privacy and confidentiality of the collected data were respected. The collected information was used solely for the purpose of this

study. Additionally, respect for the dignity and rights, privacy, confidentiality, and freedom of the participants was observed. Explaining the research objectives to the participants, obtaining informed consent from them, the voluntary nature of the study, the right to withdraw from the study, the harmlessness of the interventions of increased physical activity and verbal communication, answering questions, and providing results to the participants if desired were other ethical principles followed in this study.

### Authors' Contributions

The authors of this study, Zahra Shahmoradi, Majid Zargham Hajebi, and Alireza Aghayousefi, made substantial contributions to various aspects of the research project. Zahra Shahmoradi played a pivotal role in conceptualizing the study and assisting in its design, data collection, analysis, and manuscript preparation. Majid Zargham Hajebi served as the principal investigator, leading the project, developing research objectives, supervising data collection, and contributing significantly to data analysis and manuscript co-authorship. Alireza Aghayousefi contributed to the literature review, participated in participant recruitment, assisted in data collection, and collaborated in implementing interventions. Together, the authors' collective efforts resulted in a comprehensive study exploring the impact of increased physical activity and verbal communication on the life satisfaction and happiness of couples, with their contributions spanning from inception to the final manuscript approval.

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