

The Relationship between Burnout and Mental Health in Kashan University of Medical Sciences Staff, Iran

Manijeh Kadkhodaei^{a*}, Mohammadreza Asgari^b

^a Department of Management, Naragh Branch, Islamic Azad University, Naragh, Iran.

^b Department of Management & Accounting, College of Management & Accounting Yadegar-e-Imam Khomeini (RAH) Shahre-Rey Branch, Islamic Azad University, Tehran, Iran.

*Correspondence should be addressed to Ms. Manijeh Kadkhodaei; Email: Manijeh.kadkhodaei@gmail.com

A-R-T-I-C-L-E I-N-F-O

Article Notes:

Received: July 4, 2014

Received in revised form:

Dec 26, 2014

Accepted: Dec 28, 2014

Available Online: May 25, 2015

Keywords:

Professional burnout,
mental health, Kashan,
staff

A-B-S-T-R-A-C-T

Background & Aims of the Study: Professional burnout is a kind of function disorder which can be developed due to long exposure to job and mental stress. This can affect the physical and mental health of people as well as their performance. So, this study with purpose of evaluating the rate of professional burnout and its relevance with mental health situation of Kashan University of Medical Sciences staff was performed.

Materials & Methods: This cross-sectional study was conducted on 500 staffs of hospitals and health centers in Kashan university of Medical Sciences using share sampling in 2014. Three types of questionnaires were used in this research: Staff demographic characteristics questionnaire, Maslach Burnout questionnaire (MBI) and Goldberg general Health Questionnaire. In Maslach Questionnaire, the mental health frequency of studied units was evaluated using Likert scale. Data analyzed using SPSS software. T-test, Tukey, ANOVA, Chi-Square and Pearson correlation coefficient.

Results Most of subjects were in mild to moderate levels of emotional exhaustion and depersonalization while they were in mild level in personal accomplishment and professional engagement. The prevalence of symptomatic samples in the GHQ-28 was 32.8. There was a significant statistical relationship between burnout and mental health in terms of sex, depersonalization and emotional exhaustion. The emotional exhaustion was high in women staffs. However, depersonalization in men was higher. There was a significant relationship between professional burnout and mental health ($P < 0.001$), while it was not found a significant relationship between decreasing personal accomplishment and professional burnout. The high prevalence of burnout in the dimension of self accomplishment, combined with the strong correlation between mental health and burnout, it is essential to respect the authorities in preventing this problem

Conclusions: Our results show that there is a strong correlation between mental health and burnout. The high prevalence of symptomatic samples and high prevalence of burnout in the dimension of self accomplishment, combined with the strong correlation between mental health and burnout all show that care should be taken to improve the stressful conditions that Employee face.

Please cite this article as: Kadkhodaei M, Asgari M. The relationship between burnout and mental health in Kashan University of Medical Sciences staff. Arch Hyg Sci 2015;4(1):31-40.

Background

Burnout and mental health are two important issues that not only affects on individual performance, but also on organization performance. Burnout is a state of emotional, mental, and physical exhaustion caused by excessive and prolonged stress (1).

Maslach and Jackson presented the most common definition of burnout. In their point of view, burnout has three components: The first component is emotional exhaustion, that acts the same as the variable of mental pressure and it's assigned such as the feelings under pressure and abolishing (2). In this case, it's possible that the individual becomes reluctant and the job doesn't stimulate any emotion and positive feelings anymore.

The second component is depersonalization of the individual and leads to negative and cruel response to the people who usually receive the service from individual. In this situation, the attitude clientage of attired person is negative to client, and the client is a creditor in this eyes such attitude can lead to active aggression (verbal and nonverbal) and inactive sabotage and intentional delays (3).

The third component is decreasing the personal efficiency that lead to decreasing the competency feeling in accomplishing the personal duties and negative evaluation from self in job application. The stress due to job environment occurs, when there is the lack of balance between the requirements and environmental demands with the capability of individual for responding. Whatever the requirements and environmental demands increase, and the capability of individual for responding decrease, the mental pressure is created. Research has shown that there is a close relationship between stress and burnout (3).

Burnout isn't the only issue rising from weakness or inability of the staffs, but its related job environment and lack of

coordinating between the inherent properties of individuals and the nature of the job. However, the rate of the lack of coordination is more, the patented of burnout goes, and it causes the importance of values decrease and the mentality and wills weaken and it affects the mental health of individuals (4).

Burnout has relation to mental health and the rate of individual efficiency. So familiarization with the methods of effective opposition with mental pressure and dominance on burnout, help to graduation of mental health and importing the effectiveness and man power efficiency, also some researchers believe, burnout occurred in different rates without considering the types of jobs between people. So we can mention that burnout is a potential problem in all jobs specially service jobs (5).

The people who experience the burnout are usually tired physically and mentally. The individual feels that has been weakened physically and working is hard. There is no satisfaction from work, and there is negative attitude towards staffs, colleagues and even the organization. Most of the time, he is not able to consider the signs of success in the job, and isn't satisfied. He has the negative attitude towards his progress that leads to lose and decrease his self confidence. The individual take the time and search for another job while he is not satisfied and so he resigns. Also the research showed that there is close relation between mental pressure and burnout. In fact, burnout is created by continues mental pressure. Burnout decreases the quality of presented services to patients and so that it leads to dissatisfaction from medical service, so recognition and prevention from burnout has key role in satisfaction of patients (6).

Aims of the study

The aim of the present study was to investigate the relationship between burnout and mental health in Kashan University of Medical Sciences staff.

Materials & Methods

This cross-sectional research was conducted on Kashan University of Medical Sciences staffs. Random sampling method was performed on 500 people who attended the percentage of covering units. Questionnaires distributed between them. In this study, 70 questionnaires were returned. They were incomplete. Study was done, after mentioning the purpose of research, assurance of personal information confidentiality and voluntary participation. The condition of entering to study was having one year experience and no consumption of tranquilizer medicines. The collection tools in this study were three questionnaires that were distributed between staffs after training. In first questionnaires, demographic properties of individuals such as age, sex, experience, and marital status studies, major and working hours had mentioned.

Second questionnaire used from the general health questionnaire (GHQ-28).

That innovated in 1972 and goal was finding and recognition of disorders in referring to medical centers. This questionnaire was one psycho logic up to date questionnaire and applied to identify the individuals with psychiatric problems.

The 28-questions form measures four scales: Physical signs, social application dysfunction, anxiety, insomnia, and committed social suicide. For every material, the Likert grading method with numbers 0,1,2,3 or two files response scales can be used. In Likert grading system, intensity of the signs is evaluated. The higher grade shows the higher signs (7-9).

The psychometrics characteristics of different versions 43 were surveyed in different countries. They showed that, the 28- questions version of Goldberg has higher validity, more sensitively and properties. This version is according to the analysis of factors which was done by Goldberg and Hiller (1979) (10).

Yaghubi has reported the total α -coefficient 0.88 and credit coefficient of partial test

between 0.50-0.81 (11). Maslesh and Jackson calculated the interior stability for each partial test. The interior stability of questionnaire with coefficient α - Cronbach was reported 0.71-0.90 (7).

Najafi calculated the stability of this test 0.86 using α - Cronbach test. This coefficient has been reported 0.89, 0.70 and 0.83 respectively for partial tests (12). Also, this questionnaire was used by Iranian researchers repeatedly. It was confirmed by scientific credit of more than 90%. Najafi has obtained the General health by test renewed test 0.89. The rate of questionnaire credit in terms of frequency and intensity using α - Cronbach in this rest for Maslesh was 0.768 and 0.781 respectively. Also the rate of questionnaire credit for GHQ test obtained 0.897 (2). That shows two questionnaires received required stability. Data was analyzed using SPSS software. Descriptive statistics indexes such as one sided, Variance (ANOVA), Chase test (TOKEY), Correlation test (Pearson), Chi square test, Fisher Man, Witeny Man T, Kroschal valis, and Pearson independent were used.

Results

From total people, 57.4% were women and 42.6% were men. 10.2% was equal or less than 25 years old in first group. 40.4% were 26-35 and 49.4% were 36-60. The average age was 37.0 6 years old in men with standard deviation of 8.6% and 34.9 years old in women with standard deviation of 8.20.

55% had personal house, 23.2% had rented house and 21.8% reside in fatherhood house. 84% of people were married, 14.6 single and 1.4% divorced. 26.4% had high school diploma, 11% associate degree, 52.2% bachelor degree, 7.4% master's degree and 3% doctorate. About half of units in research (49.6%) were unsatisfied from their economic situation, 26.6% were satisfied and 23.8% partially satisfied. No meaningful differences was seen in the average grade of burnout intensity per

different economic situation statistically ($P_{\text{value}}=0.31$). 53.2% people were in morning shift, 2.4 % even in afternoon shift and 44.4% in cycle shift.

33.6% had work experience less than 10 years, 50.4% between 11-20 years and 16% between 21-30 years. 64.2% were in hospital and medical centers and 35.8% were in administrative offices. So, the most people in this research were chosen from medical field. From 500 people who attended in test, only 7.6% had referred to psychologist. There wasn't any record for referring to psychologist for 92.4% of them. Also, there wasn't any record for of tranquilizer medicine consumption in 89.2%. Only 10.8% had consumed these medicines. 53.06 were employed, 9.8% had employment contract, 34.6% had permanent job and 2% were doing employment plan (table 1).

From all of people, 64.4% didn't have any anxiety and insomnia. The rest showed some signs, 31.8% had mild signs of anxiety and insomnia and 3.8% had moderate signs. Sever anxiety hasn't been observed. Also, the meaningful difference wasn't observed between the average of anxiety and insomnia in women and men ($P=0.18$). Also, a relation between job and the rate of anxiety and insomnia in 2 groups of medical staff and non- medical staff were observed statically ($P=0.025$).

In disorders evaluation in terms of social function test GHQ-28, 28.2% were healthy and 71.8% had problems, 18.10 % had moderate signs and rest had mild signs. Between the average of disorder in social function of men and women with ($P=0.43$) the meaningful difference wasn't observed statistically. The relation between the job and the rate of social function between two groups of medical staff and non-medical staff ($P=0.5$) no meaning difference was observed statistically. 64.4% didn't have any signs of depression. The rest were symptomatic (35.6%).

Table1) Distribution of individual staff and job characteristics in population study

characteristic	Number(perc ent)	
sex	Woman	287(5.4)
	man	213(42.6)
age	<25 year	52(10.2)
	26-35year	202(40.4)
	36-60 year	247(49.4)
educational	MS and doctorate	52(7.7)
	permanent	266(52.7)
	treaty	55(11)
	diploma	132(26.4)
Employment statue	permanent	268(56.3)
	treaty	49(9.8)
	indenture	173(34.6)
Habitation statue	projective	10(2)
	Personal house	275(55)
	Rental house	116(23.2)
Economic statue	Father house	109(21.8)
	satisfied	133(26.6)
	dissatisfied	248(49.6)
shift	More or less satisfied	119(23.8)
	morning	266(53.2)
	evening	12(2.4)
Job experience	cyclical	222(44.4)
	<10year	168(33.6)
	11-20year	252(44.4)
	21-30 year	80(16)
Doing the job	Medical centers	321(64.2)
	Administration center	(35.8)179

(31%) had mild signs of depression and 6.6% had moderate signs. Sever signs of depression were observed in only 2% of people. No meaningful difference was observed statistically between women and men with moderate depression level ($P=0.17$).

The relationship between job and depression level in 2 groups of medical staff and non-medical staff wasn't observed statistically ($P=0.3$). The mean score of GHQ-28 in men was 19.9 with standard deviation of 8.9, in women was 18.8 with standard deviation of 8.01 and total average was 19.3 with standard

deviation of 8.4. Also, no significant difference was showed statistically between men and women in this study ($p=0.16$) No meaningful difference was observed statistically between the physical average of men and women ($P=0.25$).

No relationship between job and physical signs in 2 groups of medical staff and non medical staff ($P=0.3$) was observed statistically. In terms of mental health level, the result showed that the average obtained scale from GHQ-28 questionnaire was mentally unhealthy (32.6%) and mentally healthy (67.4%). In Maslesh test, from total individuals, 97% had mild emotional exhaustion and 3% had moderate emotional exhaustion. There wasn't severe type. A meaningful relationship between emotional exhaustion and sex was observed. So, emotional exhaustion was observed mostly in women. Also between the job frequency rate and emotional exhaustion in two groups of medical staff and non-medical staff, there wasn't any meaningful difference statistically ($P=0.4$).

16.9% of total men had depersonalization, while in women it was 10.5%. The severity was meaningful. No meaningful difference was observed based on frequency between the average of depersonalization in men and women ($P=0.01$), however, in terms of intensity it was meaningful ($P=0.03$).

Among all people, 92.6% had low personal sufficiency decline, 5% had moderate and 0.4% had sever one. There wasn't any relation

between lack of personal sufficiency and mental health problem.

The intensity of personal sufficiency decline in men and women was mild to moderate. No meaningful difference was observed between men and women personal sufficiency decline ($P=0.8$). Also, there was no meaningful difference statistically between job and personal sufficiency decline in two groups of medical and non –medical staff in terms of frequency level ($P=0.18$).

From all of the studied people in Maslesh test, the job involvement was low (67.2%) and the average was 32.8%. No sever involvement was observed .The total average scale between staff jobs and job involvement among administrative staff was 4 with standard deviation of 3.1 and was 4.3 with standard deviation of 3 in medical health group.

Also based on intensity, there was no significant difference in frequency scale between job and job involvement with average of 4.8 and standard deviation of 3.2 in two groups of medical staff and non –medical staff ($P=0.3$). In this study, the other findings were the relationship between professional burnout and mental health in all aspects. That means, the more burnout was rising the less mental health was decreasing (Table 2).

The X^2 test showed that the relation between sex and experience variables with burnout in aspect of emotional exhaustion and depersonalization was meaningful.

Table 2- Frequency distribution of personal and professional specialty in studied people

Dimension	emotional exhaustion (ample)	emotional exhaustion (intensity)	Depression alizarin (ample)	Depression alizarin (intensity)	Declining personal (ample)	Declining personal (intensity)	Job involvement (ample)	Job involvement (intensity)
Severe	- (0%)	- (0%)	6 (1.2%)	- (0%)	2 (0.4%)	- (0%)	- (0%)	- (0%)
Average	15 (3%)	16 (3.2%)	63 (6%)	66 (13.2%)	25 (5%)	27 (5.4%)	164 (32.8%)	165 (33%)
Low	485 (97%)	484 (96.8%)	431 (86.2%)	434 (86.8%)	473 (94.6%)	473 (94.6%)	336 (67.2%)	335 (67%)

The people, who had more experience, had less mental health. Furthermore, there is no meaningful relation between general health and demographic variables such as age, graduation and staff majors. However, there is a meaningful relation between general health and experience. (P=0.001)

The frequency rate between job and mental health among people participated in GHQ-28 test who were symptomatic, in two groups of medical staff and non-medical staff was meaningful (P=0.001), and declared that the mental health problems among medical staff were more than non-medical staff. The average score between administrators with standard deviation of active staff was more than non-administrative staff. Also the results showed

that the average score of emotional exhaustion in personal with the grade range (0-54) and standard deviation 6.4 was 8.4. The average score of depersonalization with grade range (0-30) and standard deviation 2.9 was 3.2, the average score of Maslesh personal sufficiency decline with score range (0-48) and standard deviation of 3.04 was 19.6 and average score of job involvement with score range (0-18) with standard deviation 11.1 was 31.4.

The total average score of burnout 31.4 with standard deviation of 11.1 in this research was observed.

The average score of Mental health with exhaustion as per ample 0.49 with (P<0.001) and average score of mental health with burnout as per intensity got 0.49 with (P=0.001)

Table 3) Correlation between burnout and mental health with subscales

Dimension of burnout subscales Ghq-28	emotional exhaustion (intensity)		Depression alizarin(intensity)		Declining personal (intensity)	
	r	sig	r	sig	r	sig
Summarization symptoms	0.51	<0.001	0.435	<0.001	-0.07	0.01
Anxiety and insomnia	0.579	<0.001	0.444	<0.001	0.059-	0.018
Disorder in social function	0.491	<0.001	0.445	<0.001	0.1	0.016
Depression	0.407	<0.001	.036o.36	<0.001	0.16	<0.001
Mental Health	0.614	<0.001	0.532	<0.001	0.013	0.01

Discussion

In this study, the mean level of emotional exhaustion was mild to moderate rate. There

was no relation between lack of personal accomplishment and mental health problems. Intensity of decreasing the personal sufficiency in men and women was from mild to moderate. It was lower than Talaie study which emotional exhaustion was showed 20.74, depersonalization 7.35 and personal accomplishment 25.66 (13).

One of the research had been done about burnout in Iran, was Fillian research. In his study, which was carried out on a significant number of nurses in health care, a numerous of nurses were suffering from burnout (14).

In one study performed by Ponset on the people in medical centers in 2007, 33% of individuals had severed burnout (15). The results of Esfandiari and colleagues that worked on professional burnout in state university of sanandaj, demonstrated that 0.7% of nurses had mild burnout, 96.4% had moderate burnout, 2.9% had sever burnout. The total average was higher than our survey (16).

Gaiters and colleagues had reported moderate levels of burnout in different aspects of emotional exhaustion, depersonalization and lack of personal efficacy, respectively 40%, 32% and 63%.

Franco had reported the rate of burnout low in personal sufficiency and depersonalization aspect and high in terms of lack of personal accomplishment. It was compatible with our finding in 2 first aspects (17).

Payami Borsari illustrated that in the case of burnout, the majority of nurses had emotional exhaustion in mild range, depersonalization in moderate and lack of success in sever range. The high level of lack of success needs more attention. This was only compatible with our first survey (18).

It seems the burnout in Talaie's research is for work pressure and night shift in hospital. The rate of burnout in this study was less than Talaie's study (13).

This rate was less than Kilfdder's survey which was done on psychiatric nurses as well (5). Brake and Kilfdder had reported, the average

rate of burnout in terms of depersonalization in men was higher than women meaningfully. This is compatible with present study. Depersonalization had been defined as mental separation of individual with his job, leading to negative reaction without feeling with no paying attention to service receivers. Depersonalization justification in men was because of having longer hours work comparing to women, having more contact with patients and more responsibility (18).

The results of Abdi Masuleh and Lopes Franco's research showed that the majority of individuals in this research were in low level in terms of emotional exhaustion and depersonalization and were in high level in terms of lack of individual efficiency which was compatible with our findings in two first purposes (5).

Also, Moghimian had reported that the rate of burnout in three purposes had moderate range. It was mentioned in higher level than our studies (17). In Talaie's study the average of burnout in women were higher than men (18). No meaningful relation was found between sex and burnout in Bahri Beanbag's study. In this survey, the meaningful relation between sex and burnout wasn't observed (20) The Rasulian study showed a low level of compatibility with higher ample of research units as well (21).

Maslesh and colleagues believe, sex isn't important predictor for burnout. In some research, the rate of burnout in women is higher than men and in some of them is vice versa (19). Also among of burnouts, It seems that men abstained more grade in depersonalization and women in emotional' exhaustion (7).

In this research, the meaningful relation between emotional emaciation and depersonalization and decreasing the function was observed. In some studies, the nurses that had less education had less job sufficiency.

Barrack and colleagues in America showed that there is direct relation between burnout and educations (20). Also, Haidari had confirmed these results (22). It seems that the role of

education in Iran has significant role to rise the people's phase. This survey illustrated that in lower level of education (Diploma) higher rate of burnout was observed. In one study that was done one Chinese nurses lower level of education was done with lower rate of personal sufficiency and younger nurses had more job burnout that doesn't have compatibility with our study. In Talaie's survey, personal sufficiency had relation to work experience. However, emotional exhaustion and depersonalization didn't have a meaningful relation with experience. Also in Esfandiari's study, in the case of sufficiency, people who had permanent job were in higher level. This had no compatibility with our study (22).

The rate of burn out in medical jobs was slightly higher than non-medical staff. This difference in Abdimasuleh and Talaie's research had been mentioned before that (23).

In this study, increases with increasing work experience, level of burnout in people. That had no comp ability with khaghanizadeh study. Also, this finding had no some relation with Esfandiari, Khakpoor and Payami, but has comp ability with Rasulian's study (23). He reported that the rate of burnout in dimension of emotional exhaustion in nurses with more than 20 years experience was higher. Also, in the group who work in shift, the burnout had been observed more. The people who have work shift, shows more job burnout (24) The relation between burnout and age wasn't observed in this study. In Talaie survey in medical staffs in Mashhad, the personal sufficiency didn't have relation to age, but increasing the age was along with decreasing emotional exhaustion. The first case had compatibility with our study (17).

In Boorsaie and Abdi studies had reported that there is no meaningful relation between shift work and burnout but Moghimian and Esfandiari have mentioned. In this study, it's observed the meaningful relation between work shift and burnout (16, 18).

In Ozort study in Turkish doctors, the personal sufficiency didn't have meaningful relation with age too.

So, it was expected that the nurse's mental health with more job experience is in more risk than the others that is consistent with our study (25). Sharma showed that Colorectal Surgeons Experiences more deprozonalization and less personal sufficiency relate to nurses (26), such this relation hasn't obtained in this study. The various studies have mentioned the lack of social life is an effective factor in staff's fatigue.

Moghimian and colleague's studies shows the relation was between argument with patient and his companions with rate of burnout, furthermore, the studies emphasize that good relationship between colleagues and enough relations with in charges has supporting role opposite of burnout and relate between staff with lower rate. Since burnout can lead to mental inability and has effective role on decreasing the personnel function. It's necessary attending to this issue by the relevant authorities (28).

Therefore, for prevention and decreasing the level of burnout, there are suggestions such as, it should be tried to attend to the relations between these variables in present research (17). The meanings should have more job support for staffs. The methods should be applied for declining mental stress in environment such as education in duty for staff's tension control workshop and training the skills of problem solving. So that, they would learn control methods of tension. It's better to prepare a situation for staff to attend to educational degrees and work experiences with different responsibility of management who is employed. Making opportunities and facilities for staffs such as recreational programs, sports, travelling and vacation help to improve their mentality and decrease the job stress.

Conclusion

So for prevention and decreasing the level of burnout, there are suggestions such as, it

should be tried to attend to the relations between these variables in present research (17). The meanings should have more job support for staffs. The methods should be applied for declining mental stress in environment such as education in duty for staff's tension control workshop and training the skills of problem solving. So that, they would be learn control methods of tension. It's better to prepare a situation for staff to attend to educational degrees and work experiences with different responsibility of management who is employed. Making opportunities and facilities for staffs such as recreational programs, sports, travelling and vacation help to improve their mentality and decrease the job stress.

Footnotes

Acknowledgments:

With special thanks to all Kashan University of Medical Sciences and hospitals, staffs that participate in this study and help us fill out those questionnaires during the project.

Conflict of Interest:

The authors declare no conflict of interest.

References

- Alparslan O, Doganer G. Relationship between levels of burnout of midwives who work in Sivas Turkey province center and identified socio-demographic characteristics. *Int J Nurs Midwifery* 2009;1(2):19-28.
- Maslach C, Jackson SE. *Maslach Burnout Inventory Manual*. 2nd ed. Palo Alto: CA: Consulting Psychologists Press, Inc; 2006. P. 3-5.
- Farber BA. *Introduction: A critical perspective on burnout. Stress and burnout in the human service Professions*. New York: Elmsford; 2008. P. 5-6.
- Moqadasi J. Relationship between burnout and mental health among nurses. [MSc Thesis]. 2008;3(2)7-10. (Persian)
- Abdi Masooleh F, Kaviani H, Khaghanizade M, Momeni Araghi A. The relationship between burnout and mental health among nurses. *Tehran Univ Med J* 2007;65(6): 65-75. (Full Text in Persian)
- Saatchi M. Organizational factors associated with burnout. *Textile Workers of Tehran, Institute of Social supplying labor*; 2005. P. 65-67. (Persian)
- Maslach C. Burnout: A social psychological analysis. *Hum Behav* 2002;5(4):16-22.
- Engel Brecht S. Motivation and Burnout in Human Service Work the Case of Midwifery in Denmark. [PhDThesis]: Copenhagen; 2006. P. 25-26.
- Goldberg R, Boss RW, Chon L, Goldberg J, Mallon Kwando Moradzadeh D, et al. Burnout and its Correlates in emergency physicians: four years experience with a wellness booth. *Acad Emerg Med* 2007;5(1):1156-64.
- Williams Wyatt worldwide. *Staying work 2002/2003 building on disability management* Washington, D.C. Watson Wyatt Worldwide. 2005;6(4):4-5.
- Yaghoobi Nia F, Mazloom SR, Salehi Ghadrly J, Esmaili H. Study of the relationship between self-esteem and burnout in nurses of hospitals of Mashad University of Medical Sciences. *J Sabzevar Univ Med Sci* 2003;10(3):73-75. (Full Text in Persian)
- Najafi MH, Aminian AH, Ghomizadea A, Noorani FA. A Study on psychological health of first year university students in Iran. *Iran J Psychiatry Behav Sci* 2009;3(2):47-51. (Full Text in Persian)
- Talaei A, Mohammad Najd M, Samar AA. Burnout in staffs of health care centers in Mashhad. *Q J Fund Mental Health* 2008;9(35-36):133-44. (Full Text in Persian)
- Filian E. Evaluation of burnout and its correlation with coping mechanisms in nurses of educational hospitals of Tehran. [MSc Thesis]. Tehran University of Med Sci; 1993. 7-9. (Persian)
- Ponset A, Aronson E. Career burnout: causes and cures, in professional burnout: recent developments. In: Schaufeli WB, Maslach C, Marek T, Editors. *Professional Burnout: Recent Developments in Theory and Research*. London: Taylor & Francis; 1996. P. 2-3.
- Esfandiari GHR. Survey of the rate of occupational burnout between nursing staff of Santander hospitals affiliated to Kurdistan University of Medical Sciences. *J Kurdistan Univ Med Sci* 1998;6(21):1-5. (Full Text in Persian)
- Moghimian M, Bahri B. The survey of relationship between job burnout and health status of midwives and nurses. *J Raze Behzistan* 2002;9(2):1-26. (Full Text in Persian)
- Payami Boo Sari M. Effect of self-care program on the self-esteem of multiple sclerosis patients. *Sci J Zanjan Univ Med Sci* 2002;10(40):47-51. (Full Text in Persian)
- Henry JD, Henry LS. The self-caring nurse. Strategies for avoiding compassion fatigue and burn out. *Okla Nurse* 2004;49(1):9-12.
- Bahri Bynabaj N, Mqymyan M, Atarbashy M, Qarcheh M. Investigated the relationship between burnout and mental health nursing and midwifery professions. *Horizon Med Sci* 2003;9(1):99-104. (Full Text in Persian)

21. Rasoolian M, Elahi, F, Ebrahimi A. Correlation between burnout and personality Characteristic in nursing. *Think Behav* 2005;9(4):18-24. (Full Text in Persian)
22. Haidari, H, Mardani Hamooleh M. Prevalence of burnout and its associated factors in a selected hospital staff Homaye Salamat. *Res J* 2011;3(5):38:69. (Full Text in Persian)
23. Koustelios A, Tsigilis N. The relationship between burnout and job satisfaction among physical education teachers:a multivariate approach. *Eur Physic Educa Rev* 2005;11(2):189-203.
24. Wu, S. Zhu, W. Wang Z, Wang, M. LAN Y. Relationship between burnout and occupational stress among nurses in China. *J Adv Nurs* 2007;59(3):33-39.
25. Ozyurt A, Hayron O, Sur H. Predictors of burnout and job satisfaction among Turkish physicians. *QJM* 2006;99(3):161-9.
26. Sharma A, Sharp DM, Walker LG, Monson JR. Stress and burnout among colorectal surgeons and colorectal nurse specialists working in the National Health Service. *Colorectal Dis* 2008;10(4): 397-406.
27. Hosseini M, Sharifzade GH, Khazaei T. Occupational burnout in Birjand dentists. *J Dent Med* 2011;24(2):113-120. (Full Text in Persian)
28. Yong MS, Pan. SM, Yang MJ. Job strain and minor psychiatric morbidity among hospital nurses in southern Taiwan. *Psychiatry Clin Neurosci* 2004;5(8):636-41.