ORIGINAL ARTICLE

Comparison of the Effects of Cognitive Behavioral Couple Therapy and Acceptance and Commitment Therapy on Intimacy and Marital Adjustment among Couples Applying for Divorce in Bushehr (Iran)

Seyed Esmaeil Mousavi Haghighi[1], PhD Candidate; Ali Pouladi Rishehri[1, 2], PhD; Seyed Asghar Mousavi[1], PhD

[1]Department of Psychology, Bushehr Branch, Islamic Azad University, Bushehr, Iran
[2]Department of Psychology, Payame Noor University, Tehran, Iran

Correspondence:
Ali Pouladi Rishehri, PhD; Department of Psychology, Bushehr Branch, Islamic Azad University, Postal code: 75158-95496, Bushehr, Iran
Tel: +98 77 33350173
Email: pooladirishehriali@gmail.com
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Abstract

Background: Family and marital abnormalities are among the risk factors of psychological trauma in family members and threaten the family system, which is the basis of any healthy society. The aim of the present study was to compare the effects of cognitive-behavioral couple therapy (CBCT) and acceptance and commitment therapy (ACT) on intimacy and marital adjustment among couples applying for divorce.

Methods: This is a quasi-experimental study based on a pretest-posttest design with a control group. The study population consisted of all married people applying for divorce in Bushehr city, (Iran) in 2021, 45 of whom were selected as the sample through convenience sampling and randomly and equally assigned to three groups (n= 15 per group). The first and second experimental groups received CBCT and ACT (twelve 90-minute sessions for each), respectively. The research instruments included Walker and Thompson's Intimacy Scale and Revised Dyadic Adjustment Scale. The data were statistically analyzed using univariate and multivariate analysis of covariance in SPSS-26.

Results: The results showed a significant difference between the experimental groups and the control group in the post-test scores of intimacy and marital adjustment ($P<0.001$). There was a significant difference between CBCT and ACT in improving marital adjustment ($P=0.012$), whereas these two interventions did not exhibit such a difference in improving intimacy.

Conclusion: The study findings suggested that both CBCT and ACT can be used for improving the intimacy between the couples applying for divorce. However, CBCT is more recommended for improving the marital adjustment of such couples because it exhibited more effectiveness than ACT in this regard.

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Keywords: Cognitive behavioral therapy, Acceptance and commitment therapy, Intimacy, Adaptation, Family conflict

Introduction

Researchers have traditionally categorized divorce as a major life event, something similar to birth, death, job loss, promotion, relocation, and marriage.[1] Accordingly, individuals are expected to face a lot of psychological

pressures as they approach a deadlock in their married lives and decide to put an end to their marriage and even for years after their divorce.[2] When an emotional relationship ends or when individuals fail to achieve their goals (e.g., a long-lasting and happy marriage) due to an unpleasant event (e.g., a divorce), they may feel a great sense of loneliness and tend to develop irrational beliefs.[3] In confrontation with rational beliefs, these irrational beliefs mainly cause complications such as a sense of unhealthiness, behavioral consequences, and an unnecessary long-term emotional crisis.[4] Studies have shown that low intimacy and poor marital adjustment are among the major factors causing marital failure.[5, 6]

It is believed that human beings basically need to establish intimate relationships because intimacy is considered a primary psychological need. Marital intimacy is defined as the closeness of spouses, sharing of values and ideas, engaging in common activities, having sexual relationships, getting to know each other, and behaving emotionally such as cuddling.[5] Marital intimacy is one of the characteristics of relationships between couples, the relationships that are defined by the actual self-disclosure and mutual understanding based on an equal partnership. In fact, intimacy is the degree of closeness and support each spouse feels and expresses. A person who experiences a higher level of intimacy can present himself/herself more desirably in relationships and express his/her needs more effectively to their partner or spouse.[7] Studies indicate that today's couples experience pervasive and severe problems in establishing and maintaining intimate relationships with each other, whereas intimacy between spouses is one of the main keys to a successful and long-lasting marriage and its absence can cause marital failure. Moreover, intimate relationships between couples strengthen their marital life, meet their emotional needs, and provide a platform for their development.[8]

It has also been shown that marital adjustment is another important factor that can affect the strength and continuity of a satisfactory marital life. Family and marital abnormalities are among the risk factors for psychological trauma in family members and threaten the family system, which is the basis of any healthy society.[9] The marital adjustment refers to the process by which married couples attain mutual gratification, properly avoid or resolve conflicts, feel satisfied with their marriage, achieve common goals, and find that their marriage meets their expectations while maintaining an appropriate degree of individuality. Marital adjustment can bring many positive outcomes for couples, whereas low marital adjustment can negatively affect their health and relationship. Studies have shown that marital adjustment is significantly related to the couples' health in terms of depression, stress, life satisfaction, marital satisfaction, and family functioning.[10] In addition, marital adjustment can be the key to the success of a marriage, and its absence can lead to marital conflicts and tensions. There is a relationship between marital adjustment level and divorce as divorce seems to be the result of reduced marital adjustment. It has been also demonstrated that marital adjustment itself is related to various individual, family, and social factors. Today's couples experience pervasive and severe problems in establishing and maintaining intimate relationships with each other, and poor marital adjustment is the main reason why couples demand psychotherapy, counseling, and social aid services.[11]

CBCT is one of the effective interventions for addressing the emotional, cognitive, and behavioral problems of couples.[12] According to CBCT, it is believed that the thoughts and actions of couples should be corrected by influencing their conscious thoughts, and any change in disturbing relationships of couples can be realized through the ways they change and evaluate their relationships.[13] Having roots in the context of traditional psychotherapy situations, cognitive-behavioral therapy is a type of therapy demonstrating the growing interest of therapists in correcting cognition as a factor affecting emotions and behaviors.[14] Cognitive-behavioral therapy aims to correct irrational and dysfunctional beliefs, misinterpretations, and cognitive errors and increase the sense of control over life, facilitate constructive self-talk, and improve coping skills. In addition to rebuilding the couple's thoughts and cognition, this therapy employs a variety of behavioral techniques and interventions to strengthen coping skills and correct harmful behaviors and habits. The four axes of CBCT are cognitive changes, behavioral skills, communication skills, and problem-solving skills.[15] In CBCT, behavioral and cognitive components as well as other effective components of interaction between spouses are considered interconnected in a way that any change in a component makes changes in another one. The objective of this therapy is to improve the skills of applying and assigning tasks in other challenges and changing the couple's cognitive and behavioral patterns. Studies have shown that this therapy can effectively and significantly increase marital intimacy between spouses.[12, 16]

ACT is another relatively new treatment modality whose effectiveness in improving a wide range of problems has been reported in different societies. ACT is a newly developed model with key therapeutic processes that are completely different from those of conventional cognitive-behavioral therapy. As a third-generation behavioral therapy, ACT emerged following the second wave of these therapies such as cognitive-behavioral therapy. ACT is related to a research project called the Communication System Theory. This approach accepts changing thoughts and feelings instead of changes in their content or

frequency.[17] As an experimental treatment, ACT is effective in improving a range of disorders, including mood disorders.[18] The two main objectives of this therapy are as follows: 1- encouraging the acceptance of problematic thoughts and emotions that cannot be controlled and 2- taking steps towards leading a lifestyle based on values of personal choice. This therapy includes exposure-based exercises, linguistic metaphors, and methods such as mental care. ACT helps the clients to take greater control over their emotions by using the techniques and strategies of reducing the credibility of thoughts, cognitive defusion, and avoidance of annoying thoughts.[19] The main objective of ACT is to achieve psychological flexibility, i.e., the ability to make practical and more appropriate choices between different options, rather than just doing or forcing someone to do something to avoid disturbing thoughts, emotions, memories, or desires.[20] Therefore, ACT, because of its underlying mechanisms such as acceptance, awareness-raising, desensitization, living the moment, observation without judgment, confrontation, and emotional freedom, can increase effectiveness while reducing psychological symptoms, when it is combined with traditional cognitive behavioral therapy techniques.[21] Based on the mentioned points, the present study aimed to compare the role of CBCT and ACT on intimacy and marital adjustment among couples applying for divorce.

Methods

This is a quasi-experimental study based on a pretest-posttest design with a control group. The study population consisted of all married people applying for divorce in Bushehr city, (Iran) in 2021, 45 of whom were selected as the sample through convenience sampling and randomly and equally assigned to three groups of 15. The specified sample size was selected based on G-Power (α=0.05; test power=0.90; effect size=1.63). In this study, a simple random coin-throwing method was used for allocating the participants to the control and experimental groups. The couples applying for divorce were identified by visiting specialized psychology and counseling clinics in Bushehr, Iran. After identifying the required number of couples, the author interviewed the participants to brief them on the research objectives, procedures and ethical considerations, answer their possible questions, and obtain their informed consent. Moreover, the participants completed the measurement tools and a screening tool as the pre-test during the initial interview. Those who obtained a high score (in terms of psychological function) were eliminated and replaced with new participants who obtained a low score on the measurement tools. The inclusion criteria were couples seeking a divorce, no mental illness (based on participants' self-reports), at least middle school education, and lack of participation in other educational and medical programs. The exclusion criteria were unwillingness to continue the treatment process and more than two absences from the treatment sessions. Then, the participants were randomly assigned to one of the CBCT, ACT, or control groups. The participants in the CBCT and ACT groups attended the intervention sessions according to the relevant instructions, whereas those in the control group received no intervention. A summary of CBCT (twelve 90-minute sessions) and ACT (twelve 90-minute sessions) sessions is presented in Tables 1 and 2. These sessions were performed once a week. At the end of the interventions, participants completed the measurement tools once again as the post-test. As to ethical considerations, the researchers received

Table 1: A summary of cognitive behavioral couple therapy (CBCT) intervention[12]

Session	Description
1	Evaluating various symptoms and problems of participants (such as economic and interpersonal problems)
2	Evaluating participants and planning for the intervention, filing the cognitive records of participants to list their symptoms and problems
3	Introducing the features of CBCT and correcting the participants' expectations
4	Training and exercising behavioral techniques: audacity, behavioral experiments, behavioral training; homework assignment (exercising the behavioral experiments)
5	Training and exercising behavioral techniques: active listening, sender-recipient skills; homework assignment (correction of communication skills)
6	Training and exercising behavioral techniques: determining specific negative interactions, practicing effective communication; homework assignment (practicing effective communication skills)
7	Training and exercising cognitive techniques: downward arrow, recognizing spontaneous thoughts and emotions; homework assignment (daily recording of dysfunctional thoughts)
8	Training and exercising cognitive techniques: recognizing schemas and cognitive processes; homework assignment (discovery of the most important schemas of a relationship)
9	Training and exercising cognitive techniques: explaining the spouse's behavior, recognizing cognitive errors; homework assignment (correction of cognitive errors)
10	Training and exercising cognitive techniques: attribution patterns, explaining unrealistic expectations; homework assignment (practicing "tell me what you like")
11	Problem-solving skills: evaluating and practicing problem-solving, activity planning; homework assignment (practicing activity planning)
12	Conflict resolution skills: identifying and practicing conflict resolution skills; homework assignment (resolving a specific conflict)

Table 2: A summary of Acceptance and Commitment Therapy (ACT) intervention[22]

Session	Strategy	Interventions
Session 1: Treatment evaluation and orientation	Familiarity with couples, introducing ACT	Introducing the focus of exercises
Session 2: Individual evaluations	Individual interview: assessment of marital adjustment and forgiveness	Couple planning: integration of individual and couple evaluations
Session 3: Cost-effectiveness evaluation of ineffective relationships	Cost-effectiveness evaluation of conflicts and avoidance, development of creative frustration	The use of the Chinese finger trap, practicing how to struggle and deal with the spouse
Session 4: Mindfulness and acceptance	Introduction of mindfulness and acceptance	Practicing how to accept thoughts and emotions
Session 5: Cognitive fusion	Explaining the negative relationship of thoughts	Mindbus technique, writing down the thoughts on training sheets
Session 6: Observation of thoughts	Developing the observer's point of view and comparing one's reactions with those of their spouse	Writing down the thoughts on training sheets, practicing how to accept reactions in a relationship
Session 7: Choosing the direction of values	Encouraging and helping the participants to identify and clarify the values of their lives and relationships	Practicing "what do I currently need in my life or relationships need?"
Session 8: Identification of barriers to the value of life through self-acceptance and self-observation	Reviewing the value worksheet, discussing barriers to life values, and helping clients cope with rather than overcome them	Committed action worksheet, review of Mindbus technique
Session 9: Encouraging flexible patterns of behavior in relationships	Expressing the desires	Committed action worksheet
Session 10: Self as a context in this relationship	The nature of choice and the ability to respond, the experience of couples as being the context of the relationship	Committed action worksheet, chessboard metaphor
Session 11: Acceptance and committed action	Review of an emotional inclination in the context of a committed action	Committed action worksheet
Session 12: Termination	Reviewing the relationship values and committed action, preparations for committed actions in the future, and termination of therapy	Concentration exercises for home practice

written consent from the participants for participation in the research. Also, at the end of the study, to observe ethical considerations, we arranged a course of CBCT and ACT for the control group.

Research Tools

Demographic Survey Questions: A researcher-made demographic survey questionnaire with closed items was used to collect demographic characteristics of the participants. The questions of this questionnaire were prepared to collect data related to age and duration of the marriage.

Walker and Thompson's Intimacy Scale: Developed by Walker and Thompson in 1983, this scale consists of 17 items scored based on a 7-point Likert scale (1: never, 2: rarely, 3: sometimes, 4: often, 5: mostly, 6: almost always, 7: always). The total score on this scale ranges between 17 and 119, and higher scores indicate a higher level of intimacy between spouses. The researcher reported an alpha Cronbach coefficient of 0.95 for the Persian version of the scale. The content validity ratio (CVR) and content validity index (CVI) of the scale was reported to be 0.91 and 80, respectively.[22] To determine the face validity of the scale, we sent the scale to ten experts and the 17-item form was approved.[23] In the present study, Cronbach's alpha coefficient was 0.87 for the scale.

Revised Dyadic Adjustment Scale (RDAS): Developed by Busby in 1995, this scale consists of 14 items in three subscales (consensus, satisfaction, and cohesion). The items are scored based on a 6-point Likert scale (from 0: always disagree to 5: always agree). The total score on this scale ranges between 0 and 70, and higher scores represent higher marital adjustment. The researcher reported the reliability of the Persian version of the scale equal to 0.92 based on Cronbach's alpha coefficient.[24] The CVR and CVI were reported to be 0.96 and 0.92, respectively. The face validity of this scale was confirmed by nine experts.[24] In the present study, Cronbach's alpha coefficient was 0.89 for the scale.

Data Analysis

The data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (univariate and multivariate analysis of covariance) in SPSS-26. Data distribution was examined and the Kolmogorov-Smirnov test and Levene's test were used to see whether data are parametric or non-parametric. The Bonferroni post-hoc test was utilized to investigate the difference between the mean of intimacy and adjustment between the groups.

Results

Based on the results of demographic characteristics, the mean and standard deviation (SD) of age of the

participants in CBCT, ACT and control groups were 34.07±5.09, 31.46±4.56, and 32.49±6.31, respectively. In addition, the duration of marriage of the participants, in the CBCT, ACT and control groups was 8.40±4.82, 5.85±3.63, and 7.53±5.86, respectively.

As shown in Table 3, the pre-test and post-test mean scores of marital intimacy in the CBCT group were 69.13±6.1, and 78.87±6.25, respectively, and those of marital adjustment in this group were 26.53±3.98, and 38.27±5.04, respectively. In the ACT group, the pre-test and post-test mean scores of marital intimacy were 68.07±7.28 and 78.27±7.27, and the pre-test and post-test mean scores of marital adjustment were 24.60±3.86 and 31.33±4.22, respectively. The results also showed that the pre-test and post-test mean scores of marital intimacy were 67.33±7.29 and 68.13±7.94 and those of marital adjustment were 25.27±4.31 and 26±4.37, respectively, in the control group.

Results of the Kolmogorov-Smirnov test indicated a normal distribution of data in the pre-test and post-test for intimacy and adjustment (P>0.05); the data were normally distributed when conducting the analysis of covariance. The non-significant results of Levene's test indicated the homogeneity of variances (P>0.05). The multivariate analysis of variance (MANCOVA) showed that there was a significant difference between the three groups at least in one of the dependent variables (P<0.001). The results indicated that there was a significant difference between the CBCT group and the control group and between the ACT group and the control group in terms of marital intimacy (P<0.001), whereas there was no significant difference between the CBCT and ACT groups in this regard. Hence, it can be concluded that both CBCT and ACT were almost equally effective in improving marital intimacy in couples applying for divorce. Based on the results, there was a significant difference between the CBCT and ACT groups and the control group in terms of marital adjustment (P<0.001). There was also a significant difference between CBCT and ACT groups in terms of marital adjustment, so that the effectiveness of cognitive-behavioral couple therapy was higher (Table 4).

Discussion

The present study aimed to compare the effects of CBCT and ACT on intimacy and marital adjustment among the couples applying for divorce in in Bushehr city (Iran). The study findings indicated that CBCT was effective in improving the marital intimacy of the couples, which is consistent with the results of some previous studies.[25, 26] Since intimacy refers to the interaction between spouses, the lack or low level of intimacy is indicative of chaotic marital relationships. It is obvious that one of the ways to improve marital relationships is to increase intimacy between spouses. CBCT increases the couples' awareness of their irrational thoughts and beliefs as well as the positive dimensions of their behaviors. The training sessions and homework of CBCT help the couples correct their misconceptions and wrong attributions. Results of previous studies indicate that the correction of beliefs, unrealistic expectations, and misconceptions of spouses about each other will reduce their frustration, increase their understanding of the positive aspects of each other's behavior, and ultimately improve their marital intimacy.[27] Based on CBCT, some mental errors can lead to misinterpretation of reality, manifesting as inappropriate behaviors of spouses. The depth of intimacy in a relationship depends on the two parties' ability to communicate their thoughts, emotions, needs, and demands clearly, accurately, and effectively.

Table 3: Mean and standard deviation (SD*) of research variables in the experimental and control groups

Variables	Phases	CBCT*	ACT*	Control	P* (between groups)
		Mean±SD	Mean±SD	Mean±SD	
Intimacy	Pre-test	69.13±6.10	68.07±7.28	67.33±7.92	0.619
	Post-test	78.87±6.25	78.27±7.27	68.13±7.94	0.001
P (within groups)		0.001	0.001	0.664	-
Adjustment	Pre-test	26.53±3.98	24.60±3.86	25.27±4.31	0.508
	Post-test	38.27±5.04	31.33±4.22	26.00±4.37	0.001
P (within groups)		0.001	0.001	0.607	-

*CBCT: Cognitive-behavioral couple therapy; ACT: Acceptance and commitment therapy; SD: Standard deviation; P: Significant at 0.01 level

Table 4: Bonferroni post-hoc test for paired comparison of the variables in the post-test phase

Variables	Groups	Mean difference	SE*	P*
Intimacy	CBCT*–Control	8.39	0.88	0.001
	ACT*–Control	9.15	0.89	0.001
	CBCT–ACT	0.76	0.90	0.999
Adjustment	CBCT–Control	11.75	0.50	0.001
	ACT–Control	6.89	0.50	0.001
	CBCT–ACT	4.85	0.51	0.012

*CBCT: Cognitive-behavioral couple therapy; ACT: Acceptance and commitment therapy; SE: Standard error; P: Significant at 0.01 level

CBCT can also improve the verbal and nonverbal communication skills of the couples, which can increase their self-esteem, reduce their pessimism, and improve their intimacy level and, ultimately, help them identify each other's psychological needs. The cognitive skills taught to clients in CBCT examine and correct intimacy expectations and beliefs. People's beliefs about close relationships influence the quality of their marital relationships.[28] Accordingly, during CBCT sessions, couples can identify their false and inappropriate beliefs and attributions and then try to correct them in order to recover their intimacy.

The results also showed that ACT was effective in improving the marital intimacy of couples, which is consistent with the findings of some previous studies.[29, 30] Intimacy is an interactive process that involves recognizing, understanding, accepting, and empathizing with others. The objective of ACT for couples is to help them express their thoughts and emotions naturally, resolve their conflicts, establish new and positive relationships to expand intimacy, and, finally, reduce marital burnout over time. Couples may experience conflicts and maladjustment and constantly try to change each other during their lives; they may avoid releasing interpersonal differences off their minds and adopt interpersonal control and hostility practices in their relationship.[6] ACT can improve marital intimacy of the couples through acceptance, non-empirical avoidance, lack of using controlling methods, mindfulness improvement, determination of values and correction of expectations, modification of judgments, and thinking. This gradual improvement is quite noticeable to couples and naturally encourages them to continue the therapy. This approach is especially suitable for the couples who are experiencing weakened emotional ties and poor intimacy. On the other hand, people's perception of intimate relationships is influenced by their childhood emotional exchanges with those around them. ACT also raises the couples' awareness of intimacy schemes and how to correct them in order to improve their relationship and intimacy during the therapy.

The study results demonstrated that there was no significant difference between CBCT and ACT in improving the marital intimacy of the couples. Consistent with this study, previous studies showed that there was no significant difference between these two interventions in terms of improving marital intimacy.[31] However, the researcher reported that CBCT was more effective than ACT in increasing the sexual intimacy of couples.[32] This discrepancy can be attributed to different constructs measured in these studies. Since both CBCT and ACT have roots in traditional behavioral therapy and share many techniques and also given that marital intimacy is a purely cognitive issue, these three interventions are naturally expected to be effective almost the same. Nevertheless, more studies are needed to better compare the therapeutic outcomes of these interventions.

The results demonstrated that CBCT was effective in improving the marital adjustment of couples, which is consistent with the findings of some previous studies.[33, 34] Marital adjustment is a situation in which a couple often feels happy and satisfied with each other. Mutual interest, caring for each other, accepting and understanding each other, and satisfying mutual needs are the main factors increasing the marital adjustment of the couples. To achieve peace and adjustment, couples need to pay attention to each other's cognitive-behavioral abilities, attitudes, and good faith and also have positive attitudes towards each other.[33] CBCT tries to reduce conflicts between the couples by using problem-solving, decision-making, and accountability training and also by increasing the couples' awareness of themselves and their spouse.

CBCT improves the quality of relationships and affection by encouraging the positive exchange of behavior, direct expression of love, and exposure to positive emotions of couples and also by helping the couples understand their own role in marital conflicts. Therefore, when spouses can express their love and affection for each other in a timely and adequate manner and show mutual respect, they can reduce pessimism towards each other and thus increase their marital adjustment.[13] In this regard, the results of previous studies showed that communication skills play a crucial role in the marital adjustment of the couples.[35] Additionally, unresolved problems and conflicts can often cause negative confrontation in marital relationships, increase negative emotions and attitudes of spouses towards each other, and ultimately, disrupt their marital adjustment. That is why problem-solving and conflict resolution skills can reduce the negative behavioral, emotional, and attitudinal consequences of incorrect conflict management, reduce conflicts, and increase marital adjustment of the couples.

The results demonstrated that ACT was effective in improving the marital adjustment of couples, which is consistent with the findings of some previous studies.[36, 37] According to ACT, thoughts are believed to be the product of a natural mind; when one is preoccupied with the content of his/her thoughts, these thoughts turn into beliefs. ACT takes advantage of cognitive defusion interventions to help the clients not surrender themselves to their own thoughts and mental rules inflexibly and, rather, find ways to interact more effectively with the world they directly experience. Cognitive defusion interventions in ACT involve exercises that break the literal meaning of internal events and aim to teach the clients to view though only as thoughts, emotions only as emotions,

memories only as memories, and physical senses only as physical senses. None of these experienced internal events are inherently harmful to health, but they become problematic when they are regarded as harmful, unhealthy, and bad experiences that are what they claim and, consequently, should be controlled and eliminated. ACT techniques largely emphasize the reduction of cognitive fusion. When cognitive fusion reduces, cognitive defusion occurs, i.e., one has detached from the content of his/her thoughts and is now able to see a thought only as a thought (acceptance), not a reality; therefore, he/she does not act based on that though (defusion). Defusion exercises help the clients interact with their body self-concept in a different way, which increases their behavioral treasury. As a result, clients will experience something new when they act based on their personal values rather than their thoughts.[36]

The study findings revealed a significant difference between CBCT and ACT in improving marital adjustment, as CBCT was more effective in this regard. A reason for the superiority of CBCT is its focus on cognitive processes, such as cognitive reconstruction, identification of cognitive distortions, and other cognitive techniques, as well as integration of behavioral techniques, such as effective communication. Therefore, CBCT can further improve the marital adjustment of the couples because it is simultaneously targeted at both cognitive and behavioral dimensions.

Similar to any other research, this study had some limitations. The performance of two different interventions by a therapist at short intervals may cause interference in some elements. Moreover, despite observing all health protocols (e.g., disinfection of all surfaces), the excessive concern of some participants about the COVID-19 pandemic could negatively affect the quality of the information provided by them. Another research limitation was the impossibility of using a larger sample because we had to observe physical distancing. Future studies are recommended to investigate men and women separately to determine the effects of gender differences on the results of different treatment models and different variables such as intimacy.

Conclusion

The study findings suggested that CBCT and ACT were equally effective in improving the marital intimacy of couples. However, CBCT is more recommended for improving marital adjustment of such couples because it exhibited more effectiveness than ACT both in the post-test and over time.

Ethical Approval

The study was approved by the Research Ethics Committees of Bushehr province university of medical sciences (code: IR.BPUMS.REC.1400.011).

Conflicts of Interest: None declared.

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