

Effect of Resilience Training on Job Burnout of Hospital Nursing Staff

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Abstract

Background: Job burnout is among the most important determinants of employee productivity. Numerous factors affect the function of employees and burnout.

Objectives: Based on the available studies on healthcare providers, resilience and burnout are directly related to employee productivity. This study aimed to investigate the effect of resilience training on job burnout in hospital staff.

Methods: Forty-six hospital staff were divided into case and control groups (23 in each group) and enrolled in the present pre-and post-intervention study. Each group completed the pre-test to assess resilience and burnout based on the Connor-Davidson Resilience Scale (CD-RISC) and Maslach Burnout Questionnaire (MBQ). The case group received six one-hour training sessions. During these sessions, some resilience and coping skills were provided. At the end of the sessions, the participants in both groups completed the resilience and burnout questionnaires. After one month, the staff filled in these questionnaires again, and the results of the questionnaires were compared before and after the intervention. The data were analyzed using descriptive statistics and Mann-Whitney and Kruskal-Wallis tests using SPSS version 19 software.

Results: The mean age of study participants was 38.47 and 36 years in the case and control groups, respectively, and demographic features were not significantly different between the study groups. The total score of the burnout scale decreased after the intervention in the case group and increased in the control group. In addition, after the intervention, the mean score of the total burnout scale was significantly lower in the intervention group than in the control group. All subscales in the case group significantly decreased after the intervention, while all subscales increased in the control group. This increase was significant in the emotional exhaustion subscale in the control group. Only emotional exhaustion after the intervention was significantly reduced in the case group. The resilience score in the case group increased significantly one month after the intervention.

Conclusions: Resilience training as 6 one-hour training sessions significantly improved job burnout, and health officials can use this training method to improve the health and function of employees.

Keywords: Burnout, Hospital, Nursing Staff, Resilience

1. Background

Job satisfaction refers to the positive emotions and pleasures that people experience when evaluating their work experience (1). Job satisfaction has positive individual and organizational consequences, which depend on various factors (2). Employees respond differently to difficulties, and their ability to overcome these situations can be achieved in most individuals, leading to positive adjustment (3). Job burnout is among the factors negatively affecting job satisfaction, and many employees fail to deal with burnout. Like secondary traumatic stress, job burnout is part of fatigue and compassion (4). The cause of job burnout is mainly related to workplace characteristics such as workload than exposure to harmful substances (4). Conceptually, burnout is a reaction to long-term stress characterized by feelings of pessimism, loss of enthusiasm for work, and low self-efficacy (5). Burnout can be considered an expected reaction to difficult tasks, and its effects

on health care and human services occupations are far-reaching (5, 6). Some studies suggested that job burnout is currently at an epidemic level, and 75% of healthcare professionals are experiencing burnout (6-9). The reported rate of burnout varies worldwide. There are differences between the European Union (EU) and non-EU countries in Europe. In EU countries, burnout rates vary from 4% in Finland to 20% in Slovenia and in non-EU countries, from 13% in Albania to 25% in Turkey (10, 11).

Various health strategies have been reported to deal with job burnout, including resilience improvement. Resilience is the ability to overcome and adapt to unfavorable conditions while achieving positive or negative outcomes (12, 13). A growing body of evidence is evaluating the effectiveness of resilience training programs (RTPs) among different employees. While these programs typically share a common goal of increasing resilience, they differ in content, delivery, and duration. In a systematic review of RTPs, Leppin et al. demonstrated that "there is no theoretical

framework or consensus that can guide the development or application of these programs” (14). Most RTPs that promote resilience include acceptance and commitment therapy, cognitive-behavioral therapy, mindfulness-based cognitive therapy, and mindfulness-based stress reduction (15-18). These RTPs tend to consider a combination of cognitive strategies, mindfulness training, and psychological training content. They usually focus on increasing a person’s ability to manage unfavorable situations and emotional insight more effectively. Despite the consensus on the types of skills that are likely to be part of success training, to date, the available studies have reached conflicting findings regarding the effect of RTPs on burnout.

2. Objectives

Based on numerous reviews conducted on the employees of different hospitals, resilience, and job burnout are directly related to the efficiency of employees. However, despite the importance of the topic, a few studies have been conducted in Iran so far in this field. Therefore, this study investigated the effect of resilience training on the burnout of Ibn Sina Hospital employees in Mashhad.

3. Methods

The present clinical trial study with a pretest-posttest design was approved by the Mashhad University of Medical Sciences Ethics Committee and took place in Ibn Sina Hospital of Mashhad, Iran, in 2019. The data collection tool consisted of three parts. The first part included demographic information, including age, sex, marital status, number of children, education, and job. The second and third parts included questionnaires evaluating resilience and job burnout.

3.1. Inclusion/Exclusion Criteria

Forty-six employees were divided into two equal groups after completing an informed consent form. The lowest literacy of the participants was a diploma. None of the participants in each group did experience acute stress in the last six months (including the death of a spouse, divorce, separation from a spouse, imprisonment, severe injury or death of a family member, severe injury or illness, marriage, and job loss). Moreover, they did not have a history of psychiatric disorders and were not receiving medication. Participants who had participated in similar training classes during the previous year were not included in the present study. Participants diagnosed with psychiatric illness during the course or those not completing two consecutive sessions were excluded.

The sample size was calculated based on the difference in the mean variable of the resilience test score in two communities (based on the study: Investigating the effectiveness of resilience training in the mental health of people suffering from drug addiction in Toskai Center in Tehran). A sample of 21 people was calculated in each group, but considering 10% attrition and the conditions of the participants, 23 people were considered.

All the eligible participants completed the questionnaires and demographic checklist. A group of 23 participants (case group) participated in virtual training classes held by a psychiatric assistant trained to teach the resilience training sections. Some resilience and coping skills were taught during these sessions based on the resilience therapy training protocol provided in Table 1. The classes were recorded as a 60-minute audio file and were provided to the participants on a CD. The case group participants had direct access via the application and e-mail to the psychiatric assistant who conducted the classes, and they were asked to send their homework and questions by any of the mentioned methods. Completing the assignments of each session was mandatory to receive the CD of the subsequent sessions. Another psychiatric assistant was selected to coordinate the delivery of each session. At the end of the six sessions, the questionnaires were provided again to both groups. Employees who failed to attend two consecutive sessions of the classes were excluded. The control group received a one-hour virtual support session held separately, and the results were not included in the study. The questionnaires were repeated one month later in both groups. Finally, employees’ resilience and job burnout were assessed according to the pre-test and post-test.

3.2. Study Questionnaires

3.2.1. Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC) scale was used to differentiate different levels of resilience. The scale includes 25 self-report items rated on a 5-point Likert scale from 0 to 4 (almost all the time). The total score indicated the participant’s feelings over the past 30 days, and the higher score indicated more resilience. The purpose of CD-RISC is to measure the resilience of individuals and compare the resilience of different research groups. Ahangarzadeh Rezaei and Rasouli evaluated the validity and reliability of the Persian version of the questionnaire (19).

3.2.2. Maslach Burnout Questionnaire

The Maslach Burnout Questionnaire (MBQ) was used to measure the burnout rate among individuals and research groups. The questionnaire has 22 questions and is scored

Table 1. Summary of the Content of Intervention Sessions

Sessions	Content
File 1 (sessions 1-2)	Definition of resilience and its components; communication skills; empathy skills
File 2 (sessions 3-4)	Identifying capabilities; coping skills; anger control skills
File 3 (sessions 5-6)	Anxiety coping skills; self-care skills; an overview of previous sessions

based on a 7-point Likert scale from 0 to 6 (very high). The higher the score, the greater the burnout experience. The Maslach Burnout Questionnaire has three subscales. The reliability and validity of the Persian questionnaire were assessed among the Iranian population by Philian as cited by Gharagozlou et al. (20).

4. Results

The mean age of the participants was 38.47 ± 6.73 and 36 ± 7.23 years in the case and control groups, respectively. The demographic data of the study participants are provided in Table 2, which shows the two statistical populations were similar in this respect. The total score of the burnout scale after the intervention decreased and increased in the case and control groups, respectively ($P < 0.05$) (Table 3). In addition, after the intervention, the mean score of the total burnout scale was significantly lower in the case group than in the control group ($P < 0.001$). All subscales in the case group decreased after the intervention ($P < 0.05$), while all subscales increased after the intervention in the control group. The increase was statistically significant in the emotional exhaustion subscale ($P < 0.001$). After the intervention, the scores of emotional exhaustion ($P = 0.002$) and lack of success ($P < 0.001$) were significantly lower in the case group than in the control group. In addition, the number of changes (difference in the scores before and after the intervention) in the total score of burnout and its subscales was significantly different between the study groups ($P < 0.001$).

Among the case group, only the distribution of emotional exhaustion significantly decreased after the intervention ($P < 0.001$) (Table 4). Such findings indicate that no severe case was observed after the intervention. The number of participants with moderate severity decreased compared to before the intervention. The number of participants with mild severity increased after the intervention compared to before. In the control group, the frequency of emotional exhaustion was significantly different from before the intervention ($P = 0.002$). In addition, the number of moderate and severe-intensity participants increased after the intervention. According to Table 5, the total scores of resilience in the intervention and control groups after the intervention were significantly different from before

Table 2. Demographic Data Among the Study Groups^a

Variables	Case Group	Control Group	P-Value
Age (y)	38.47 ± 6.73	36.00 ± 7.23	0.235
Number of offspring	1 (2)	1 (2)	0.292
Work hours per month	160 (30)	160 (50)	0.808
Working shifts per month	30 (8)	30 (10)	0.459
Years of experience	13.11 ± 7.86	9.6 ± 6.13	0.096
Gender			0.999
Male	6 (26.1)	6 (26.1)	
Female	17 (73.9)	17 (73.9)	
Marital status			0.999
Single	4 (17.4)	3 (13)	
Married	19 (82.6)	20 (87)	

^a Values are expressed as mean \pm SD or media (IQR).

the intervention, and the resilience score decreased in the control group ($P < 0.001$) and increased in the case group ($P = 0.004$).

5. Discussion

The present study demonstrated that the total burnout score decreased significantly after resilience training sessions, and the mean score of the burnout scale was significantly lower in the case group than in the control group after the treatment.

Job burnout has become a public health challenge, and the treatment of burnout syndrome has not yet been clearly defined. Burnout is detrimental to healthcare providers, healthcare institutions, and patients. Therefore, situations inducing job burnout must be identified, and preventive measures must be taken to minimize the possible complications of job burnout (11). This can prevent burnout's common complications (such as cardiovascular disease, musculoskeletal pain, and mental disorders) (12). Monitoring employees in terms of job burnout is essential and provides practical solutions for increasing the employees' overall health. Also, appropriate intervention measures can be taken by identifying the risk and protective factors (21, 22). Two meta-analysis studies used CD-RISC

Table 3. Comparison of Maslach Burnout Questionnaire Among Study Groups

Variable	Case Group	Control Group	Intergroup Comparison
Total score			
Before intervention	40.91 ± 16.07	38.05 ± 15.82	0.550
After intervention	24.09 ± 13.23	42.36 ± 17.31	< 0.001
Intergroup comparison	< 0.001	< 0.001	-
Before-after difference	-16.8 ± 12.1	4.3 ± 5.3	< 0.001
Emotional exhaustion			
Before intervention	19.00 ± 9.34	16.04 ± 9.44	0.291
After intervention	10.48 ± 7.05	18.83 ± 9.59	0.002
Intergroup comparison	< 0.001	< 0.001	-
Before-after difference	-8.5 ± 5.8	2.9 ± 3.0	< 0.001
Depersonalization			
Before intervention	2 (3)	150 (4.25)	0.511
After intervention	1 (2)	2 (3.25)	0.054
Intergroup comparison	0.001	0.065	-
Before-after difference	-1(2)	0(1)	< 0.001
Personal accomplishment			
Before intervention	19.00 ± 6.73	19.30 ± 6.50	0.877
After intervention	12.26 ± 6.81	20.65 ± 7.33	< 0.001
Intergroup comparison (P-value)	< 0.001	0.057	-
Before-after difference	-6.7 ± 6.7	3.2 ± 1.3	< 0.001

and examined the effects of such risk and protective factors. They found that protective and risk factors show different patterns of effect size with resilience (23, 24). According to their results, the most significant relationships were between higher resilience and protective factors (including life satisfaction, self-esteem, and social support). In addition, there were moderate relationships between resilience and risk factors (including anxiety, depression, negative emotion, and perceived stress). Our study did not consider these protective and risk factors for job burnout, and the sample was randomly collected from employees. For this reason, it seems that there is a possibility of the presence of risk or protective factors in the studied groups in almost the same way, and in this study, the main goal was to investigate an intervention to reduce burnout without considering these factors.

Studies have shown a significant positive relationship between resilience and job satisfaction and burnout. Amini used the CD-RISC and MBI questionnaires and reported that the burnout rate in nurses of Tehran hospitals was 32.6% (25). Also, there was a significant relationship between increased burnout and the low resilience of nurses (25). In this regard, several studies in Iran have evaluated

the effect of resilience training in different ways on different populations. Hezaveh et al. evaluated resilience training with a cognitive approach presented as two-day workshops for two groups of 48 nurses (26). After one month, the effectiveness of the course was evaluated by the MBI test. Their study demonstrated that the severity and frequency of emotional exhaustion, depersonalization, and individual success of intensive care unit nurses following resilience training improved significantly. Unlike our study, which provided resilience training virtually, Hezaveh et al.'s study was conducted using face-to-face sessions in classes for two consecutive days, with each session lasting four hours (26). The training providers used lectures and training slides. Ultimately, they discussed the participants' experiences in a group discussion (26). Although the material sources of the sessions differed in Hezaveh et al. study and ours, both studies showed that resilience training could effectively improve burnout (26). Increasing resilience through identifying capabilities and coping strategies seems to reduce burnout in both studies.

In another study by Ahmadi et al. on nurses, the effect of resilience training was evaluated after nine one-hour sessions per week, which was evaluated by the MBI

Table 4. Job Burnout Severity Among Study Groups^a

Value	Case Group		Control Group		P-Value (Before Intervention)	P-Value (After Intervention)
	Before Intervention	After Intervention	Before Intervention	After Intervention		
Emotional exhaustion						
Mild	8 (34.8)	19 (82.6)	12 (54.5)	9 (39.1)	0.100	0.002
Moderate	7 (30.4)	4 (17.4)	7 (31.8)	9 (39.1)		
Severe	8 (34.8)	0 (0)	3 (13.6)	5 (21.7)		
Intergroup comparison (P-value)	0.001	0.025				
Depersonalization						
Mild	20 (87)	23 (54.8)	20 (87)	19 (82.6)	>0.99	0.109
Moderate	3 (13)	0 (0)	3 (13)	4 (17.4)		
Severe	0 (0)	0 (0)	0 (0)	0 (0)		
Intergroup comparison (P-value)	0.083	0.317				
Personal accomplishment						
Mild	23 (50)	23 (50)	23 (50)	23 (50)	-	-
Moderate	0 (0)	0 (0)	0 (0)	0 (0)		
Severe	0 (0)	0 (0)	0 (0)	0 (0)		
Intergroup comparison (P-value)	> 0.99	> 0.99				

^a Values are expressed as No. (%).

Table 5. The Total Score of the Resilience Questionnaire Among Study Groups

Variable	Case Group	Control Group	Intergroup Comparison
Total score			
Before intervention	61.57 ± 10.31	65.87 ± 11.83	0.195
After intervention	83 (11)	63.43 ± 11.61	< 0.001
Intergroup comparison	< 0.001	0.004	-
Before-after difference	16 (18)	-1 (5)	< 0.001

questionnaire (27). Their study showed the significant impact of resilience training on improving burnout (27). According to both studies, self-confidence and goal-oriented training could help nurses to reduce their anxiety and negative emotions and better tolerate the hardships and problems of their life and work. In another study by Hively, the application of positive psychology and resilience training was evaluated, and it was found that resilience training could reduce resilience scores of burnout dimensions (28). Most likely, both studies reduced the emotional fatigue of the personnel by teaching and practicing self-care skills (personal counseling, sleep hygiene, and physical ac-

tivities).

In the study by Goldhagen et al. to assess resilience-based training in medical residents (mindfulness-based resilience intervention), the Oldenburg Questionnaire assessed the effectiveness of the intervention. In this study, post-medical school graduate participants received two or three one-hour training sessions, including practical exercises (29). The researchers concluded that resilience training based on a mindfulness program could effectively reduce stress and burnout in residents who perceived higher stress, especially in females (29). In fact, both studies showed a noticeable reduction in emotional fatigue af-

ter the intervention, and the results were consistent. It seems that teaching and practicing skills related to stress management can increase resiliency regardless of the technique. In another study by Magtibay et al., the effectiveness of resilience and stress management training programs in reducing nurses' burnout was evaluated. The nurses were trained using specific web-based content, and their improvement was evaluated after three months. The educational content provided to the nurses was an educational book ("The Mayo Clinic Guide to Stress-free Living"), and in specific periods, the participants could talk with the book's author over the phone. Based on this study's results, participants' burnout rate was significantly reduced after the intervention (30). The Stress Management and Resiliency Training (SMART) program strategy demonstrated a statistically significant and clinically meaningful improvement in anxiety, stress, quality of life, and mindful attention (15, 30, 31).

Finally, it is noteworthy to mention that one of the most common challenges during RTP testing is non-compliance. While the extent of this issue is not clearly understood, the expected rates of non-adherence to physicians' medical advice have previously been estimated to be 24% to 50%. As discussed earlier, resilience measuring instruments require careful attention because the structure cannot be measured simply by psychometric instruments examining mental illness well-being and symptoms. Regarding measurement accuracy, the actual effect of RTPs seems to be unclear.

5.1. Study Limitations

Since our training sessions were held virtually, the possibility of conducting questions and answers in real-time or training based on role substitution and more active two-way interaction faced limitations. We tried to facilitate this issue by teaching new educational skills to the presenter of the meetings.

5.2. Future Directions

Considering that job burnout can be correlated with age, sex, education level, marital status, and the number of children, it is suggested to investigate these variables in future studies.

5.3. Conclusions

The present study demonstrated that virtual resilience training sessions could effectively decrease the job burnout of hospital staff and increase resilience. The results of the present study could be validated after the pandemic and based on the face-to-face training sections.

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Footnotes

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Conflict of Interests: The authors are employees of Mashhad University of Medical Sciences.

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