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Original Article

The Effectiveness of Resilience-Based Intervention on Post-traumatic Growth, Resilience, Coping Skills, and Perceived Stress in Women with Addicted Spouses

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Abstract

Background: Substance abuse, as a major global issue, not only affects individuals but also impacts family members, particularly women. Meanwhile, post-traumatic growth and resilience are important factors in the recovery process for these women. Therefore, the aim of this study was to investigate the effectiveness of a resilience-based intervention in facilitating post-traumatic growth among women with addicted spouses.

Methods: A randomized clinical trial was conducted involving women with addicted partners ($n=30$) in Qom during the years 2021 and 2022. Participants were randomly allocated to the two groups of intervention and control. A demographic information form, post-traumatic growth questionnaire, resilience scale, perceived stress scale, and the Connor-Davidson coping skills questionnaire, were used to collect data at pre-test, post-test, and follow-up (three months later). Data analysis was conducted using SPSS software (version 22.0), with a significance level of $P<0.05$.

Findings: The findings demonstrated a significant increase in scores of resilience ($\eta^2=0.015$), post-traumatic growth ($\eta^2=0.185$), emotion-focused coping skills ($\eta^2=0.253$), and problem-focused coping skills ($\eta^2=0.131$) in the intervention group between pre-test, post-test, and follow-up stages ($P<0.001$). However, the intervention did not influence perceived stress ($\eta^2=0.017$) ($P=0.473$). No significant changes were observed in these variables in the control group.

Conclusion: The findings showed that the resilience intervention resulted in enhanced post-traumatic growth, coping abilities, and resilience in women with addicted spouses. Implementing this intervention in mental health centers and addiction recovery programs not only enhances the mental well-being of these women but also contributes to the psychological well-being of their families.

Keywords: Coping skills, Stress, Post-traumatic growth, Resilience, Resilience intervention

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Introduction

Over half of the global population undergoes at least one possibly traumatic incident in their lifetime.[1] Confronting stressful events can lead to symptoms of post-traumatic stress, anxiety, depression, anger, physical symptoms, and negative cognitive distortions. However, such negative outcomes are not the sole responses to stressful situations. Over the past decades, research has shown that negative changes resulting from stressful experiences can be accompanied by positive changes as well.[2,3] This idea has also been articulated by influential 20th-century figures in the medical and scientific fields, such as Frankl, Kaplan, and Yalom.[4]

Post-traumatic growth is not merely a return to the previous level of functioning. Instead, individuals surpass their adaptive level of functioning during the growth process.[5] Therefore, to achieve post-traumatic growth, individuals first need to demonstrate resilience and return to their healthy level of functioning. Tedeschi and Calhoun have also supported this assumption[6]. Growth can occur in five domains: personal strength, a deeper appreciation of life, closer relationships, new possibilities, and enhanced spiritual understanding.[7]

The occurrence of both positive and negative changes following stressful situations has led researchers to investigate the link between stressors and post-traumatic growth, as well as to examine intervention strategies to facilitate this growth. Despite the scarcity of studies on growth facilitation interventions in the research literature, and the recent surge of interest in this area[8], it is noteworthy

that three main methods of interventions related to post-traumatic growth can be reported as: (*a*) written or verbal expression, (*b*) cognitive-behavioral therapies for post-traumatic stress disorder, depression, mourning, and stress, and (*c*) new psychological interventions designed to facilitate growth directly. The outcomes of numerous investigations have been encouraging and varied.[9,10]

One of the new psychological interventions designed to facilitate post-traumatic growth is resilience-based life change intervention. This intervention aims to enhance the personal and social resources of individuals during stressful conditions, to promote resilience and facilitate post-traumatic growth.[11] As a mitigating element, resilience permits individuals to revert to their prior state following exposure to challenges during transformations and subsequently adjust to alterations.[12] From this perspective, resilience is positively associated with growth.[13] However, it should be noted that in addition to resilience, other personal variables, such as coping skills, also play a role in facilitating effective growth. Specifically, the findings of several studies indicate that post-traumatic growth correlates positively with religious, adaptive active, positive reappraisal, and problem-focused coping strategies.[14] Dolbier et al investigated the impact of a psychological resilience program on post-traumatic growth in students who faced stressful events in the United States. The findings demonstrated that resilience training can enhance growth in these students.[11] Based on our investigations, this study has not been conducted in Iran.

Addiction is one of the significant social issues and psychological disorders that can create stressful conditions not only for the individual but also for the family and society. By destabilizing family foundations and creating new problems, addiction puts the mental health of family members, especially women as spouses, at risk. Research indicates a higher level of psychological problems among these women.[15] Given the important role of women in the health of a family and the psychological challenges they face when living with addicted individuals, addressing their individual issues and paying attention to their mental well-being is of paramount importance. Therefore, the aim of this research was to expand knowledge regarding the effectiveness of the life change intervention through resilience in facilitating growth and measuring the changes in resilience and coping skills. If the effectiveness of the mentioned intervention is confirmed, it will mark a new step toward the development of therapeutic interventions and the facilitation of post-traumatic growth.

Methods

Participants and procedure

The current research was conducted as a randomized clinical trial with a control group, with a pre-test/post-test approach, on the statistical population of women who had addicted spouses in the city of Qom between 2021 and 2022. The study was carried out in welfare centers in the city of Qom. Convenience sampling was used for this study, with an alpha level of 0.05, study power of 0.80, medium effect size of 0.8, and equal sample size in intervention and control groups. Each group consisted of 21 participants. Due to incomplete participation in intervention sessions or non-completion of therapeutic assignments, the final analysis included 15 individuals in each group. Calculations were performed using G*Power software version 3.1. After obtaining ethical approval from the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences and with the cooperation of the Welfare Organization of Qom province, a reference letter was acquired to conduct the research in addiction intervention centers and among women-headed households affiliated with the Welfare Organization. In the beginning, 202 eligible women with addicted spouses were evaluated for participation in the study. The inclusion criteria were as follows: women aged 20 to 50 years, married with addicted spouses and married for at least one year, at least middle school education, high perceived stress (indicated by a score above the mean of 26 on the perceived stress questionnaire), no drug use (verified through self-report and history), no signs of psychiatric disorders or suicidal thoughts (assessed through initial interviews), and not receiving concurrent psychotherapy (verified through self-report).

The exclusion criteria were incomplete participation in therapeutic sessions (failing to attend a minimum of one therapy session) and failing to fulfill therapeutic tasks (neglecting at least one therapy assignment). Once informed consent was obtained from the selected individuals, according to the inclusion criteria, the participants were divided into two groups (21 participants in the intervention group and 21 in the control group). An independent researcher gave a unique code to each participant and wrote the code on a sheet of paper. The researcher then put the codes in a bag and mixed them. Then, she took out the codes one by one and wrote down their numbers. During the study, 12 participants either withdrew or became inaccessible for follow-up. Therefore, the final analysis was conducted on 30 participants ($n = 15$ for each group), as depicted in the CONSORT diagram in Figure 1.

The intervention group participated in four weekly sessions of psychoeducational intervention for change through resilience (Table 1) whereas the control group received no intervention at all. Nevertheless, in adherence to ethical standards, those in the control group were also given the previously mentioned intervention after the study concluded. The data were collected in three phases: pre-test, post-test, and follow-up (3 months). In addition, this study was conducted in a double-masked manner. This study was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation

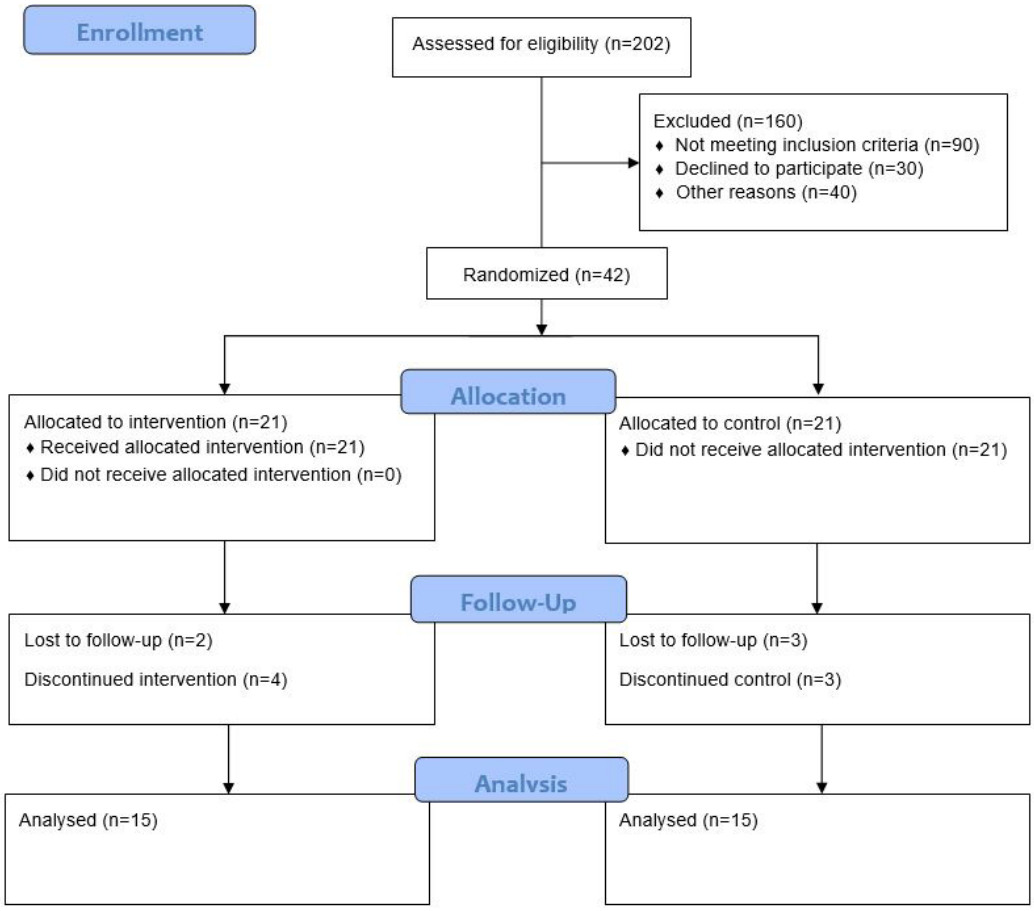

Figure 1. The CONSORT flow diagram of the selection process

Table 1. The intervention guide for life change through resilience training group

Session	Definition
Session one	Session one focuses on the theme of transforming stress into flexibility. In this session, a resilience model depicting four common stress responses, including "surrender," "endurance," "return to previous functioning," and "growth," is taught to the participants. The two broad concepts of problem-focused coping skills and emotion-focused coping skills are discussed within the framework of the presented model.
Session two	Session two focuses on the theme of accountability. In this session, based on the accountability model, teachings are provided about the consequences and how to take or not take responsibility for one's behaviors. During this session, participants learn to take responsibility for their behaviors through tasks and activities.
Session three	Session three focuses on empowerment interpretations that help individuals utilize a five-stage thinking model, including activating event, belief about activating event, consequence or how one feels and behaves in response to beliefs, disputing the disempowering beliefs and creating empowering interpretations, and energy to handle the activating event. Participants learn to transform their disempowering interpretations into empowering ones.
Session four	Session four, titled "Creating Meaningful Connections," focuses on increasing awareness of the relationship between establishing meaningful connections with friends and loved ones and its corresponding impact on thinking, behavior, and well-being. This session also addresses how to facilitate personal leadership and revisit the concepts of responsibility and empowerment interpretations.

Sciences (code: IR.USWR.1400.202) and was registered in the Iranian Registry of Clinical Trials (identifier: IRCT20220227054135N1). Written informed consent was acquired from the participants. The primary outcome studied in this research was post-traumatic growth. The secondary outcomes included perceived stress, resilience, and coping skills.

Data collection tools

Perceived Stress Scale (PSS-14): This questionnaire, designed by Cohen et al, assesses perceived stress through 14 items. It measures thoughts and feelings about stressful events, control, coping, and dealing with psychological pressure using a 5-point Likert scale. The scores range from 0 to 56, with higher scores indicating higher perceived stress. In a study on Iranian state university students, Samadi[16] reported the reliability of the PSS-14 subscales as follows: thoughts and feelings about stressful events (0.76), control (0.71), and coping (0.67).

Connor-Davidson Resilience Scale (CD-RISC):

Developed by Connor and Davidson, this scale includes 25 items with five response options. It assesses five factors: personal competence, trust in the individual's instincts to tolerate negative emotions, secure relationships, control, and spiritual influences. In Mohammadi's research, the Cronbach's alpha reliability coefficient for normalizing this questionnaire in Iran was reported as 0.89, with item-total correlations for each item, excluding item 3, ranging from 0.41 to 0.64.[17]

Coping Skills Questionnaire: This questionnaire, designed based on the Lazarus-Folkman theory (1984), consists of 66 items, a problem-focused and an emotion-focused coping scale, and eight subscales. The problem-focused scale includes four subscales: seeking social support, responsibility acceptance, systematic problem-solving, and positive reappraisal. The emotion-focused scale also includes four subscales, including confrontation, avoidance, self-blame, and escape-avoidance. The reliability of this questionnaire, translated, validated, and assessed in Iran by Vahedi in 2000, has been reported as 0.8 using Cronbach's alpha. Furthermore, the outcomes of the principal component analysis and varimax rotation indicated that this scale comprises 10 factors, each with a factor load exceeding 0.30.[18]

Post-traumatic Growth Inventory (PTGI): This questionnaire, created by Tedeschi and Calhoun in 1996, includes 21 items categorized into five subscales (new possibilities, relating to others, personal strength, spiritual change, and appreciation of life). It uses a 6-point Likert scale. In the study by Tedeschi and Calhoun, the overall alpha coefficient for the questionnaire was 0.90, and the alpha coefficients for individual subscales ranged from 0.67 to 0.85. The psychometric characteristics of this questionnaire were examined on students of the University of Shiraz, revealing a Cronbach's alpha of 0.92 for the total scale. The correlation of the three predictive subscales with the overall score of the growth questionnaire was also positive and significant ($P<0.001$).[19]

Data analysis

This study used descriptive statistics to analyze quantitative variables (mean and standard deviation). Qualitative variables were examined using the chi-square test for independent samples (to compare different groups), paired samples *t* test (to evaluate pre- and post-intervention), Kolmogorov-Smirnov test (to evaluate data distribution normality), Levene's test (to assess homogeneity among groups), and repeated measures ANOVA. Data analysis was done using SPSS software (version 22.0). $P<0.05$ was regarded as statistically significant.

Results

The two groups' demographic characteristics, including education, number of children, and economic status, were analyzed using the chi-square test. Independent samples t-test was used to assess the average age and length of marriage in the two groups. The findings revealed no significant differences between the groups (Table 2).

According to Table 3 and considering the significance values obtained, the main effect of time on the variable "post-traumatic growth" was significant. In other words, the mean of this variable showed significant changes from pre-test to follow-up. Therefore, life transformation intervention through resilience has led to an enhancement of post-trauma growth in women with addicted spouses who participated in the intervention group compared to the control group. The interaction effect of the two factors of time and group on total post-traumatic growth was not significant ($P>0.05$, $P=0.086$).

Considering the obtained significance value for the interaction effect of the two factors of time and group on the total score of resilience ($P<0.05$), the interaction effect of these factors was significant. Therefore, life transformation intervention through resilience led to an enhancement of resilience in women with addicted spouses in the intervention group compared to the control group.

Considering the obtained significance value for the main effect of time and the interaction effect of the two factors of time and group on the perceived stress score ($P>0.05$), the effects were not significant. Therefore, life transformation intervention through resilience did not lead to a reduction in perceived stress in women with addicted spouses in the intervention group.

Considering the obtained significance value for the main effect of time on the variable of "emotion-focused coping strategies," the effect was significant. This means that the mean of this variable has shown significant changes from pre-test to follow-up. Therefore, life transformation intervention through resilience led to an enhancement of emotion-focused coping strategies in women with addicted spouses in the intervention group compared to the control group. Regarding the obtained significance value for the interaction effect of the two factors of time and group on the total score of emotion-focused coping strategies ($P>0.05$, $P=0.416$), the interaction effect of the factors of time and group was not significant.

The obtained significance value for the main effect of time on the "problem-focused coping strategies" variable indicates a statistically significant change from the pre-test to the follow-up. Therefore, the intervention of lifestyle change through resilience training led to an enhancement of problem-focused coping strategies in women whose spouses have addiction in the intervention group compared to the control group. For the interactive effect of the two factors of time and group on the total score of problem-focused coping strategies ($P>0.05$, $P=0.205$), the mutual effect of time and group factors was not significant. Table 4 shows subsequent post hoc tests

Table 2. Characteristics of the participants in the intervention group ($n=15$) and the control group ($n=15$)

	Group		Total (30 individuals)	Comparison of the two groups
	Control group (15 individuals)	Intervention group (15 individuals)		
Education, No. (%)				
Elementary school	5 (25.0)	4 (20.0)	9 (22.5)	$\chi^2=1.129$ Sig.=0.569
Middle school	4 (20.0)	7 (35.0)	11 (27.5)	
Highschool diploma and associate degree	11 (55.0)	9 (45.0)	20 (50.0)	
Number of children, No. (%)				
0	4 (20.0)	2 (10.0)	6 (15.0)	$\chi^2=4.400$ Sig.=0.355
1	1 (5.0)	5 (25.0)	6 (15.0)	
2	8 (40.0)	7 (35.0)	15 (37.5)	
3	6 (30.0)	6 (30.0)	12 (30.0)	
4	1 (5.0)	0 (0.0)	1 (2.5)	
Economic status, No. (%)				
Low	12 (60.0)	13 (65.0)	25 (62.5)	$\chi^2=0.131$ Sig.=0.937
Moderate	6 (30.0)	5 (25.0)	11 (27.5)	
High	2 (10.0)	2 (10.0)	4 (10.0)	
Age, mean (standard deviation)	33.9 (7.412)	36.6 (6.159)	35.25 (6.864)	$t=-1.253$ Sig.=0.218
Duration of marriage, mean (standard deviation)	14.000 (6.343)	15.105 (8.831)	14.568 (7.636)	$t=-0.435$ Sig.=0.666
Post-traumatic growth, mean (standard deviation)	69.3 (17.281)	74.45 (20.140)	71.875 (18.706)	$t=-0.868$ Sig.=0.391
Resilience, mean (standard deviation)	68.05 (11.180)	65.9 (21.206)	66.975 (16.768)	$t=0.401$ Sig.=0.691
Perceived stress, mean (standard deviation)	25.3 (5.966)	25.15 (10.348)	25.225 (8.337)	$t=0.056$ Sig.=956
Emotion-focused coping strategies, mean (standard deviation)	34 (5.894)	38.5 (9.611)	36.25 (8.192)	$t=-1.875$ Sig.=0.082
Problem-focused coping strategies, mean (standard deviation)	38 (7.581)	37.75 (11.088)	37.875 (9.376)	$t=0.083$ Sig.=0.934

Table 3. Means, standard deviations, time effects, interaction effects, and effect sizes of PTG for CBT and the control group at pre- and post-intervention and follow-up

Variable name	Pre-test, mean (standard deviation)	Post-test, mean (standard deviation)	Follow-up, mean (standard deviation)	Time effect			Time × group interaction effect		
				F	Sig.	Eta squared	*F*	Sig.	Eta squared
Post-traumatic growth				8.602	0.001	0.185	2.653	0.086	0.065
Control group (15 individuals)	69.3 (17.281)	62.15 (24.047)	69 (20.115)						
Intervention group (15 individuals)	74.45 (20.14)	63.5 (20.674)	86.2 (8.339)						
Resilience				0.561	0.549	0.015	10.442	0.000	0.216
Control group (15 individuals)	68.05 (11.18)	66.3 (11.544)	55.6 (14.14)						
Intervention group (15 individuals)	65.9 (21.206)	61.25 (16.431)	76.25 (12.379)						
Perceived stress				0.668	0.473	0.017	0.681	0.467	0.018
Control group (15 individuals)	25.3 (5.966)	25.45 (6.039)	25.8 (5.258)						
Intervention group (15 individuals)	25.15 (10.348)	28.05 (6.345)	25.75 (6.584)						
Emotion-focused coping strategies				12.869	0.000	0.253	0.887	0.416	0.023
Control group (15 individuals)	34 (5.894)	34.75 (7.362)	40.75 (9.124)						
Intervention group (15 individuals)	38.5(9.611)	38.8(13.756)	49.55 (13.987)						
Problem-focused coping strategies				5.724	0.005	0.131	1.620	0.205	0.041
Control group (15 individuals)	38 (7.581)	36.5 (7.817)	39.55 (8.179)						
Intervention group (15 individuals)	37.75 (11.088)	34 (11.36)	43.8 (10.928)						

Table 4. Post hoc test to detect differences within groups

	Variables	Mean	Standard deviation	Pearson correlation coefficient		Partial correlation with post-test scores
				Pre-test	Post-test	
Difference between pre-test and post-test scores	Post-traumatic growth	-9.05	26.328	-0.561**	0.715**	1.000**
	Resilience	-3.2	17.26	0.650**	0.447**	1.000**
	Perceived stress	-1.525	7.786	0.701**	-0.310	-1.000**
	Emotion-focused coping strategies	0.525	12.341	-0.478**	0.760**	1.000**
	Problem-focused coping strategies	-2.625	11.376	0.577**	0.615**	1.000**
Difference between pre-test and follow-up scores	Post-traumatic growth	5.725	19.524	-0.581**	0.494**	1.000**
	Resilience	1.05-	25.441	-0.758**	0.759**	1.000**
	Perceived stress	-0.55	10.473	0.828*8	-0.607**	-1.000**
	Emotion-focused coping strategies	8.9	14.297	-0.494**	0.821**	1.000**
	Problem-focused coping strategies	3.8	13.43	-0.686*8	0.716**	1.000**
Difference between post-test and follow-up scores	Post-traumatic growth	14.775	23.232	-0.703**	0.438**	1.000**
	Resilience	2.15	21.654	-0.633**	0.753**	1.000**
	Perceived stress	0.975	6.491	0.575**	-0.493**	-1.000**
	Emotion-focused coping strategies	8.375	10.345	-0.323**	0.542**	1.000**
	Problem-focused coping strategies	6.425	11.607	-0.593**	0.599**	1.000**

*$P<0.05$, **$P<0.01$.

were conducted for further investigation.

Discussion

Facing stressful events, despite their negative consequences, can lead to positive outcomes such as growth. This research sought to determine if teaching resilience via intervention can promote post-traumatic growth in women with addicted partners living in stressful environments. The results obtained indicated a positive answer to this question. Teaching resilience led to the enhancement of growth in this group of women. The current research findings are consistent with those of Dolbier et al.[11] Teaching resilience, emphasizing the empowerment of individuals' interpretations of events, challenges the current cognitive frameworks and pushes individuals towards psychological coping with crises. Encountering stressful events, especially when accompanied by feelings of danger and threat, can challenge the individual's assumptions and fundamental beliefs related to the world.[20] The emotional turmoil arising from this psychological struggle activates intrusive ruminations, which are natural responses to crisis. These ruminations, which tend to fade over time for most individuals, give way to deliberate rumination. Deliberate rumination stems from an individual's effort to comprehend what has occurred and what remains afterward.[21] Empowering individuals to reframe their interpretations of events can assist in initiating deliberate ruminations, ultimately leading to the reconstruction of their core beliefs. The novel meaning generated during cognitive reconstruction helps individuals adapt to new circumstances and integrate their experiences into the narrative of their lives. In this manner, growth can emerge as a result of this psychological endeavor.[4]

The results indicated that resilience training intervention also enhanced problem-focused and emotion-focused coping skills. In one of the intervention sessions, participants specifically focused on learning and practicing emotion-focused and problem-focused coping skills. This approach is supported by various research findings, as enhancing adaptive coping skills can facilitate post-traumatic growth in traumatized individuals.[22,23] Emotion-focused strategies, including self-distraction, avoidance, or escapism, immediately following a crisis can help individuals reduce distress caused by stressful situations.[4,24] By reducing tension, individuals create the necessary conditions for employing problem-focused skills to solve crises. Strategies like obtaining social support assist individuals in coping with their negative feelings by disclosing themselves during stressful events and reframing the positive aspects of these events. Individuals engage in problem-solving by identifying the causes of the problem, examining new beliefs, and identifying strengths in the crisis. Throughout this process, they are more likely to experience growth.[22,25] Hashemi and Haji Alizadeh showed that emotion-focused skills immediately after a crisis help individuals reduce their distress and stress by distancing themselves from the problem. Therefore, although these strategies are effective in the short term, prolonged use of these strategies and avoidance of confrontation prevent the appraisal of the problem, active coping, identification of strengths, and problem-solving and hinder the experience of growth in the long term.[14]

Improvement in resilience is another observed outcome in the current study. Tedeschi and Calhoun

argue that individual characteristics play an essential part in the experience of post-traumatic growth, and resilience is one of them. To facilitate post-traumatic growth, individuals must be optimistic and resilient when facing crises and possess resilience to achieve a new level of adaptability.[26] Following exposure to adversity, resilient individuals return to their previous level during permanent reconfiguration and adjust to the changes. In this way, resilience can facilitate growth.[13] Taghipoor et al indicated that with their higher resilience and greater sense of capability to confront stressful conditions, women with addicted spouses exhibit a positive outlook toward challenges. Therefore, resilience, as an internal protective factor and not a process of permanent reconfiguration, can assist these women in modifying stress and maintaining stability both during and after stressful circumstances.[27]

The main limitations of the present study were the heterogeneity and diversity of variables in intervention recipients, including participants' personality traits, the type of substances used by their spouses, and various socio-cultural variables. Additionally, the use of an alternative intervention instead of a waiting-list control group can provide a better understanding of the true effectiveness of the intervention versus participants' mere interest in engaging in the intervention. This aspect was not addressed in our study. Addressing these limitations in future research will be crucial for a more accurate understanding of the impact of this intervention on different groups.

Conclusion

Assisting women who are under stressful conditions and living with an addicted spouse not only aids in enhancing their mental well-being but also contributes to the improvement of the family's mental health. The intervention of resilience training is a novel approach designed to facilitate post-traumatic growth in traumatized individuals. In addition to its positive and effective impact on growth, this intervention can also enhance the psychological capabilities of the individual, with its focus on teaching coping skills, meaningful connections, and resilience. Moreover, this aspect itself becomes an influential factor for growth. By implementing this intervention in clinical and healthcare centers, we hope to reduce the occurrence of stress-related disorders and improve mental well-being among traumatized individuals.

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Authors' Contribution

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Competing Interests

The authors have no conflicts of interest to declare.

Ethical Approval

This study was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences (code: IR.USWR.1400.202) and registered in the Iranian Registry of Clinical Trials (identifier: IRCT20220227054135N1).

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