

The Effect of the Pennsylvania Resilience Intervention on Hope and Marital Burnout in the Wives of Incarcerated Individuals with Substance Dependence

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ABSTRACT

Psychological problems in women whose spouses are incarcerated can have significant adverse impacts on their lives. This study aimed to examine the effect of the Pennsylvania Resilience Intervention on hope and marital burnout in the wives of incarcerated individuals with substance dependence. The research employed a quasi-experimental method with a pre-test–post-test control group design. The study population consisted of all women whose husbands were incarcerated due to substance dependence and who were supported by the Prisoners' Support Association in Ardakan during the 2023–2024 academic year. In total, 34 individuals were selected through convenience sampling and randomly assigned to two groups of 17 participants each: an experimental group and a control group. The research instruments included the Hope Scale (Snyder, 1991) and the Marital Burnout Questionnaire (Pines, 1996). The experimental group received the Pennsylvania Resilience Program across ten 120-minute sessions, while the control group received no intervention. Data were analyzed using multivariate analysis of covariance (MANCOVA). Statistical computations were conducted using SPSS version 26. The results showed no significant differences between the two groups regarding demographic variables such as age, education, and employment status ($p > .05$). The analysis of covariance revealed that the Pennsylvania Resilience Intervention had a significant effect on hope ($F = 28.149, p < .001$) and marital burnout ($F = 6.418, p < .017$) in the wives of incarcerated individuals with substance dependence. Enhancing resilience is essential for improving life challenges and psychological well-being components. Therefore, the Pennsylvania Resilience Intervention can be considered a promising approach to increasing hope and reducing marital burnout among this population.

Keywords: Resilience, Hope, Burnout, Women, Incarceration, Substance Abuse

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Introduction

Drug-related offenses constitute the majority of incarcerations in Iran (Shomali & Barkhordari, 2023). On the other hand, the families of incarcerated individuals are the primary victims of the imprisonment of a household head (1). Among these, the wives of incarcerated individuals often face multiple challenges (2). The imprisonment of a husband can lead to financial stress, social isolation, and psychological harm (3-5). The recurrent relapse into substance use, coupled with societal stigma and judgment toward having an incarcerated spouse, may intensify the sense of isolation and create barriers to seeking social support for these women (6, 7). These women's issues may lead to marital problems, helplessness and hopelessness, and a sense of loneliness, all of which have numerous negative consequences (3, 4). Therefore, understanding the psychological challenges of incarcerated individuals' spouses is crucial for providing effective support and interventions to improve their psychological well-being and overall quality of life.

Based on the above, a reduced level of hope is one of the prominent challenges facing the wives of incarcerated individuals with substance dependence. Hope can be defined as a positive motivational state that is derived from an interactively derived sense of success based on: (a) agency (goal-directed energy), and (b) pathways (planning to meet goals). It is a cognitive process that supplies the willpower and energy necessary to pursue goals (8, 9). Lower levels of hope are associated with more frequent difficulties and negative emotional experiences (10). Since lack of social support, poverty, and financial difficulties are among the factors that can diminish life hope (11), the wives of incarcerated individuals with substance dependence are at higher risk for reduced hope. Regarding women whose spouses are incarcerated, understanding and supporting their life hope is essential in strengthening their resilience and fostering positive outcomes for themselves and their families.

Marital burnout is another major issue that can pose a serious threat to the wives of incarcerated individuals with substance dependence (2). Marital burnout refers to a state of chronic physical, emotional, and psychological exhaustion experienced by individuals in long-term committed relationships (12). Originally, the concept of burnout was introduced to describe a state of exhaustion manifested as cynicism toward one's profession and self-doubt about one's capabilities (13). However, this phenomenon is no longer confined to specific occupations and is experienced by individuals across various demographics, including public figures and homemakers (14). A harsh lifestyle (e.g., having an incarcerated spouse) can expose individuals to significant stress, resulting in feelings of emptiness, fatigue, and an inability to cope (3, 4). Burnout encompasses emotional, physical, and psychological dimensions and is influenced by various factors (15). Emotional stress (16), uncertainty about the future of the marital relationship, lack of emotional support from the spouse (17), and numerous stressors alongside limited support networks (18) exacerbate the vulnerability of these women to marital burnout.

Resilience is a skill that can function as an effective protective factor in resolving life problems (3, 4). Resilience is considered a healthy coping process through which individuals can more effectively adapt to life challenges despite adversity (19). The Pennsylvania Resilience Training Program is a comprehensive resilience program developed to enhance psychological and emotional well-being among individuals facing various challenges and stressors (4). Rooted in the principles of positive psychology and cognitive-behavioral therapy, the Pennsylvania Resilience Program was designed by Seligman et al. (1999) and has since been disseminated globally. It aims to enhance the necessary skills and strategies for coping with adversity, fostering resilience, and managing life problems (20). The effectiveness of the Pennsylvania Resilience

Training Program has been demonstrated in improving mental health (3-5, 20, 21), reducing stress (22), alleviating depression (23), increasing hope (3-5, 20, 24, 25), and mitigating components of marital burnout (3, 4, 26, 27). However, a gap remains in the literature concerning the limited exploration of resilience interventions among women with incarcerated spouses. This suggests that less emphasis has been placed on evaluating the effectiveness of Pennsylvania Resilience Training in enhancing psychological well-being, life hope, and marital burnout among this population. Therefore, the present study aimed to examine the effect of the Pennsylvania Resilience Intervention on marital burnout and hope in the wives of incarcerated individuals with substance dependence.

Methods and Materials

Study Design and Participants

This study utilized a quasi-experimental design with a pre-test–post-test control group framework. The study population included all women whose husbands were incarcerated due to substance dependence and who were supported by the Prisoners' Support Association in Ardakan during the 2023–2024 academic year. Participants were selected based on specific inclusion criteria.

According to Bazargan et al. (1998), experimental studies require a minimum of 30 participants (28). Accordingly, although the sample size was initially estimated at 30 individuals, a final sample of 34 participants was selected to account for potential dropout and ensure sample adequacy. The participants were randomly assigned to either the experimental or control group, with 17 individuals in each. The sample size was determined by consulting similar studies and statistical experts. Based on the average mental health scores from comparable studies, with a 95% confidence level, 90% power, and accounting for a 20% attrition rate, the minimum estimated sample size was 15 per group. The sample size estimation was conducted using Stata14, with the software output and formula available upon request.

A convenience sampling method was used. Inclusion criteria included: having a husband incarcerated for substance dependence, membership in the Ardakan Prisoners' Support Association, obtaining scores above the mean in depression, anxiety, and stress scales, providing informed consent and willingness to participate, absence of physical or psychological conditions or medication use that would interfere with intervention, and not participating in other simultaneous studies. Exclusion criteria included: absence from more than two sessions, illness, and noncompliance with group rules. By the end of the sessions, one participant was excluded due to excessive absence and one due to withdrawal from the study.

After obtaining permission from the authorities of the Ardakan Prisoners' Support Association, an invitation was extended to families under their care to attend an initial orientation session. Session dates and times were scheduled based on participant availability. Control group members were assured that they would receive the same intervention package after the study. The experimental group participated in the Pennsylvania Resilience Program across ten 120-minute sessions, conducted twice weekly. The control group received no intervention during the study period. A virtual group was created on the Eitaa platform to respond to participants' questions and manage homework assignments. After completing the sessions, both groups completed the research questionnaires again.

Data Collection

Hope Scale: The Hope Scale developed by Snyder et al. (1991) was used to assess hope. Designed for adults, this 12-item scale utilizes 8 items in scoring, with 4 items measuring the agency component and 4 items measuring pathways. The remaining 4 items are fillers. Items are scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate greater hope. Snyder (2000) reported Cronbach's alpha coefficients of .86 for the total scale, .82 for the agency subscale, and .84 for the pathways subscale. In Iran, Golzari (2007) examined the internal consistency of the scale with 660 female students in Tehran, reporting an alpha of .89. The scale also showed moderate positive correlations (.50 to .60) with the Optimism Scale by Scheier and Carver and negative correlations with the Beck Depression Inventory (-.51 and -.42) (29). Zahedbabelan et al. (2011) reported a Cronbach's alpha of .79 (30). In the current study, the reliability of the Snyder Hope Scale was .809 using Cronbach's alpha.

Marital Burnout Scale: Developed by Pines (1996), this 20-item, seven-point scale assesses three components: emotional exhaustion, psychological exhaustion, and physical exhaustion. Pines (1996) reported internal consistency with alpha values between .91 and .93. In Iran, Navidi (2005) reported a Cronbach's alpha of .86 for the scale. In this study, internal consistency was assessed using Cronbach's alpha, yielding values of .81 (physical exhaustion), .87 (emotional exhaustion), .86 (psychological exhaustion), and .84 for the total scale (31). The current study reported a reliability coefficient of .833 for the entire scale.

Intervention

The Pennsylvania Resilience Program sessions were based on a cognitive-behavioral model designed by Gillham et al. (1990), with its effectiveness validated in multiple studies, including Khanjani et al. (2015) and Shomali and Barkhordari (2023) (4, 32).

The intervention protocol consisted of ten structured sessions based on the Pennsylvania Resilience Program, incorporating cognitive-behavioral principles and Ellis's Rational-Emotive Behavior Therapy (REBT). In the first session, participants were introduced to the program, goals were clarified, ground rules were established, and group rapport was built through discussion of the emotional and psychological consequences of having an incarcerated spouse. The second session focused on identifying emotional responses to adverse events and introduced Ellis's ABC model. In the third session, participants practiced applying the REBT model to personal experiences. The fourth session examined attributional styles and their relation to hopelessness, depression, stress, and anxiety, followed by cognitive reframing. In the fifth session, participants learned to challenge catastrophic beliefs using evidence-based disputation techniques and cognitive restructuring. The sixth session taught effective communication and conflict resolution strategies, linking them to personal experiences and cognitive patterns. The seventh session introduced the five-step problem-solving model, applied to participants' real-life challenges. The eighth session focused on empathy skills and the consequences of empathy-deficient behaviors. The ninth session addressed assertiveness training, encouraging participants to reflect on its role in their interpersonal difficulties. The final session covered negotiation skills, reviewed behavioral outcomes of non-negotiation, integrated learning with participants' lived experiences, and concluded with post-testing to evaluate program outcomes. Each session included reviewing homework assignments and reinforcing skill application through experiential exercises.

Data analysis

Data were analyzed using Chi-square tests and multivariate analysis of covariance (MANCOVA) via SPSS version 26. A significance level of .05 was adopted for all analyses.

Findings and Results

A comparison of the demographic characteristics between the two groups is presented in Table 1.

Table 1. Demographic Characteristics Between the Two Groups

Variable	Category	Experimental	%	Control	%	P-Value
Age	Under 30 years	3	20.0	4	23.5	p = .833
	30–40 years	10	66.7	10	58.8	
	40–50 years	2	13.3	3	17.6	
Education	Middle school	2	13.3	4	23.5	p = .739
	High school/Diploma	8	53.3	9	52.9	
	University	5	33.3	4	23.5	
Employment	Homemaker	12	80.0	13	76.5	p = .564
	Employed	3	20.0	4	23.5	

Significance level: $p > .05$

According to the findings in Table 1 and the results of the Chi-square test, there were no significant differences between the experimental and control groups in terms of age, education, or employment status ($p > .05$). Descriptive statistics related to the main research variables across different stages and groups are shown in Table 2.

Table 2. Descriptive Statistics for Research Variables by Stage and Group

Variable	Group	Pre-Test Mean	SD	Post-Test Mean	SD
Hope	Experimental	29.27	1.944	33.40	3.203
	Control	30.06	3.881	29.76	2.948
Marital Burnout	Experimental	95.93	10.327	88.60	9.379
	Control	95.35	7.663	92.06	9.351

According to Table 2, in the post-test stage, participants in the experimental group showed increased mean scores in psychological well-being and hope, along with decreased mean scores in marital burnout. However, the control group exhibited little to no change between the pre-test and post-test stages. The assumption checks revealed that all values for the Shapiro–Wilk test (normality), Levene’s test (homogeneity of error variances), Box’s M test (homogeneity of variance-covariance matrices), and interaction of homogeneity of regression slopes were non-significant ($p > .05$) for hope and marital burnout in both groups. Thus, all assumptions for the multivariate analysis of covariance (MANCOVA) were met.

The results of the MANCOVA based on pre-test covariates are presented in Table 3.

Table 3. Results of Multivariate Analysis of Covariance with Pre-Test

Test/Index	Value	F	df-H	df-E	Sig.	η^2
Pillai's Trace	.710	20.402	2	25	.001	.710
Wilks' Lambda	.290	20.402	2	25	.001	.710
Hotelling's Trace	2.448	20.402	2	25	.001	.710
Roy's Largest Root	2.448	20.402	2	25	.001	.710

As shown in Table 3, after controlling for the pre-test, there was a statistically significant difference between the experimental and control groups in the post-test scores of the dependent variables ($p < .001$).

This indicates that at least one of the dependent variables (hope or marital burnout) differed significantly between the groups. The effect size ($\eta^2 = .710$) indicates that 71% of the observed variance between the two groups can be attributed to the Pennsylvania Resilience Intervention.

To examine differences at the level of individual variables, univariate ANCOVA was conducted within the MANCOVA, and the results are presented in Table 4.

Table 4. Results of Univariate ANCOVA with Pre-Test as Covariate

Variable	Source	SS	df	MS	F	Sig.	η^2
Hope	Group	143.267	1	143.267	28.149	.001	.510
	Error	137.421	27	5.090			
Marital Burnout	Group	103.827	1	103.827	6.418	.017	.192
	Error	436.791	27	16.177			

Table 4 shows that after controlling for pre-test scores and based on the calculated F values, there were significant differences between the adjusted mean scores of psychological well-being, hope, and marital burnout in the post-test phase between the experimental and control groups ($p < .05$). Based on the means presented in Table 3, it can be concluded that the Pennsylvania Resilience Intervention had a significant effect on increasing hope and decreasing marital burnout in the wives of incarcerated individuals with substance dependence in Zahedan. The effect size indicates that 51% of the difference in hope scores and 19.2% of the difference in marital burnout scores can be attributed to the intervention.

Discussion and Conclusion

The present study aimed to examine the effectiveness of the Pennsylvania Resilience Intervention on hope and marital burnout in the wives of incarcerated individuals with substance dependence. The first finding of the study indicated that the Pennsylvania Resilience Intervention had a significant impact on increasing hope among these women. This result aligns with previous studies (24, 25, 33). For example, Dastani et al. (2023) demonstrated that religious cognitive-behavioral therapy was more effective than traditional cognitive-behavioral therapy in enhancing affect and hope in individuals with major depression (24). Emami et al. (2017) also showed that group-based cognitive-behavioral stress management improved resilience and hope in women with breast cancer (25). Overall, these findings support the general effectiveness of cognitive-behavioral interventions in fostering hope. Theoretically, reduced hope in life is particularly common when spouses of incarcerated individuals perceive themselves as lacking the capacity to adapt, engage, and manage life's challenges and stressors effectively (34). Resilience, as a skill, helps individuals cope with difficult life circumstances and pass through stressful conditions more effectively, thereby boosting goal-directed energy and planning capabilities. Consequently, the educational sessions were designed to enhance resilience through cognitive and behavioral exercises. Initially, the intervention focused on identifying triggering situations and participants' current responses. Using Ellis's Rational-Emotive Behavioral Therapy (REBT) model, participants learned that their beliefs about situations are pivotal in shaping outcomes, and by modifying irrational beliefs, they could experience different consequences. Through practice and group discussions, participants acquired the necessary skills to challenge irrational thoughts and maladaptive beliefs, resulting in a more balanced perspective on life and increased levels of hope.

The second key finding revealed that the Pennsylvania Resilience Intervention also significantly reduced marital burnout among the participants. This result is consistent with findings from prior studies (3, 26, 27,

35). For instance, Shomali and Barkhordari (2022) found that the resilience-based intervention effectively reduced parental burnout and child abuse risk caused by the COVID-19 pandemic in mothers of elementary school children (3). Guler et al. (2024) also identified a relationship between resilience and spousal burnout (26). These findings further support the role of resilience in mitigating marital burnout. Theoretically, stressors associated with a partner's incarceration can escalate tension in marital relationships and amplify overall life challenges. Wives of incarcerated individuals with substance dependence frequently encounter unique stressors such as loneliness, loss of social support, and emotional distress due to the absence of their spouse. Over time, these stressors may contribute to chronic physical, emotional, and psychological exhaustion (12). During the intervention sessions, participants engaged in activities that enhanced cognitive, behavioral, and social skills, ultimately promoting their resilience. By examining and challenging their cognitive patterns and beliefs, participants developed a more rational and constructive approach to coping with their circumstances. Utilizing Ellis's REBT model provided a structured framework for understanding the connection between beliefs, emotions, and behaviors. This insight enabled participants to reconstruct maladaptive thoughts and adopt more adaptive strategies, which in turn improved communication, conflict resolution, and reduced marital burnout.

Overall, the findings of this study support the efficacy of the Pennsylvania Resilience Program in enhancing hope and reducing marital burnout in women with incarcerated, substance-dependent spouses. The intervention brought about significant psychological changes in the participants, suggesting its potential value for this vulnerable population. Practitioners and policymakers in supportive organizations should recognize and respond to the unique needs of this group through targeted interventions such as the Pennsylvania Resilience Training, which can enhance their psychological well-being and resilience.

Like other studies, the present research faced several limitations. These include the absence of follow-up phases, the restriction of the study population to wives of incarcerated individuals in a specific geographic region, the use of convenience sampling, and the inability to control for potential confounding variables such as socioeconomic status, which could affect the study outcomes. It is recommended that future research address these limitations by evaluating the impact of the Pennsylvania Resilience Intervention on other issues faced by this population, such as psychological distress, marital dissatisfaction, anger, and parental burnout.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study. This study was registered at Islamic Azad University, Khorasgan Branch, under the project number and ethics code IR.IAU.AHVAVZ.REC.1402.145.

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.

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