## Original Article

# Burnout Comparison between Clinical and Basic Sciences Faculty of a Medical School and Evaluation of Related Factors

**Hourvash Haghighinejad[1], Peyman Jafari[2], Mehrdad Rezaie[1,3], Majid Farrokhi[1], Mahtab Jafari[4], Mani Ramzi[4*]**

### Abstract

**Objective:** It has been shown that clinical practice may be a risk factor for job burnout. On the other hand, annual income may have a protective effect on job burnout. Clinical faculty in contrast to basic sciences faculty members have higher income but are involve in clinical practice. Comparison between these two groups can clarify which factors have greater influence on burnout. As a second aim for this study, reliability and validity of the Persian version of Maslach burnout inventory general survey (MBI-GS) were evaluated as well.

**Method:** This cross-sectional study was conducted at Shiraz Medical School in Iran and a total of 241 faculty members were randomly selected and burnout was measured by the Persian version of the Maslach burnout inventory general survey (MBI-GS).

**Results:** Comparison of burnout between the two groups indicated that clinical faculty showed significantly higher scores in the exhaustion dimension compared to the basic sciences faculty (p value = 0.017) but no significant differences were found between the two groups in other dimensions. Job satisfaction and income satisfaction were negatively correlated with exhaustion and cynicism dimensions, and job satisfaction was positively associated with professional efficacy (p value > 0.05).

Internal consistency of the questionnaire was acceptable (α=0.77). Scaling success rate for discrimination and convergent validity were 100% except for convergent validity in the cynicism subscale. Correlation of all questions with their dimensions was equal to or more than 0.4 with the exception of item 13 in the cynicism subscale.

**Conclusion:** Clinical faculty had higher burnout than basic sciences faculty especially in the exhaustion dimension. It has also been shown that income and job satisfaction are the most important factors which can predict professional burnout in medical faculty members. It is important for administrative and organizational decision makers to improve job engagement and decrease job abandonment. This study largely confirmed the 3-dimensional structure of the Persian version of MBI-GS.

**Key words:** *Faculty; Income; Job Satisfaction; Professional Burnout; Questionnaire*

**1.** Department of Family Medicine, Shiraz University of Medical Sciences, Shiraz, Iran.
**2.** Department of Biostatistics, Shiraz University of Medical Sciences, Shiraz, Iran.
**3.** Department of Pediatric Medicine, Shiraz University of Medical Sciences, Shiraz, Iran.
**4.** Hematology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.

**\*Corresponding Author:**
Address: Hematology Research Center, Department of Hematology and Oncology, Shiraz University of Medical Sciences, Shiraz, Iran, Postal Code: 7193711331.
Tel: 98-917 3145578, Fax: 98-71 36474301, Email: ramzim@sums.ac.ir

The term "burnout," introduced by Brudenberger in 1974, points to "becoming exhausted by making excessive demands on energy, strength, or resources". Burnout is a psychological syndrome that involves personality deterioration, emotional exhaustion, and decrease in level of personal competence. In contrast to its negative outcome, job burnout is a consequence of perfectionism. People who burnout are people struggling to do their job perfectly, but when they are not provided with anappropriate environment and resources, they become frustrated (1, 2). Burnout is the result of constant job stressors and a mismatch between the job and the worker (3, 4).

Prevalence of a stress-related condition such as burnout in a general worker varies between 19-30%. The prevalence in physicians is much higher ranging between 25% and 75% in some clinical specialists (3). Burnout can lead to an increase in job abandonment and absenteeism rates, a reduction in organizational commitment and a decline in job performance. Other side effects are mental and physical changes such as general fatigue, sleep and eating disorders, headache and emotional instability (5, 6). Various factors are involved in burnout such as excessive mental workload, reduced autonomy, responsibility for things over which they have no control, and problems related to work-life balance, lack of success, sense of organizational inefficiencies, lack of promotion opportunities and strict and hard organization rules and regulations (7-9).

It has been shown by previous studies that there is a negative relationship between burnout and job satisfaction. On the other hand, organizational structure and processes can have adverse effects on both (9-13). Burnout syndrome is more common in those who engage in frequent and in-depth interaction with other people such as teachers, social workers, police officers as well as health care workers (14).

A previous study shows that in comparison with other social services, healthcare workers and teachers reported the highest level of burnout (15).

Physicians are in direct contact with patients, so they must have the knowledge, skills and attitudes to apply appropriate communication skills to humans and consider ethical and legal issues (16).

Many studies investigated predicting factors for burnout in healthcare workers. Disorganization, unpredictable situations, high workload, lack of control, and limited time frame for assessing the impact of therapeutic interventions are considered as stressful issues for nurses and doctors (16, 17).

Shanaflet et al. examined 465 internal faculty members at a medical university center. The majority (68%) stated that taking care of patients was the most satisfactory aspect of their careers. Other priorities were interest in research (19%), education (9%), and management, (3%) respectively. The amount of time spent working on the physician's preferred activity has a strong reverse relationship with exhaustion (18).

In another study, more than half of academic chairpersons of anesthesia reported moderate or high level of burnout. Low job satisfaction and lack of adequate support from spouse/significant others were the main independent predictors (19).

Faculty members of medical universities are multitasking personnel who are all involved in teaching students and conducting research. Basic sciences faculty members are more involved in teaching and research and have a fixed moderate salary. Clinical faculty members are more involved in clinical practice and have higher level of income including a fixed salary and payment per case. It has been shown that clinical practice may be a risk factor for job burnout. On the other hand, annual income may have a protective effect on job burnout (20). As far as we know no comparison has been made between these two groups in previous studies.

Various tools have been used to measure burnout in various studies. Due to diversity of jobs as well as differences in performance of faculty in medicine, it is important to use a questionnaire that considers all these aspects and allows comparison between different groups. Maslach's Burnout inventory is the most common used questionnaire to measure burnout. It was designed in three areas including the Maslach Burnout in Educators Survey (MBI-ES), the Maslach Burnout in Human Services Survey (MBI-HSS), and the Maslach burnout inventory general survey (MBI-GS). Maslach's Burnout inventory -general survey (MBI-GS) was a measure that was not affected by type of occupation and is applicable in the general population including teachers and health workers (21). But in Iran, this version of the questionnaire has attracted less attention.

As far as we know, the only study that evaluated the validity and reliability of the Persian translation of this questionnaire was conducted in a population that did not include teachers and human services staff (22). Also, a Shamloo et al. study showed that the best fit model was achieved when item 13 was deleted. Lower validity of some questions as well as the target population which is different from our study population, led us to translate this questionnaire again and evaluate the validity and reliability of the translated version.

Due to different in nature of duties of clinical and non-clinical professors of the medical school, as the first aim of the present study, it was decided to compare burnout in clinical and basic sciences faculty members and find out the factors that are more related to their burnout. In order to evaluate burnout, we need to use a valid and reliable Persian version questionnaire so as the second aim, we decide to evaluate psychometric property of Maslach's Burnout inventory -general survey (MBI-GS) in faculty members of a medical school.

## Materials and Methods

### Participants

This analytical cross-sectional study was conducted in 2018 at Shiraz Medical School in Iran. Total faculty members in the medical school was 480. After removing people who did not qualify for the study due to the inclusion and exclusion criteria, the total number was 459 persons. The sample size was calculated by using PASS 11to estimate the sample size for comparing two means. According to a previous study, standard deviation was 1.5 (23) and the significant difference for researchers (d) was 1. According to previous studies, response rate was estimated to be 50%. Also, sample allocation ratio was 1:4 (the proportion of clinical to basic sciences faculty members in the medical school). The sample size was equal to 241. Proportionate Stratified Random Sampling was used to select a total number of 241 from the list of the faculty members. Criteria for Inclusion in the study were Academic faculty members with a degree greater than Master of Sciences working at Shiraz University of Medical Sciences who accepted to cooperate in the study. Exclusion criteria include: not working more than three months in the past year and studying simultaneously in Fellowship or PhD courses. Participants were not aware of the specific hypothesis of the study in order to avoid bias in the study. It was also explained that the questionnaires were anonymous and all participant information would remain confidential. The questionnaires were coded and the names were not included in the questionnaire. The codes were kept confidential by the researcher. Approval for this study was given by the Ethics Committee of Shiraz University of Medical Sciences with ethical code: IR.sums.med.rec.1396.s301

### Procedure

The MBI-GS questionnaire was translated to Persian and its content validity was checked as was explained later. Then the questionnaire along with a data collecting form were presented to selected participants who completed informed consent forms.

Data collection forms include demographic and professional information such as age, sex, and race, number of children, years of work experience as well as a question about job satisfaction (Are you satisfied with your job?); a question about income satisfaction (Are you satisfied with your income?); work time at home and work place; the economic status and recent use of antidepressants. A question was also asked to determine the effect of others' perceptions on participants' burnout: "I feel nobody values my work". Finally, an open question was asked about the causes of fatigue from the participants' point of view.

In case of non-respondent, three follow-ups were made and questionnaires were presented to them again.

### Measure

The original Maslach burnout inventory (MBI) was developed by Christina Maslach and Susan E. Jackson in the English language. Three versions of this inventory are available which were designed to measure burnout in different populations (21). The Maslach burnout inventory general survey (MBI-GS), which was used in this study, is one of the MBI measures. It was designed for measuring burnout in the general population irrespective of their jobs. This is a self-administered questionnaire. It takes about 5-10 minutes to complete (21). The questionnaire consists of 16 items and 3 subscales: exhaustion (Cronbach's a: 0.91), cynicism (Cronbach's a: 0.79), and professional efficacy (Cronbach's a: 0.82). Three diminutions of the survey are strongly related to each other: cynicism is highly related to Exhaustion ($0.44 < r < 0.61$) and also negatively related to personal efficacy ($-0.38 < r < -0.57$) (24). All items were scored by 7 points frequency rating ranging from 0 (for never) to 6 (for everyday). For each subscale, the average score was calculated. The higher scores in Exhaustion and Cynicism and the lower score in Professional efficacy indicate more burnout (21).

Measure translation and preparation: The English questionnaire was first translated into Persian by a fluent English and Persian speaker. Then, the original and translated questionnaires were presented to five psychiatrists or psychologists of Shiraz University of Medical Sciences to confirm its content validity.

To measure the content validity, the content validity index (CVI) and content validity ratio (CVR) was used. CVI can be accepted as a modified kappa statistic (25). To calculate this widely-used index, experts were asked to rate the "relevance", "clarity" and "simplicity" of each item by3 different 4-point Likert scales. CVI on each item was calculated by the number of experts giving a rating of either 3 or 4, divided by the number of experts—that is, the proportion in agreement about "relevance", "clarity" and "simplicity". The rate of 0.78 or more on each item means that the content validity of the scale is acceptable (26, 27).

For determining CVR, the experts were asked to score each item based on a 3 points Likert scale (essential, useful but not necessary and not necessary). The formula for calculating CVR is $CVR = (Ne - N/2)/(N/2)$ where Ne is the number of experts who have selected the essential option and N is the number of experts. The acceptable numeric value is determined by the Lawshe Table. For example, for 5 raters, as in our study, the value 99% and more is acceptable (28). Then the Persian questionnaire was translated to English by a person with master's degree in English. There was no significant difference with the original questionnaire.

### Statistical analysis

Data were analyzed by SPSS version 20. Descriptive statistics were used to summarize data. For comparison between clinical and basic sciences faculty members independent T-test was used. Regression analysis was used to predict the effect of different factors on burnout and to adjust for covariate that can affect the burnout

subscales scores. P-value less than 0.05 was considered as statistically significant.

For evaluating validity of the questionnaire content, construct and structural validity were calculated. The Content Validity Index (CVI) and Content Validity Ratio (CVR) were used to determine content validity. Construct validity was evaluated by convergence and discrimination validity. For this purpose, spearman correlation coefficient was used. Varimax factor analysis was used to evaluate the structural validity. Another aspect of validity is discriminative validity which in the present study is evaluated by comparing MBI-GS subscales in the two groups of faculty members (29). Reliability of the questionnaire was evaluated by Cronbach's alpha.

## Results

The response rate in our study was 93% (225 of 241). Samples consisted of 151 men (67%) and 72 women (32%), and three individuals did not specify their gender. The mean age of participants was 45. 8 ± 8. 6 years.

Totally, 225 faculty members participated in the study from which 41 persons were basic sciences faculty members and 184 persons were clinical faculty members. The mean age was 48 and 45 years, male proportion was 56% and 70% and work experience was 16. 5 and 14 years in basic sciences and clinical faculty members, respectively. There was no difference between the two groups in terms of these factors. Other characteristics and investigated factors in the two groups have been compared in Table 1.

Burnout in faculty members and its related factors

Comparison of burnout between the two groups showed that the difference was significantly higher in clinical faculty members (MBI-GS score = 2. 2) in comparison to basic science faculty members (MBI-GS score = 1. 44) (P value = 0.017) but no significant differences were found between the two groups in other dimensions. (P value >0.05.

In regression analysis, the relationship between these 13 investigated factors (including: age, gender, academic ranks, marriage, employment type, work time, mean work experience, number of children, housing ownership, income satisfaction, job satisfaction and, total working hours per week, working hours from home) and the three dimensions of burnout were evaluated separately by multiple regression models. Seven factors which separately have significant association with a dimension including academic rank, work hours from home, total working hours per week, job satisfaction and income satisfaction, number of children and the study group (clinical and basic sciences faculty members) were entered into the final stepwise regression analysis models. Finally, job satisfaction and income satisfaction were negatively correlated with exhaustion and cynicism dimensions, and job satisfaction was positively associated with professional efficacy.

Regression model assumptions were checked and all were satisfied. In exhaustion model Durbin-Watson: 1. 8 which is near 2 means the variables are independent. Histogram and P–P plot for residual showed normal distribution. Anova test was significant (p value<0.001) which indicate there was a linear relationship between variables. Standardized residue was between -2. 2 to 2. 6 which indicated there was no outlier data.

Regression model assumptions were met in model for cynicism. Durbin-Watson: 2. Histogram and P–P plot for residual showed normal distribution. Anova test was significant (p value<0.001). Standardized residue was between -1. 9 to 2. 9 which indicate there was no outlier data.

In regression model for professional efficacy, regression model assumptions were met: Durbin-Watson: 1. 98 which is near 2, histogram and P–P plot for residual showed normal distribution. Anova test was significant (p value: 0.001) and standardized residue was between -2. 9 to 2. 1 which indicated that there was no outlier data. The results are summarized in Table 2.

Also, the question, "I feel no one values my work" was significantly correlated with all three dimensions of burnout (p value <0.003).

In response to the open question about the causes of fatigue from the participants' point of view, the majority of overall participants identified workload, incorrect work structure (37%) and mismanagement (34%) as the main causes. There was no statistically significant difference between opinions of the two groups (P value = 0.12). Figure 1 summarizes the overall category of causes from the participants' point of view.

Questionnaire validity and reliability:

Content validity ratio (CVR) was about 99% and content validity index (CVI) for all questions was equal to or more than 80% which indicated acceptable content validity of the questionnaire. The internal consistency of the questionnaire was acceptable ($\alpha$=0.77). All subscales show Cronbach's alpha above 0.73. On the cynicism scale, deleting Question 13 increases the Cronbach's alpha to 0.82. The results of convergent and discriminative validity as well as Cronbach's alpha coefficients are shown in Table 3.

Scaling success rate for discrimination and convergent validity were 100% except for convergent validity in cynicism subscale. Correlation of all questions with their dimension was more than other dimensions of the questionnaire. Correlation of all questions with their dimensions was at least 0.4 with the exception of item 13 in the cynicism subscale. Correlation coefficient of item 13 was 0.39 with the total score of the subscale. As a rule of thumb, the rotate factor load of less than 0.4 in a factor was considered to be inappropriate. Factor load value of 0.4 or above was considered to be suitable (30).

Varimax factor analysis was used for construct validity. The results show that all of the items of MBI-GS Persian version have loading between (r = 0.32) to (r = 0.86) with their relevant subscale indicating that all

dimensions had appropriate structure (Table 4). Except for item 9 which has higher loading with factor 1 (exhaustion), other items have higher loading within their own subscales. However, factor load of item 9 is equal to 0.4 in its factor which is appropriate but maybe it would be better to categorize it in the factor 1 subscale.

The Kaiser-Meyer-Olkin (KMO) index was 0.83, exceeding the benchmark value of 0.6 (31) indicating adequacy of the sample size. The Bartlett's Test of Sphericity ($\chi 2 = 1377. 3$, $p < 0.001$) was statistically significant, indicating a strong relationship among the variables making it appropriate in use of factor analysis (32).

**Table 1. Comparison of Characteristics in the Two Study Groups (Clinical and Basic Sciences Faculty Members)**

| Characteristics | | Basic sciences faculty members No. (%) | Clinical faculty members No. (%) | P value |
|---|---|---|---|---|
| Gender | Male | 23(56%) | 128(70%) | 0.6 |
| | Female | 18(44%) | 54(29. 3%) | |
| Academic ranks | Assistant professor | 17(41. 5%) | 104(56. 5%) | 0.17 |
| | Associate professor | 13(31. 7%) | 43(23. 5%) | |
| | Full professor | 11(26. 8%) | 34(18. 6%) | |
| Marriage | Single | 8 (19. 5%) | 14 (7. 6%) | 0.04 |
| | Married | 33 (80.5%) | 162 (90%) | |
| employment | Permanent | 35(87. 5%) | 135 (73. 8%) | 0.65 |
| | contract -nonpermanent | 5(12. 5%) | 48(26. 2) | |
| Working time | Full time | 36(87. 8%) | 161(87. 5%) | 0.54 |
| | Part time | 3(7. 3%) | 16(8. 7%) | |
| Scientific degree | Specialist | 5(12. 2%) | 62(33. 7%) | |
| | Subspecialist | 1(2. 4%) | 53(29%) | |
| | fellowship | 0 | 54(29. 3%) | |
| | PhD | 28(68. 3%) | 4(2. 2%) | |
| | others | 7 (17%) | 11 (6%) | |
| mean age, y(min-max) | | 48 (32-65) | 45 (25-78) | 0.07 |
| mean of work experience, y (min-max) | | 16. 5 (1-35) | 14 (1-43) | 0.09 |
| Number of children | 0 | 4(9. 8%) | 25(13. 7%) | 0.9 |
| | 1 | 14(34%) | 57(31%) | |
| | 2 | 16(39%) | 73(40%) | |
| | 3 or more | 5(12%) | 17(9. 3%) | |
| race | Fars | 36(87.8%) | 166(90%) | 0.8 |
| | Others | 4(10%) | 16(9%) | |
| Home Ownership | Ownership | 33(80.5%) | 149(81%) | 0.7 |
| | Tenancy | 7(17%) | 29(15.8%) | |
| | Community Property | 1(2.5%) | 5(2.7%) | |
| Antidepressant usage | yes | 4(9.8%) | 9(5%) | 0.26 |
| | no | 37(90.2%) | 173(94%) | |
| Income satisfaction | Satisfied or relatively satisfied | 48(78%) | 125(68. 1%) | 0.036 |
| | Low or dissatisfied | 8(19.5%) | 56(3 0.4 %) | |
| Job satisfaction | Satisfied or relatively satisfied | 38(95%) | 169 (92%) | 1 |
| | Low or dissatisfied | 2(5%) | 13(7%) | |
| Work in own office | Yes | 1(2.4%) | 19(10.3%) | |
| | No | 29(70.7%) | 89(48.4%) | |
| | Missing | 11(26. 8%) | 76(41.3%) | |
| Professional | mean total h/wk (min-max) | 55 (11-90) | 60 (7-120) | 0.125 |
| | Physically present at work, mean h/wk (min-max) | 20(2-45) | 13 (0-44) | <0.001 |
| | Working from home, mean h/wk (min-max) | 35 (5-60) | 47 (5-90) | 0.001 |

**Table 2. Regression Analysis of Relationship between Evaluated Factors and Burnout Dimensions in Clinical and Basic Sciences Faculty Members**

| Subscale | Variable | β | SE (β) | P value |
|---|---|---|---|---|
| Exhaustion | Job satisfaction | -2.33 | 0.63 | <0.001 |
| | Income satisfaction | -0.88 | 0.28 | 0.002 |
| Cynicism | Job satisfaction | -1.83 | 0.48 | <0.001 |
| | Income satisfaction | -0.48 | 0.2 | 0.02 |
| Professional efficacy | Job satisfaction | 0.9 | 0.3 | 0.001 |

**Table 3. Internal Consistency, Convergent and Discrimination Validity of Maslach Burnout Inventory General Survey (MBI-GS)**

| Subscale | Item | Cronbach's alpha | Convergent validity | | Discrimination validity | |
|---|---|---|---|---|---|---|
| | | | Range of correlation | Scaling success (percent) | Range of correlation | Scaling success (percent) |
| Exhaustion | 5 | 0.91 | 0.74-0.9 | 5/5 (100) | 0.23-0.59 | 10/10 (100) |
| Professional efficacy | 6 | 0.78 | 0.58-0.74 | 6/6 (100) | 0.05-0.3 | 12/12(100) |
| Cynicism | 5 | 0.73 | 0.39-0.79 | 4/5 (80) | 0.024-0.69 | 10/10 (100) |

**Table 4. Maslach Burnout Inventory General Survey (MBI-GS) Items loading after Varimax Rotation**

| | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| 1. emotionally drained | 0.840 | | |
| 2. feel used up | 0.860 | | |
| 3. feel tired in the morning | 0.849 | | |
| 4. working is a strain | 0.858 | | |
| 5. feel burnout | 0.753 | | |
| 6. can solve the problems | | 0.482 | |
| 7. making an effective contribution | | 0.641 | |
| 8. good at my work | | 0.817 | |
| 9. feel exhilarated | | 0.834 | |
| 10. accomplished worthwhile things | | 0.796 | |
| 11. confident about my effectiveness | | 0.626 | |
| 12. less interested in work | | | 0.558 |
| 13. less enthusiastic | 0.721 | | 0.400 |
| 14. not be bothered | | | 0.320 |
| 15. more cynical | | | 0.832 |
| 16. doubt the significance | | | 0.820 |
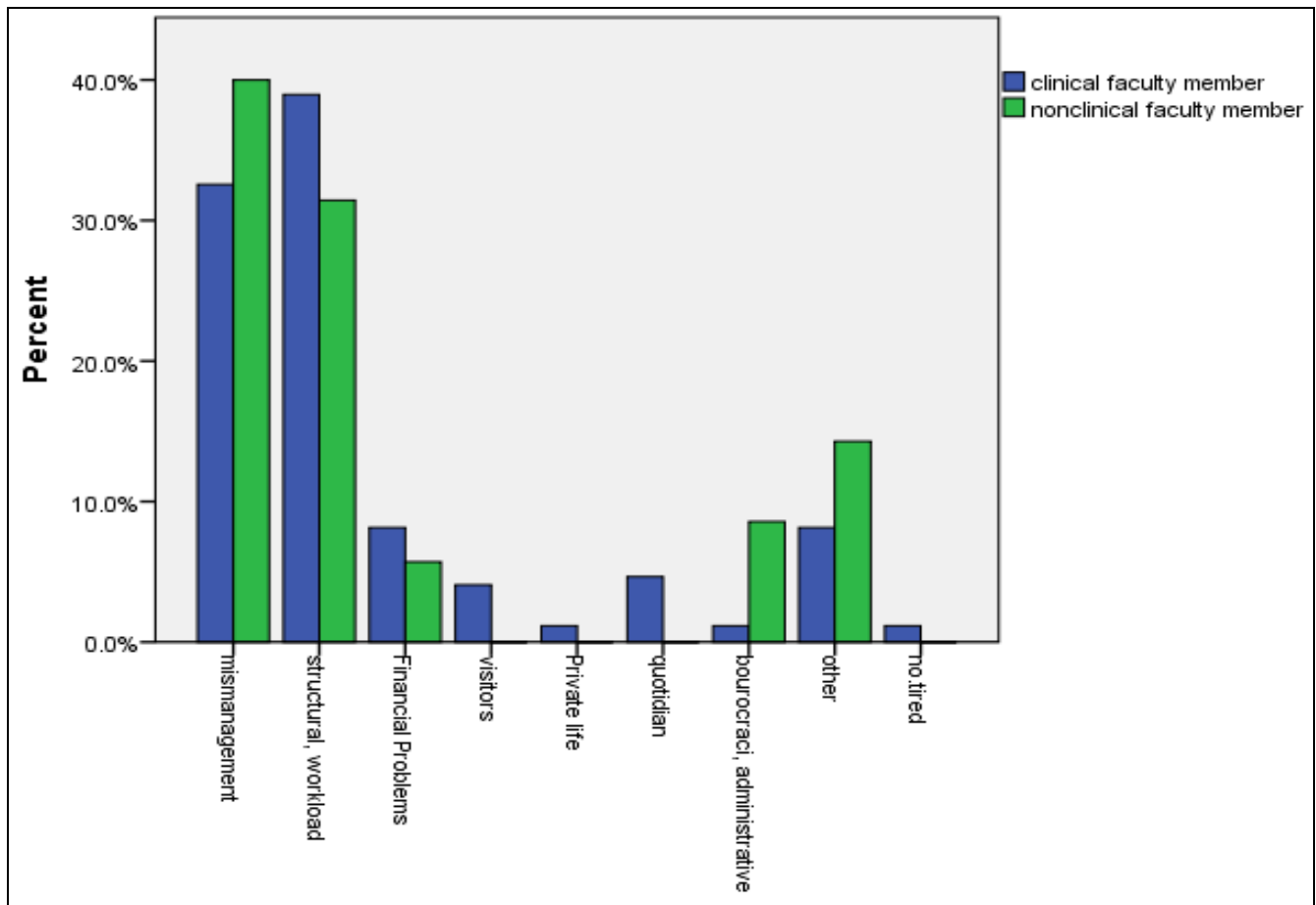
**Figure 1. Participants' Opinions about the Main Causes of Job Fatigue and Their Percentage in Each Group**

## Discussion

Burnout, a psychological syndrome, is more common in jobs that deal directly with people such as teachers and medical doctors. Medical university faculty members are multitasked workers who are at an increased risk for burnout. Due to difference in nature of duties expected of clinical and non-clinical professors of a medical school, there are different reasons for burnout in these two groups who are working professionally in the same University. This study aimed to compare burnout level between these two groups of faculty members. Also, in this study, effect of 13 important factors, with their efficacy on burnout investigated in previous studies, were evaluated simultaneous by three regression analysis models. As the second aim, we investigated the validity and reliability of the Persian version of Maslach burnout inventory general survey (MBI-GS) in faculty members. Comparison of burnout between the two groups showed that the difference was statistically significant in exhaustion dimension. In regard to factors which have strong association with burnout, the results showed that job satisfaction and income satisfaction were negatively correlated with exhaustion and cynicism dimensions, and job satisfaction was positively associated with

professional efficacy in the medical school faculty. From the participants' point of view, majority of participants identify the workload and dysfunctional work structure and organization mismanagement as the main causes of burnout. Factor analysis, convergent and discriminative validity suggest that the 3-dimensional model is the most appropriate for the Persian version of MBI-GS questionnaire.

The present study showed that the score of the exhaustion dimension was significantly higher in clinical faculty members than basic sciences faculty members. It has been shown that exhaustion is the first stage in the burnout process, and it provides a critical point for administrative intervention (33). So it is not surprising that the first sign of burnout resulted in greater difference between the two groups. Greater burnout in clinical faculty members is consistence with other studies that suggest higher burnout scores in physicians than other occupations (34). On the other hand, the results showed that income satisfaction was significantly lower in clinical faculty members (p = 0.036). It is noteworthy that despite higher incomes of clinical faculty members, their satisfaction was lower. One of the probable causes is organization mismanagement which causes delay and reduction in expected payment.

Many factors were examined to find factors that can affect burnout in faculties. Finally, 7 out of 13 studied factors showed significant relationship with one of the dimensions in burnout. These 7factors were working hours at home, working hours per week, job satisfaction and income satisfaction, number of children, scientific level and the study group (clinical and basic science). Most of these factors showed significant relationship with burnout when individually evaluated in previous research (16-20). We performed a pooled multiple regression analysis (among total faculty members) to identify factors independently associated with burnout after adjusting for these 7 factors. Amongst all, job satisfaction and income satisfaction were negatively correlated with dimensions of exhaustion and cynicism, and job satisfaction was positively associated with personal self-efficacy. This suggests that all other factors can contribute to burnout through job and income satisfaction. The association between these two factors and burnout is so strong that job and income satisfaction can counteract the effects of other factors and eliminate them from the equation.

This result is consistent with previous studies in some aspects. Surgenor et al. showed that a physician who works for longer hours and has less job satisfaction, experiences more burnout (35). A study by Ogresta showed that pay and rewards satisfaction is strongly correlated with burnout, and dissatisfaction with the work climate was a significant risk for lower levels of personal accomplishment (36). Another study on healthcare providers in Iran concluded that there was strong association between burnout and dissatisfaction with income (37). The drawback to this conclusion is whether job dissatisfaction first arises and causes burnout or whether occupational burnout causes job dissatisfaction. The results of the open-ended question about the main cause of work fatigue which has been asked from participants in this study suggested that most participants believed that mismanagement and dysfunctional organizational structure were the main causes of fatigue. Perhaps this indicates that dissatisfaction occurs initially and then leads to burnout.

In a study by Golub et al. on otolaryngology faculty stated that one of the strongest predictors of burnout is dissatisfaction with the balance between personal and professional life (38). Similarly, we concluded that the other factors have less effect on burnout.

The Golub study suggested that emotional exhaustion in women was significantly higher. In the present study, gender was not a fundamental factor that have influenced burnout. This in consistency can be due to different sampling techniques. Our participants were selected randomly and multiple follow-ups were conducted to receive a response. The Golub study sampling was conducted through a mailed survey and it is probable that women with more burnout are more interested in talking about their problem than men (38). A study by Maslach, Schaufeli and Leiter (2001) also found that exhaustion in women is slightly higher, and depersonalization is slightly lower in women than men. The difference in both cases was small (7). So the other causes of this inconsistency can be due to a smaller sample size in the present study which cannot find slight differences.

It is worthy of mention that a study on working populations other than human services did not show consistent significant differences in males versus females (33).

Shanafelt et al. stated that the majority of physicians considered "caring for patients" to be the most satisfying aspect of their job and that the amount of time spent on preferred physician activity was inversely correlated with the risk for burnout (18). In the present study, the amount of time spent on preferred activity had no significant correlation with the burnout score in any of the three dimensions. This means that burnout in our setting was more related to other factors than time spent on preferred activity.

Regarding the validity and reliability of the MBI-GS questionnaire, Shamloo et al. studied the validity and reliability of another Farsi translation of the MBI-GS questionnaire in a population other than teachers and human services staff (22). In the study, the factor analysis showed that loading ranged from 0.52 to 0.80, with the exception of item 13 with loading of 0.158. In our study, structural validity of the questionnaire indicated 3-dimensional structure is appropriate for the questionnaire. The loading value was between 0.4 and 0.86, except for item 13, which had loading of 0.32 in its dimension. Greater loading may be due to better translation in our version. However, item 13 has a lower correlation with its dimension than other items although this correlation was higher in its dimension relative to other dimensions. Also, in convergent validity, item 13 shows lower correlation coefficient with other items in its dimension so it is dropped from the cynicism subscale. It seems that in our culture, most people want to "do their job and not be bothered" in most situations and positive response does not mean burnout in most cases.

Confirmatory factor analyses by three studies in South Africa showed low loadings of item 13 of the MBI-GS (39-41). Campbell and Rothmann also suggested that item 13 should be omitted from the questionnaire (41, 33). This is consistent with the study of Schutte et al. (2000), where this item was also excluded in a cross-national study on the factorial validity of MBI-GS. The author proposed that the ambivalent nature of the item is the problem source. One can burnout and perceive social isolation so he or she asks "not be bothered". On the other hand, one may want to concentrate on her or his work and again wants "not be bothered"" (42).

Cronbach's alpha was about 0.77 which was a little lower than internal consistency in the Shamloo study (α=0.87) (22) but quite acceptable. Again, omitting item 13 increased the internal consistency of the cynicism

subscale from 0.73 to 0.82. Item 9 shows higher loading with exhaustion subscale but has also acceptable loading with its associated subscale. This inconsistency may be due to culture or it may be due to translation. However, in our culture, less enthusiastic results are from fatigue and exhaustion and it is less correlated with cynicism. So, maybe it is better to categorize this item in "exhaustion" subscale rather than "cynicism". As another aspect of validity, this study showed that the Persian version of MBI-GS is able to distinguish between the two groups of faculty members in terms of burnout and has acceptable discriminative validity.

## Limitation

There were some limitations in the present study. One of the limitations was that the samples were limited to a single medical school. It is recommended that further multicenter studies be conducted in several universities with different levels of scientific ranking and the results be compared. Previously, each study examined effects of a few factors on burnout. Although this study looked at 13 different factors, there are other possible factors that could contribute to burnout which were not included in our study.

## Conclusion

In conclusion, burnout in terms of exhaustion is higher in clinical faculty members than non-clinical faculty. On the other hand, the most important factors affecting burnout in faculty members are job satisfaction and income satisfaction in general. From the participants' point of view, the most common cause of burnout is the incorrect structure of the work process. It seems that, according to these results, increase in faculty members' income, reduction in workload and improvement in work process can increase job satisfaction, reduce burnout and ultimately reduce loss of capable university faculty man power. As the second conclusion, the Persian version of MBI-GS questionnaire can be used in the population of clinical and non-clinical faculty members with appropriate validity and reliability. The dimensions of this translated questionnaire are completely consistent with the dimensions of the original questionnaire.

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## Conflict of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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