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Relationship between Job Burnout and Quality of Life of Operation Room Technologists in Educational Hospitals Affiliated to Iran University of Medical Sciences in 2016-17

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Abstract

Introduction: Quality of life is affected by Job burnout, which can be caused by long-term exposure to occupational stress. The aim of this study was to determine the relationship between job burnout and quality of life of operation room technologists.

Methods: In this cross-sectional descriptive-analytical study, 125 operation room technologists were randomly selected. The data were collected using three questionnaires: Demographic, Maslach Burnout Inventory (MBI), and WHO Quality of Life-BREF with 26 items, and analyzed using Spearman correlation test in SPSS software, and the significance level was considered as P≤0.05.

Results: The mean of Job burnout score in terms of intensity, frequency, and quality of life was 47.88±17.50, 47.95±17.42, and 63.1±18.57, respectively. There was an inverse correlation between quality of life and job burnout in terms of Intensity (P<0.01) and frequency (P<0.05).

Conclusions: Considering the significant inverse correlation between job burnout and quality of life, reducing the job burnout of employees can increase their quality of life and consequently prevent from the reduction of their productivity.

INTRODUCTION

Job burnout is a long-term response to emotional and interpersonal stressors associated with an occupation [1], which involves three major dimensions of emotional exhaustion (emotional loss and job-induced fatigue), depersonalization (impassive and non-personal response to those receiving services, care, treatment, or instruction), and reduced personal accomplishment (limited competence and lack of achievements in the work of an individual) [2].

Since the occupational damages associated with operation rooms are considered as high-risk, the level of work stress is high in the operation room technologists; therefore, the staff working in this area are prone to Job burnout that can have a negative impact on working life, physical and psychological status, motivation and performance of operation room technologists [3].

In a research in 2013, Khorasani Niasar et al. examined the factors affecting Job burnout of operation room nurses in Qom, which showed a low level in all three dimensions of emotional exhaustion, depersonalization, and personal accomplishment [4]. In a research conducted by Sillero and Zabalegui in Spain, the average burnout of operating room nurses concerning emotional exhaustion and depersonalization dimensions was low and reduced personal accomplishment was at a moderate level [5]. Findik in Turkey also reported that burnout in operating room in emotional exhaustion, depersonalization and reduced personal accomplishment dimensions was moderate, low and high among nurses, respectively [3].

operation room technologists experience a high degree of frustration and discontent regarding responsibilities and professional work, which may result in physical and psychological disorders that can affect health and compromise quality of life [6]. In general, quality of life is defined as individuals' perceptions of their position in life in the context of the culture and value systems where they live and in relation to their goals, standards, expectations and concerns [7]. A poor quality of life is strongly associated with the decline in work performance, job burnout and early retirement [8].

In a study by Beresin & Santos in 2009, the quality of life of operation room nurses of a private hospital in Sao-Paolo was studied, and the highest and lowest scores were obtained in the environment and psychological dimensions, respectively. Also, the majority of nurses believed their professional activities affected their quality of life, and attributed their to environment-related stress, responsibilities, high-risk conditions, relationships with multi-member teams, and the type of work done in the operation room [6]. In the study of Azizi & et al, the quality of life of nurses in different nursing wards was compared, and the highest score of quality of life was related to physical, psychological, social, and environmental dimensions [9]. Pavlatou et al. in their study argued that the low quality of life of operation room technologists may be due to physical stress, health problems, harsh and closed working conditions, and 8 hours of non-stop work in this environment [10].

Operation room technologists are responsible for maintaining the safety and comfort of patients in the operation room [11] and any negligence on their part may endanger the lives of patients. On the one hand, since the operation room technologists are vulnerable to occupational burnout and its complications, the physical and psychological health of operation room technologists as well as their emotional management should not be ignored. Given the limited number of studies on job burnout and quality of life of operation room technologists, it seems that the relationship between the two variables of job burnout and quality of life of operation room technologists has not been specifically addressed. Therefore, the current study was done to determine the relationship between job burnout and quality of life of operation room technologists in teaching hospitals affiliated to Iran University of Medical Sciences in Tehran.

METHODS

This cross-sectional, descriptive-analytic study was conducted in 2016-17. In this research, the study population included all surgical technologists working in the operating rooms of IUMS teaching hospitals. According to the research objective, the sample volume required for this study was determined using $n = [(z_\alpha + z_\beta)/C]^2 + 3$ formula, in which z_α represents the probability of the first type of error (at 5% equal to 1.96), z_β is proportional to the probability of the second type of error (value for 80% test power equal to 0.084) and C represents the correlation between the main variables of the study (equal to 0.25% based on previous studies) [12-14]. As a result, the volume of sample for this study was 123, and 150 samples were recruited by taking into account the sample loss and questionnaires were randomly distributed among the operation room technologists in several hospitals.

After knowledge of the purpose of this research, assurance of the confidentiality of personal information, and willingness to participate in the study, 125 subjects completed the questionnaires, but the rest of questionnaires were delivered incompletely. The inclusion criterion was holding an associate diploma or BSc in operation room technology and exclusion criteria was Have a history of mental illness and use of psychotropic drugs, chronic diseases, disability and

physical disability and severe stress in the past month (death of loved ones, divorce and severe accidents).

The research tool included three questionnaires. The first questionnaire addressed the demographic information of operation room technologists such as age, sex, marital status, work record, type of work shift, education level, income, night shift hours per month, and the employment status.

The second questionnaire was the Maslach Burnout Inventory (MBI), which is the most common tool for measuring job burnout [15] using 22 items in a 7-point Likert scale to evaluate job burnout in terms of frequency and intensity. Each job burnout subscale is separately evaluated at three levels in terms of frequency and Intensity: High, medium, and low. Out of 22 items, 9, 5, and 8 items are related to emotional exhaustion, depersonalization, and reduced personal accomplishment, respectively [16]. The response mode of subjects to each questionnaire item follows two types of instructions: Frequency and intensity. The former involves the number of times the feeling of job burnout is experienced in three aspects as follows: never (0), several times a year (1), once a month (2), several times a month (3), once a week (4), several times a week (5), and every day (6). The latter involves the intensity of the feeling of job burnout experienced by a subject in each of the burnout items: Never (0), very low (1), low (2), medium (3), medium to high (4), severe (5), and extremely severe (6) [17]. The minimum and maximum scores of total burnout in this questionnaire (frequency and Intensity) were 0 and 132, respectively. The closer the score of subject to 132, the higher the experience of job burnout and vice versa [18].

In this study, the scores related to the personal accomplishment dimension were inversely calculated for rating, and the scoring of all three dimensions of job burnout in terms of frequency and intensity is shown in Table 1 [12].

The validity and reliability of Maslach Burnout Inventory have been confirmed for the first time in Iran by Filian who used the test-retest method to determine the reliability of the questionnaire and reported a reliability coefficient equal to 0.78 [19]. In addition, the reliability of this tool in the study of Rajaee et al. (2017) was calculated equal to α=0.83 using Cronbach's alpha [20].

The third questionnaire was the WHO Quality of Life BREF (WHOQOL-BREF), which was designed by World Health Organization and was used after the integration of some areas and omission of a number of questions from WHOQOL-100 questionnaire. The results of these two questionnaires showed satisfactory consistency in various studies, and WHOQOL BREF was selected for this study due to the low number of questions and the convenience of use. Using 24 questions, this questionnaire measures four areas: Physical, psychological, and environmental health, as well as social relationships, each of which has 7, 6, 8, and 3 questions, respectively. The first two questions do not belong to any of the areas and assess the health status and quality of life in general. Therefore, this questionnaire has a total of 26 questions [21]. After doing the necessary calculations in each area, a score of 4-20 was obtained for each area, in which 4 represented the worst and 20 represented the best condition of the relevant area [9]. To interpret the results, after determining the raw scores of each area by summing up its items, the scores were converted to a longer version, and then the quality of life in each area was determined in a range of 0-100 [22]. The validity and reliability of the questionnaire have been confirmed for the first time in Iran by Nejat et al. in 2005, and correlation values of Cronbach's alpha in all areas were >0.70 [21]. In the study of Piri & Zaynali in 2016, the reliability of this scale was estimated equal to 0.85 using Cronbach's alpha coefficient [23].

To observe ethics principles, after obtaining permission from research deputy and receiving the ethics code, we referred to the operating rooms to collect information and explained the purpose of research to all the research units under study who voluntarily participated in the research, and there was no compulsion to take part in the research. At all stages of research, utmost confidentiality was observed in maintaining personal information and the anonymous questionnaire was self-reportedly completed by the research units themselves in the presence of the researcher Using SPSS software version 22, Descriptive statistics including frequency distribution, mean and standard deviation were used to describe the samples and the main variables studied. the normal distribution of data was confirmed by Kolmogorov-Smirnov test. Spearman correlation test was used to measure the relationship between the two variables of job burnout and quality of Life. The significance level of the tests in this study was considered equal to 0.05 (P≤0.05).

RESULTS

The participants of this study were 125 operation room technologists working in hospitals affiliated to Iran University of Medical Sciences, and more than half of them (52%) were in the age group under 30 years. The demographic information of the participants is presented in Table 2.

The mean and standard deviation of job burnout and quality of life of operation room technologists are presented in Table 3. According to the results, the mean and SD of job burnout in terms of intensity, frequency, and quality of life were 47. 88±17.5, 47. 95±17.42, and 63. 1±18.57, respectively.

Based on the results of Table 4, the intensity of job burnout of the majority of subjects in all three dimensions of emotional exhaustion (68%), depersonalization (62.4%), and reduced personal accomplishment (98.4%) was in a low level, and the degree of burnout in terms of frequency of the majority of studied units in the two dimensions of depersonalization (63.2%) and reduced personal accomplishment (96%) was at a low level, and the dimension of emotional exhaustion was in a moderate level in nearly half of the subjects (44.8%).

Moreover, the results of Table 3 showed that the quality of life scores in physical, social, psychological, and environmental dimensions were 54.77± 14.88, 54.60±18.07, 54.4±14.19, and 48.27 ± 12.25, respectively, which showed that the lowest quality of life score of participants was related to the environmental dimension.

Based on the results of Spearman correlation coefficient in Table 5, the quality of life had an inverse correlation with job burnout in terms of intensity (r=-0.296, P<0.01) and frequency (r=-0.244, P<0.05).

Table 1. Calculation of job burnout

Dimensions of Job Burnout	Standard score		
	High	Medium	Low
Reduced personal accomplishment			
Frequency	≥40	34-39	33≥
Intensity	≥44	37-43	36≥
Depersonalization			
Frequency	≥12	6-11	5≥
Intensity	≥15	7-14	6≥
Emotional exhaustion			
Frequency	≥30	18-29	17≥
Intensity	≥40	26-39	25≥

Table 2. Demographic Characteristics of Operation Room Technologists

Information	Number	Percent
Gender		
Female	99	79.2
Male	26	20.8
Age		
30>	65	52
40 -30	51	40. 8
40 ≤	9	7. 2
Marital status		
Single	56	44.8
Married	69	55.2
Education level		
Associate diploma	26	20.8
BSc	99	79.2
Work experience		
10>	69	55.2
20 -10	52	41.6
20 >	4	3.2
Income (Iranian toman)		
2000000>	60	48
2000000<	65	52
Type of work shift		
Fixed Morning	7	5.6
Circulating	118	94.4
Hours of night shifts per month		
12>	62	49.6
24 -12	26	20.8
24-36	14	11.2
36>	23	18.4
Employment status		
Obligatory commitments	31	24.8
Company hired	25	20
Contractual	24	19.2
Formal and contractual	45	36

Table 3. Mean and standard deviation of job burnout and quality of life of operating room technologists AND dimensions of them

Mean(SD)	
Job burnout (Intensity)	
47.88(17.50)	
Emotional exhaustion	21.79 ± 10.38
Depersonalization	5.66 ±5.79
Reduced personal accomplishment	20.42 ± 6.88
Job burnout (Frequency)	
47.95(17.42)	
Emotional exhaustion	22.03 ± 10.72
Depersonalization	5.26 ± 5.72
Reduced personal accomplishment	20.66 ± 7.80
Quality of life	
63.1(18.57)	
Physical	54.77(14.88)
Psychological	54.40(14.19)
Social	54.60(18.07)
Environmental	48.27(12.25)

Table 4. Frequency Distribution of Job Burnout Dimensions of Operation Room Technologists

Dimensions of Job Burnout	Per Frequency		Per Intensity	
	Number	Percent	Number	Percent
Emotional exhaustion				
Low	43	34.4	85	68
Medium	56	44.8	31	24.8
High	26	20.8	9	7.2
Depersonalization				
Low	79	63.2	78	62.4
Medium	31	24.8	36	28.8
High	15	12	11	8.8
Reduced personal accomplishment				
Low	120	96	123	98.4
Medium	3	2.4	2	1.6
High	2	1.6	0	0

Table 5. Spearman's Correlation Coefficients among Quality of Life and Burnout

Factors	1	2	3
1. Job burnout (Intensity)	1		
2. Job burnout (frequency)	0.949**	1	
3. Quality of life	-0.296**	-0.224*	1

*P,0.05, **P,0.01

DISCUSSION

There was an inverse correlation between quality of life and job burnout in terms of intensity (P<0.01) and frequency (P<0.05), which has also been confirmed in other studies [8, 20, 23-25]. In explaining this finding, it can be stated that people in their jobs are confronted with some degree of occupational stress, and the job burnout is due to the frequent experience of these occupational stressors. The capacity of such people to work is reduced, they are often exhausted, are unable to work and suffer from physiological symptoms such as frequent headaches, sleep disturbances, nausea, and changing eating habits. These people experience a feeling of inferiority and job despair, and have negative attitudes toward others. Overall, they look into the world with gray glasses, which reduces their health, causing a poor health status and leading to contraction of diseases. The cooperative spirit and accountability of such individuals are reduced, and they are more often prone to psychological disorders such as anxiety, depression and so on, which initially increase the feeling of indifference, discontent, and dissatisfaction with their occupation, ultimately reducing their quality of life [20]. On the other hand, people with a good quality of life experience less stress in their working lives and have a better control of occupational events and incidents. Instead of avoiding the working problems, they cope with these problems and solve them alone or with the help of others using appropriate measures, which initially increases their sense of efficiency and job satisfaction and ultimately reduces job burnout [23].

In the present study, the mean and standard deviation of job burnout in terms of intensity and frequency were 47.88±17.5 and 47.95±17.42, respectively, which was satisfactory given the stressful operation room environment. It seems that operation room technologists take advantage of behaviors proportionate to stress as well as more effective communication methods in the face of their professional problems to maintain their health, which was at a lower level relative to the studies by Sillero & Zabalegui, Keyvan Ara et al., Bayer & Ozturk [5, 26, 27].

The results of this study indicated a low Intensity of emotional exhaustion (68%) and moderate emotional exhaustion (44.8%) in terms of frequency. The rate of emotional exhaustion in this study (in terms of frequency) was consistent with a research conducted among Turkish operating room nurses [3], which reported moderate emotional exhaustion levels. In terms of intensity, the emotional exhaustion of our research was in line with studies conducted among operating room nurses in Spain [5], Isfahan operating room staff [26], operating room nurses in Qom [4], South Khorasan operating room staff [28] , Bandar Abbas operating room staff [29], and Turkey operating room personnel [27], which reported low job burnout in dimensions of emotional exhaustion . In explaining this finding, it can be said that the low Intensity of emotional exhaustion despite its high prevalence can be indicative of the fact that there have been a number of stressors causing emotional exhaustion, but the perception of their intensity has been low in a large number of operation room technologists. This can be a function of the approach to deal with problems and stressors causing emotional exhaustion in people because what prevents people from yielding to stress is the method and mechanism used by them to modulate stress, which should be based on increasing power of tolerance and adaptability of the individual in dealing with problems, and more importantly, the maintenance of mental health [30].

The findings of this study indicated a low level of depersonalization in the majority of subjects in terms of intensity (62.4%) and frequency (63.2%). The rate of depersonalization of this study was in agreement with studies among operating room staff from Turkey [27] , Qom operating room nurses [4], Bandar Abbas operating room staff [29], Turkish operating room nurses [3], Isfahan operating room personnel [26] and Spanish operating room nurses [5] that reported low levels of depersonalization ; on the other hand, the findings of this study were not consistent with a research conducted among South Khorasan operating room staff that reported moderate levels of depersonalization [28]. To explain this finding, it seems that the low level of depersonalization in the staff indicates the positive perception of employees toward recipients of the service in addition to showing the existence of intra-organizational human relationships. This positive attitude can be a function of the sense of responsibility influenced by our cultural traditions.

The results also showed a low level of reduced personal accomplishment in the majority of subjects in terms of intensity (98.4%) and frequency (96%). This finding was consistent with a study conducted by Khorasani Niasar et al. [4] that reported a low rate of reduced personal accomplishment among operating room nurses, but was not consistent with other investigations. Studies by Shadman et al., Sillero and Zabalegui [5, 29] indicated a moderate level of reduced personal accomplishment and Findik [3], Bayer & Ozturk [27], Dashtgerd et al. [28], Keyvan Ara et al. [26] reported the mean and standard deviation of reduced personal accomplishment of their subjects to be at a high level. To justify this finding, it can be stated that the operation room technologists have a high sense of efficiency and a high level of mastery, which can be attributed to environmental modulators such as proper management and appropriate hardware facilities.

The findings indicated that the mean and standard deviation of quality of life of the subjects were approximately 63.1±18.57, which was higher than the findings of previous studies in this field. A study was conducted in two large hospitals of Tehran University of Medical Sciences with the aim of investigating the effect of workload and its relationship with the quality of life of hospital staff by Zakarian et al., which reported mean quality of life score equal to 55.٥٢±١٧.23 [31]. Also, Azizi et al. in a study performed to evaluate the quality of life of nurses in different wards of hospitals affiliated with Hamadan University of Medical Sciences reported mean quality of life score of operating room nurses to be 57.11±1.9 [9]. Reza Gholi et al in their study aimed at determining the relationship between sleep quality and quality of life of operation room technologists reported the quality of life of operation room technologists to be equal to 60.44±18.47 [32]. Due to the difference in these results, it seems that the work environment in the wards, hospitals, cities and, of course, the quality of life of people are different.

The scores of quality of life in physical, social, psychological, and environmental dimensions were 54.77± 14.88, 54.60±18.07, 54.40±14.19, and 48.27±12.25, respectively. The subjects reported the lowest mean of quality of life in the environmental dimension (48.27±12.25). This finding was consistent with the results of Azizi et al. where the scores of physical, psychological, social, and environmental dimensions of quality of life in nurses were 58.78±14.09, 57.83±15.35, 54.78±18.5, and 52.58±15.54, respectively, and the lowest score was related to environmental dimension [9], as well as with Ibrahim et al. research that examined the relationship between quality of life, job satisfaction and related factors in nurses working at Jeddah Hospital of Saudi Arabia and reported the quality of life score of operating room nurses in physical, social, psychological, and environmental dimensions to be equal to 60.29±18.36, 56.18±20.81, 54.85±15.43 and 50.46±16.74, respectively, and the quality of life of operating room nurses was reported to be lower than other nurses [33].

In their study, they argued that higher workload was a reason for lower quality of life of operating room nurses. However, our results were not consistent with the quality of life study of operation room nurses in Sao Paolo by Santos & Beresin, in which the mean of environmental, social, physical, and psychological dimensions of quality of life were 96.73, 94.3, 81.10, and 69.97, respectively, and the operation room nurses reported the highest score in the environmental dimension and the lowest score in the psychological dimension. These results were attributed to the fact that their study was conducted in a large private hospital with a modern structure that led to an increase in benefits of staff in view of healthcare programs, transportation services, retraining courses, daytime children care centers, and equal or higher salaries than other occupations [6].

Since environmental health dimension measures items such as leisure time and the opportunity to acquire information and skills, security and economic satisfaction, environmental health issues, health facilities and services, it can be argued that low environmental dimension scores can be due to 24-hour working in a closed, stressful and potentially dangerous environment of the operating room, which restricts a person in terms of social interaction and thus leaves less opportunity to deal with one's favorites things, as well as dissatisfaction with welfare facilities and monthly income.

CONCLUSIONS

The results of this study showed there was an inverse correlation between quality of life and job burnout and the quality of life of operation room technologists in the environmental dimension was lower than other dimensions and that the level of emotional exhaustion in terms of frequency in approximately 50% of the operation room technologists was in a moderate level.

The most important limitation of this study was the quantitative and cross-sectional nature of research. It is recommended that subsequent studies should be conducted as comprehensive cross-sectional researches and deep qualitative studies on the operation room technologists in other parts of the country, as well as in comparison with private hospitals and hospitals affiliated with Social Security Organization.

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ETHICAL CONSIDERATION

This study is submitted with the ethical code IR.IUMS.REC 2016.9411101009

AUTHORS' CONTRIBUTIONS

Study concept and writing the original draft: Sara Mohammadi, Sedigheh Hanani, and Fardin Amiri; Data collection: Sara Mohammadi; Data analysis: Nimamali Azadii; Reviewing the final edition: All authors.

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CONFLICT OF INTEREST

There is no conflict of interest for this study.

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