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Research Article

The relationship between job burnout and life expectancy in radiology radiation workers in Yasuj city 2015

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ABSTRACT
In today's society, the special attention and importance of mental health in all areas of life has increased dramatically; hence, identification and coping with mental health threats can ensure the health of people in the community. Occupational burnout is a psychological syndrome and is seen mostly in occupations where people spend a lot of hours in close contact with other people. Depending on the specific conditions of the work environment and the importance and sensitivity of their role in the health of individuals and the expectations that society has In order to provide them with high quality work, they feel a kind of occupational stress and psychological stress that provides the basis for the emergence and increase of burnout, as well as disappointment to life and future among radiology personnel. Therefore, a research was conducted to investigate the relationship between job burnout and life expectancy in radiologists in Yasuj.

Method: This cross-sectional descriptive-analytic study was conducted in 2015 between 48 radiation workers(23 males and 25 females) in Kohgiluyeh and Boyerahmad provinces. Sampling was done by census. The instrument of this research was a questionnaire consisting of demographic questions including age, sex, degree and marital status. The questionnaire also includes questions that have different dimensions of job burnout, including emotional exhaustion, loss of individual success and de-personalization, and questions about life expectancy and job satisfaction. The data of the questionnaire completed using the SPSS21 software and the appropriate non-parametric tests, Spearman correlation coefficient, and one-way t-test.

Findings: The results of the description of the variables of this study showed that the emotional exhaustion was mean 27.29 and the standard deviation was 14.12. De-personality disorder has a mean of 12.5 and a standard deviation of 7.17, the lack of individual success has an average of 37/34 and a standard deviation was 8.9. Finally, the results indicated that burnout had an average of 78.28 and a standard deviation was 25.18. The results showed that the life expectancy was 30.064 and the standard deviation was 4.95. Also, the results showed that the job satisfaction was 20.02 and its standard deviation was 3.93. Job satisfaction had no significant relationship with life expectancy and $p = 0.784$). The results of this study showed that the level of significance that you have a correlation between age and life expectancy greater than 0.05. Therefore, the relationship between these two variables is not significant (and $p = 0.702$). Job satisfaction and life expectancy have no significant relationship with each other ($p = 0.141$).

Conclusion: It is necessary to identify the stressors in radiology and to eliminate these factors by improving the organizational, physical, and care structures, while reducing stress in the light of workers and increasing job satisfaction and improving their physical and mental health, increase the quality of nursing care in this vital part is provided.

INTRODUCTION:

In today's society, the special attention and importance of mental health in all areas of life has increased dramatically. Therefore, identification and coping with mental health threats can ensure the health of individuals in the community (1). And today, the health sector is one of the most important areas for sustainable development in human societies because of its direct relationship with human health. The realization of this requires the presence of a healthy, happy and motivated group of therapists (2). The health sector in the community due to its role and structure, due to the working conditions of the staff in this area, which are in direct communication with the people, and the importance and sensitivity of the health of the people and society, which is dependent on the work and capabilities of the personnel in this field, is a kind of Stress and sensitivity for the person and organization involved in the therapeutic areas that this stress and the importance of specific working conditions has caused the employed and involved in the different areas of the therapeutic area more than any other institution and organization exposed to the burnout phenomenon (3). Burnout syndrome is not essentially a mental disorder, but slowly progresses over time. It may turn out to be a disability. Occupational burnout is a psychological syndrome, and is most commonly found in occupations where a person spends many hours in close contact with other people (4). In addition, burnout is a form of physical and emotional exhaustion that results in a negative self-image, a negative attitude towards the profession, and a feeling of lack of communication with the patient when providing care and may lead the person to a variety of physical and mental illnesses (5). This syndrome is a collection of emotional, attitudinal, behavioral, and organizational symptoms. These symptoms include depression, low job satisfaction, deflection, blame and lack of empathy toward the patient, decreased job performance, increased interpersonal problems and family problems, psychotic symptoms such as feeling sick, fatigue, headache, sleep disorders and digestive problems, and finally Irregularities in patient care, increased theft, and treason and absenteeism are high. Among the factors that lead to burnout, one can mention the following: shift work, inadequate use of personal abilities, high workload, Discrimination on wages, ambiguity of future job, relationship with colleagues, qualitative status of tools and probable risk and quantitative probability workload in a repetitive and uniform work environment (6). Based on this, Mazlak has provided a three dimensional concept of burnout that includes emotional exhaustion, depersonalization, and personality deprivation (4). According to various definitions that describe the nature and symptoms of burnout, each aspect of occupational burnout as defined below:

1.Emotional Exhaustion: The main and most important cause of job burnout is a form of depression and feeling of helplessness and inefficiency in the job that the person lost his emotional ability and in creating and communicating positively and effectively with the person applying for and referring to him/her is unsuccessful in obtaining employment services (7,8,9, 10).

2. Personality and pessimism: With symptoms such as pessimism, distrust, complaints, a negative attitude toward others and those who refer to him, it becomes apparent that the person working in dealing with the visitors to them as an inanimate object and it creates the distance between the employed person and the recipients of the service. According to the results of the research, the reason for this type of distance is the lack of attention and lack of protection and consideration of the characteristics and professional capabilities of the person employed by Organizations, managers and officials (7,9,10).

3. Decrease or inadequate job: in part, this component can be defined by the same inefficiency in the job, which leads to a negative perception and lack of belief and confidence in their profession and career advancements in

their work, causing disability, weakness in coordination with their job needs, which, according to more general definitions, this after burnout reduces the efficiency or productivity of the job (8, 11).

Radiography is one of the most important diagnostic methods in health care services, and the effective use of this technology can only be achieved through specific and organized procedures (12). The statistics show that more than 80 percent of patients in hospitals need some kind of radiopharmaceutical (13), and the number of diagnostic imaging tests from patients is increasing every year, as well as surveys show that in the world more than 10 million radiation tests done. As well as many potential and dangerous diseases and physical lesions of patients, if there were no X-ray imaging devices, it was not detectable or difficult to diagnose (14). Radiologists are more susceptible to stress due to exposure to radioactive materials and ionizing radiation, as these factors can lead to various types of diseases, such as genetic toxicity, cancer, changes in blood and immune system, eye lens cataract, fetal abnormalities in at birth, cardiovascular changes, skin burns and other eye injuries (15). As a result, radiological personnel sometimes have a disappointment in life, and especially in the future.

Despair is a shocking state that becomes apparent with feelings of impossibility of affairs, disability, and lack of interest in life. A person is severely inactive due to frustration and can not judge and decide on his / her own situation (16).

Hope is not an inactive excitement that appears only in the dark moments of life, but rather a cognitive process in which individuals actively pursue their goals (17). Given the specific conditions of the work environment and the importance and sensitivity of their role in People's health and the expectations that society has for their high quality of work has a kind of occupational stress and psychological stress that has created a background for the emergence and increase of burnout, as well as disappointment to life and future among radiology personnel. According to the mentioned materials and considering the importance of recognizing and identifying the factors affecting the burnout Job and factors influenced by life expectancy and given the fact that in Iran, research on the relationship between job burnout and hope for life has not been done in radiology department personnel, we have done this research in the hospitals and centers of the radiology department of Yasuj city.

METHOD:

This cross-sectional descriptive-analytic study was carried out in 2016 between 48 workers (23 males and 25 females) in Kohgiluyeh and Boyerahmad provinces. A survey on the burnout of life expectancy in radiology radiation worker in Yasuj was investigated. Sampling method was census.

All participants involved in the study were informed about the reasons and objectives of the study, the confidentiality of the data, and the question of the name of the questionnaire, and, moreover, they could, naturally, refuse to participate. The research tool in this study is a questionnaire.

A questionnaire including demographic questions, including age, sex, level of education, work experience and marital status, etc., also include questions that have different dimensions of job burnout, including emotional exhaustion, lack of personal success and personality problems, and questions about hope to life and job satisfaction.

The data of the completed questionnaires were analyzed using SPSS21 software and appropriate non-parametric tests, Spearman correlation coefficient, one way t-test.

Validity and Reliability of Maslose Burnout Questionnaire:

The job burnout inventory includes 22 items that measure the three aspects of job burnout (emotional exhaustion, individual success, and de-personification) (Maslash and Jackson, 1981). Maslashl and Jackson have reported a coefficient of internal consistency for emotional exhaustion of 9.0, decrease personality 79.0 and individual success 71.0. The validity and reliability of this questionnaire have been approved for the first time in Iran. (1992). And its coefficient is calculated by Cronbach's alpha method 78.0. Also, Behnia (2000) calculated the reliability of this test with Cronbach's alpha of

between 55.0 to 87.0 and Badri Garegury (1995) between 75.0 and 84.0 . Based on the standardized version of the cross-sectional report, this questionnaire has valid credentials.

Maslash and Jackson used three methods to determine the validity of the questionnaire:

1. To calculate the correlation of the score of the individuals in the questionnaire with a score that a person was completely familiar with.
2. Computation of the dimensions of job experience with job burnout.
3. Calculating the correlation between the score of the people in this questionnaire and the various consequences that are supposed to be related to burnout.

This test was made by Maslash (1981), which is based on a new estimate of the stress phenomenon, that is, burnout. The questionnaire consists of 22 articles that measure emotional exhaustion, personality deprivation and lack of individual success in the context of professional activity, and especially for measuring and preventing exhaustion in professional groups such as nurses and teachers, and so on. The scoring of the subjects in this questionnaire is based on a 7-point Likert scale. The options for this test are never, very low, low, moderate, high, moderate, high, very high, when the subject is studying this scale, the person expresses his feelings with respect to the options available.

Questions (1,2,3,6 ,8,13,14,16,20) relate to emotional fatigue subscales. Questions (5,10,11,15,22) also relate to the subscale of personality alleviation, as well as questions (4,7,9,12,17,18,19,) related to the subscale of the lack of individual success.

The rating of this test's options is never rated 0, very low score 1, low score 2, average score 3, average to high score 4, high score 5, and much more score 6. Of course, the questions (1,2,3,5,6,8,10,11,13,14,15,16,20,22) are used for reversing questions and questions (4,7,9,12,17,18,19,21) are calculated directly..

For this questionnaire, two types of scale can be used.

A: Frequent scale: never (zero); multiple times a year; once a month; two times a month; three times a week; four times a week; Every day (6)

B: Severity scale: Never (0); Very low (1); Low (2); Medium (3); Medium high (4); High (5); Very high (6).

The Hope Questionnaire, prepared by Schneider, Harris, Anderson, Holren, Irronik et al. (1991), has 12 questions and aims to measure the life expectancy of individuals. The five-point Likert scale is based on the Likert spectrum. The questionnaire is designed for people aged 15 and over. Of the four phrases used to measure factor thinking, the four phrases for measuring strategic thinking and 4 phrase is divergent. Therefore, this questionnaire measures two subscales of factor and strategy. Hope is considered as one of the sources of human coping in adapting to problems and even serious illnesses. Hope can also be described as a healing, multidimensional, dynamic, and powerful healer, and has an important role to play in adapting to lack.

RESULTS:

The findings showed that 23 (47.9%) were male and 25 (52.1%) were female (Table 1-4). In addition, the results of this study indicate that the number of female respondents in this study is more than men.

Table 1- 4 . Frequency and percentage of gender abundance

Variable	Level	Abundance	Frequency
sex	Man	23	47.9
	Female	25	52.1
	Total	48	100

Findings of the marital status of the subjects indicated that 18 (37.5%) of the subjects were single and 30 (62.5%) were married. Therefore, most statistical samples of this research are married.

Table 2-4 . Frequency and percentage of marital status of subjects

variable	Level	abundance	percentage

Marital status	Single	18	37.5
	Married	30	62.5
	Total	48	100

The results indicate that 9 (18.8%) of the subjects live alone. The results also showed that 15 (31.3%) of the members of their families were two people. 8 (16.7%) have 3 members and 8 (16.7%) have four members. The results also showed that 8 people did not answer this question.

Table 3-4. Frequency and percentage of abundance in the number of family members of the subjects

variable	Level	abundance	percentage
Number of family members	one person	9	18.8
	Two people	15	31.3
	three person	8	16.7
	four people	8	16.7
	not announced	8	16.7
	Total	48	100

The results of Table 4-4 showed that 3 (6.3%) of the subjects had a high school diploma. 6 (12. 5%) had an upper secondary school degree, 38 (79.2%) had a bachelor's degree, and one (2.1%) had a master's degree. Therefore, the bulk of the bachelor's degree is the most common and the minimum number is for a master's degree.

Table 4-4 . Frequency and percentage of students' level of education

Variable	Level	abundance	percentage
Level of Education	Diploma	3	6.3
	Associate Degree	6	12.5
	Bachelor	38	79.2
	MA	1	2.1
	Total	48	100

Results from Table 5-4 show the job of the wife of the subjects. The results showed that the wife of 12 (25%) are housewives. The spouse of 15 (31.3%) of the subjects was an employee, wife of seven (14.6%) teachers, wife of four (8.3%) with a job and wife of four (8.3%) are studying. The results also showed that 3 subjects did not answer these questions.

Table 5-4 . Frequency and Percent of Frequency of Wife's Exercise

Variable	Level	abundance	percentage
Wife job	housewife	12	25
	Employee	15	31.3
	Teacher	7	4.61
	Free	4	8.3
	student	4	8.3
	not announced	3	6.3
	Total	48	100

The frequency of students' field of study indicated that 47 (97.9%) of the subjects had a degree in radiology and only one (2.1%) had another field.

Table 6-4 . Frequency and percentage of students' field of study

variable	level	abundance	percentage
Field of study	1	47	97.9
	2	1	2.1
	total	48	100

The results of the type of employment of the subjects showed that 16 (33.3%) of the subjects were officially employed, the most frequent. The results also showed that 6 (12.5%) were contracted 9 (18.8%) as an hourly contract, 3 (6.3%) were paid on a daily basis and 14 subjects (29.2%) in voluntary hired.

Table 7-4 . Frequency and percentage of the type of recruitment of subjects

Variable	Level	abundance	percentage

type of employment	Official	16	33.3
	A treaty	6	12.5
	Hourly contract	9	18.8
	Daily worker	3	6.3
	Volunteering	14	29.2
	Total	48	100

In Table 8-4. the number of patients was evaluated. These results showed that the least frequent was those who did not have any illness. Only one subject has such a situation. The most frequent cases are those who have had 40 patients.

Table 8-4 . Frequency and percentage of abundance of patients' subjects

variable	level	abundance	percentage
Number of patient	0	1	2.1
	15	7	14.6
	20	7	14.6
	25	4	8.3
	30	4	8.3
	38	2	4.2
	40	20	41.7
	50	1	2.1
	Don't report	2	4.2
	total	48	100

Table 9-4 . Frequency and percentage of frequency of subjects' activity

variable	level	abundance	percentage
Subject's activity	Radiology	36	75
	CT Scan	6	12.5
	M.R.I	3	6.3
	not announced	3	6.3
	Total	48	100

The results of the study showed that 36 patients (75%) were in the radiology department, 6 (12.5%) in the CT scan, and 3 (6.3%) in the MRI department. Also, 3 subjects did not answer this question.

Table 10-4 . Average and standard deviation of age, work experience and number of shifts

variable	Mean standard	deviation	maximum	minimum
Age	29.94	5.42	46	24
work experience	5.42	3.97	14	1
Number of shifts	20.79	6.52	35	3

The age descriptive results showed that the mean age of the subjects was 29.94 years and the standard deviation was 5.42 . Also, the oldest is 46 years old and the youngest are 24 years old. The results also showed that the average work experience of employees was 5.49 years and the standard deviation was 3.97 years. Also, with the most recent experience of the 14-year-old and the youngest subject, he is 1 year old. The results show that the average number of shifts is 20.79 and the standard deviation is 6.52 . The maximum number of shifts is 35 and the minimum number of shifts is 3.

The results of the descriptions of the variables of this study showed that the emotional exhaustion was 27.29 and the standard deviation was 14.12 . De-personality disorder has a mean of 12.5 and a standard deviation of 7.17. The lack of individual success has an average of 37.34 and a standard deviation of 8.9 .Finally, the results showed that burnout had an average of 78.28 and a standard deviation of 25.18 (Table 11-4).

Table 11-4 . Description of burnout and its dimensions

variable	mean	deviation
Emotional exhaustion	27.29	14.12
Dedication	12.5	7.17
Lack of individual success	37.34	8.9
Burnout	78.28	25.18

The results of Table 12-4 show that there is no significant relationship between work experience and burnout of respondents (r = -0.194 and p = 0.265). Therefore, this hypothesis is not confirmed and changes in the length of work experience will not change the level of job burnout of respondents.

Table 12-4 .Correlation between work experience and job burnout

variables	Correlation Coefficient(r)	Meaningful level(p)
Work experience	-0.194^{ns}	0.265

CONCLUSION:

The study shows the relationship between job burnout and life expectancy in Yasuj city workers.

In general, the dimensions of burnout, lack of individual success (8.9± 37.34) and de-personality (7.17 ± 12.5) and emotional exhaustion (14.12 ± 27.29) were evaluated. The present study In comparison with the study of KHatiban and his colleagues who were surveyed for the purpose of examining the burnout in Hamedan medical emergency workers, it was calculated 24.96 (18). Qari Alwijdeh et al., Who conducted a study to determine the burnout rate of health care in Koohrang city, Chaharmahal-Bakhtiari province and some related factors in 2010, and calculated the emotional exhaustion of 4.6 (1). Compared to the study by Talaei et al. (19), which was found on the employees of health centers (24. 5%) and compared with the study of Kluger et al. (20), who examined anesthetics specialists in Australia (20%) Was more than that . It was also greater than the study of kilfedder et al. (21) who performed on 510 nurses in Scotland and the study of Wu et al. (22) in China, which was 5.2. The results of the KHatiban and his colleagues showed that the operative personnel of emergency medicine in Hamedan province reported moderate degrees of frequency and severity of emotional exhaustion and feelings of personality deprivation, and a great deal of emotion and their lack of personal accomplishment. According to the results of these individuals, such as other health care providers in other countries and Iran, there is a risk of burnout (18). In countries like China, 47.5% of physicians have been reported emotional exhaustion in the mental health sector (22). Mirjana et al., in a study that evaluated the extent of job burnout in a supportive occupation among ICU staff, also had a moderate level of emotional exhaustion and personality traits (23).

The results of analysis and analysis of data in relation to personality deprivation in the study of KHatiban et al., Which are 11/85, are consistent and almost similar to the present study (18). Degradation in this study is almost 6 times as much as the study of Qari Alwijdeh et al (2.7) (1).

In Talaei et al. (19), this rate was 0.7% and in the study by kilfedder et al. (21) on nurses' psychiatry was 7.02 and in the study by kguger et al. (20) on anesthetics specialists was 20%.

In the current study, the lack of individual success is 37.34, which is comparable to the rates of study by Kari Alaviyeh et al. (1), which is 24. 5%, and Kluger et al. (20) in anesthesiologists (36%) and kilfedder et al. (21) In the mental health of nurses (33.1%), wu et al (22), 8-12%, and Talaei et al. (32), 6.7%, show a lack of individual success.

Sahib Al-Zamani and colleagues conducted a study to determine the extent of job burnout and its relation with social support of nurses working in psychiatric hospitals in Tehran in 2009 in a total of 93 nurses. They found that about 70% and 65% of nurses had moderate rates of burnout and severity of burnout respectively, 67.7% and 81.70% of nurses had a small amount of frequency and intensity of emotional tiredness, respectively, and 75.30% and 71% respectively had a small amount of frequency and severity of indifference, but the

frequency and severity of individual success in the majority of them was high. They also concluded that with increasing head nurse support, the frequency and severity of emotional exhaustion decreases and with the support of a partner, emotional fatigue and severity of indifference, and with the support of the family, the severity of emotional exhaustion and the frequency of emotional fatigue decreases (6).

According to the results of the research by KHatiban et al., The presence of burnout in the emergency medical staff could be due to their occupational nature.

Although it seems that due to some problems and inadequacies in the lives of married people, this group shows a more severe reaction to stressors, but according to the results of this study, which indicates that burnout in There was no significant difference between married and single subjects (t = 0/183 and p = 0.245). Therefore, marital status does not affect on job burnout.

Navidian et al., Who conducted a study to investigate occupational stressors and their relation with general health in nursing staff of the emergency wards of Zahedan hospitals (2003). According to the results, the stress intensity of factors in the group of individuals ,the married people have a better mental status than single people, because married people receive more understanding and support from their spouses, which serves as a supporter of dealing with working stresses for married people (23).

A study of occupational stress and depression in doctors in Australia, USA and the United Kingdom showed that especially in the United States, depression and occupational stress were higher in single workers than in married couples (24).

But Abdi Masuleh et al. In his study reported a significant relationship between the underlying variable of marital status and the reduction of individual success. The results of the study by Abdi Masuleh et al. Indicated that the majority of subjects in the dimensions of emotional exhaustion and depersonalization were at a low level and in the level of individual success rate reduction (25).

The research of Qari Alwijdeh et al. Did not show the relationship between dimensions of burnout and the marital status of health care, which is similar to that of talaei et al. (19), and could represent acceptable social protection until marriage, that is, marriage has a lower role than other studies in reducing burnout and somehow indicates the low level of loneliness before marriage compared to Western societies in Iran (1).

In the present study, there is a meaningful relationship between sex and burnout (T = 2.707 and p = 0.011). Comparison of two groups showed that burnout in women is more than male employees.

In the studies conducted by Navidian et al., The severity of stress in the various factors in the men group was slightly higher than that of the women, but this difference was not significant (23).

The results of this study showed that the level of correlation between age and burnout is greater than 0.05. Therefore, the relationship between these two variables is not significant (r = -0.85-r and p = 627). Therefore, the change in the age of the subjects does not affect their burnout.

There is no significant relationship between work experience and job burnout among respondents (r = -194; r = -0.265).

In the study of Talaei et al. (26), as in the present study and in the study of Qari Alwijdeh (1), there is no significant relationship between burnout and work experience.

Job burnout among married and single subjects is not significant (t = 0.183 and p =0.245)

The results of one-way ANOVA for burnout in different educational levels are not significant (F = 0.561, p = 0.576). Therefore, at different levels of education, burnout is not significantly different.

Talaei and colleagues have shown that there was a significant difference between the post-doctoral and postgraduate studies in terms of depersonalization (p = 0.022), and the other groups did not differ significantly in terms of burnout dimensions (19).

In the study of Qari Alwijdeh (1), similar to the study of Najafi et al. With the aim of investigating the relationship between job burnout and demographic characteristics among the rescuers of the Red Crescent Society of Tehran province in 2012 (32) and Sotoudeh Azal and Bakhtiari (27) between sex, age group, Marital status, place of service, type of responsibility and dimensions of burnout were not significant.

The results of Safari, Goudarzi's research in confirming the findings of the present Peugeot show that there is no significant relationship between age, marriage and job satisfaction. However, there was no significant relationship between sex and burnout in this study (28).

Also, the results of GHahremnai and colleagues research that aimed to investigate the effect of control source on job burnout in the education of female in the Tehran literacy movement suggest that demographic variables do not affect burnout components (10).

The results of the data analysis showed that life expectancy with a mean of 30.064 and a standard deviation of 4.95. Also, the results showed that the job satisfaction was 20.02 and the standard deviation was 3.93.

Hosseinian studied the effect of group therapy on increasing the life expectancy of cancer patients in Ahvaz Shafa Hospital. The results of this study indicate that the treatment of semantic therapy increases the life expectancy of cancer patients (29).

According to the research results of Kazemi et al., It was found that there is a positive and significant relationship between quality of life and life expectancy. Thus, patients who have a good life and quality have a better life expectancy than others (30).

In a research study, Snyder concluded that there was a significant correlation between the hope of positive and negative predictors of negative emotions (31).

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