© 2015
Scienceline Publication
www.science-line.com

ISSN: 2322-4770
Journal of Educational and Management Studies
J. Educ. Manage. Stud., 5(2): 144-149; June 30, 2015

JEMS

Study on Mental Workload of Teachers and Its Correlation with Their Quality of Life

Yousef Mohammadian[1], Fatemeh Malekpour[2*], Alireza Malekpour[3], Soudabeh Zoghipour[4], Karim Malekpour[3]

[1]*PhD student in Occupational Health, Department of Occupational Health, Faculty of Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

[2]*MSc, Department of Educational Management, Faculty of Psychology and Training sciences, Alzahra University of Tehran, Tehran, Iran*

[3]*MSc in educational management, Education Organization of Hashtrood, Iran*

[4] *MSc, Department of Educational Management, Faculty of Psychology and Training Sciences, Kharazmi University of Tehran, Tehran, Iran*

*Corresponding author's Email: Fatemehmalekpour65@yahoo.com

ABSTRACT: The aim of this study is to determine the rate of mental workload on teachers and its correlation with their quality of life (QOL). In the current study, NASA-task load index (TLX) tool and also a questionnaire of QOL (SF-36) were used. Results showed that the mean of mental work load between the teachers with two jobs and single job was significantly different (P<0.05). The mean of mental work load among the teachers with different work hours per week showed significant positive correlation (P< 0.05). Among the mean mental workload and dimensions of QOL (activity limitation due to emotional problems and also social performance and general health) were significant negative correlation (P<0.05). The mean of mental workload score was higher among teachers, which can negatively impact the teacher's life quality and also the quality and quantity of their education.

Key words: Mental Workload, School, Teachers, Quality of Life

ORIGINAL ARTICLE
PII: S232247701500021-5
Received 11 May, 2015
Accepted 15 Jun, 2015

INTRODUCTION

Teaching has been reported to be one of the most stressful occupations in the world (Gholamreza, 2006; Johnson et al., 2005; Tsutsumi et al., 2002). Workload is a common reason for teachers to leave the profession (Smithers & Robinson, 2003). Workload is a term that introduces how much an operator uses epistemological and physical sources for doing a job (Backs et al., 1994). Workload is a multi-dimensional and complicate structure that is impressed by external needs of task, mental and organizational factors and cognitive capabilities (Weinger et al., 2004). Work environment is formed by physical, mental and social motives and each of these factors could be one of the burn out factors (Ralimo et al., 1987). These factors have undesirable effects on the both physical (health and its performance) and mental welfare (Haber, 1997).

Occupational stresses effect on individual's health and decrease the QOL (Souri & Hatami, 2003). Quality of life is a multi-dimensional concept that includes physical functioning, role limitation due to physical problems, role limitation due to emotional problems, fatigue, vitality, social functioning, bodily pain and general health (W.H., 2000). One of the effective factors on individuals in organizations is workload that endangers health of most individuals (Holmes, 2001). In the previous decade, the workload subject and its effect on organizations turn into one of the main organizational behaviors (Rezaeian, 2004). Workload and occupational stress have a direct impact on the individual performance and are considered to be the effective issues on health, safety, and comfort of individuals (Gholamreza, 2006). Several studies have demonstrated that excessive stress might have an obvious effect on the physical and mental health status of teachers. Stress, a common problem in teachers, may have serious consequences. For example, some teachers retire early and some even leave their job (Lederer et al., 2001). Previous studies have recommended that unpleasant psychological working conditions may affect the overall healthiness and welfare of workers (Babazono et al., 2005; Lederer et al., 2001; Stansfeld & Candy, 2006). It has been well documented that teachers have a higher prevalence of anxiety, hypertension, headaches, psychosomatic disorders and cardiovascular diseases compared with other workers (Babazono et al., 2005; Forcella et al., 2007; Maslach et al., 2001; Schaufeli & Greenglass, 2001; Unterbrink et al., 2008). A lower QOL and shorter life expectancy have been reported in teachers due to their higher occupational stress (Hong et al., 2003). Organizational factors (e.g. work overload and time pressure) and insufficient resources (e.g. lack of social support and rational coping) have emerged as strong stress factors and hence have an influence on the health of teachers (Hobfoll & Shirom, 2000; Lazarus, 2000). Yong et al. showed that teachers have a poorer health status than the general population (Yang et al., 2009). It is obvious that a depressed, anxious, hopeless and physically unhealthy teacher cannot set up vitality, mind tranquility and stability in class and educational environment (Taghipur, 1998). There is a limited number of studies dealing with the mental workload of teachers in Iran. Therefore, the current study was assessed the mental work load of teachers using NASA-TLX tool. The QOL, possibly

To cite this paper: Mohammadian Y, Malekpour F, Malekpour A, Zoghipour S, Malalekpour K. 2015. Study on Mental Workload of Teachers and Its Correlation with Their Quality of Life. *J. Educ. Manage. Stud.*, 5(2): 144-149.

affected by the mental work load, was also investigated to determine its correlation with the mean of mental work load. The findings from this study could provide managers with useful informational to attenuate the negative effects of workload on the QOL of teachers.

METHOD

Participants and Data Collection

This study was a descriptive - analytic that was performed in the schools of Hashtrud city, East Azarbijan, Iran in 2013-14. In the current study, 137 teachers were randomly participated. Three questionnaires including a general questionnaire, NASA- TLX index and QOL questionnaire (SF-36) were used. In the general questionnaire demographic characterizations such as age, years of employment, sex, marital status, education level, second job, education school and work hours per week were questioned. SF-36 questionnaire quantified the individual comprehension from their own QOL ranged from zero to 100, in which 100 indicates the ideal status and the zero indicates the worse existing status at each dimension. Dimensions of SF-36 questionnaire include: physical functioning, role limitation due to physical problems, role limitation due to emotional problems, fatigue, vitality, social functioning, bodily pain, and general health (Ware et al., 1998). This questionnaire has international validity and reliability and has been validated in Iran by Montazeri et al. The value of Cranach's alpha for all dimensions of questionnaire were between 0.77 and 0.90 ,other than the vitality dimension that was 0.65 for (Montazeri et al., 2005).

The NASA-TLX index is a popular technique for measuring the mental workload that is ranged from zero to 100, in which zero and100 indicate the maximum and minimum workload for each dimension, respectively. Dimensions of NASA-TLX index- include mental demands, physical demands, time demands, performance, efforts, frustration and total work load(Hart, 2006),. This questionnaire has international validity and reliability and has been accredited in Iran (Cronbach's alpha= 0.83) (Ghorbni, 2011).

Data Analysis

Data were analyzed by different tests including descriptive statistics, Pearson correlation analysis, and independent sample t-test using SPSS software version 16. Significant levels were confirmed at P > 0.05. Less than 0.05 was considered to indicate statistical significance.

RESULTS

Demographic and general characteristics of participants are reported in Table 1. The level of workload and QOL in each dimension is shown in Table 2 and 3. The maximum mental workload was related to the mental demands, while frustration was determined as a dimension with minimum rate. The scores for different dimensions of QOL are shown in Table 3. The role limitation due to emotional problems was the minimum score compared to other dimensions, whereas the physical functioning dimension was the highest score compared to other dimensions.

Table 1. Demographic and general characterization of participant

Variable	Frequency (Percent)
Age groups (years)	
20-30	37(27)
31-40	70(51.1)
41-50	30(21.9)
Marital status	
Single	17(12.4)
Married	120(87.6)
Educational degree	
Associates Degree (AD)	45(32.8)
Bachelor	80(58.4)
Master of science (MSc)	12(8.8)
Sex	
Male	82(59.9)
Female	55(40.1)
Years of employment	
1-5	15 (10.9)
6-10	45(32.8)
11-20	62(45.3)
>20	15(10.9)
Weekly Working Hours	
1-15	32(23.4)
16-30	81(59.1)
31-40	24 (17.5)
Dual job	
No	106(77.4)
Yes	31(22.6)
Education schooli	
Elementary	75(54.7)
Secondary	62(45.3)

Statistical analysis of mental workload rates between male and female teachers using independent t-test showed a statically significant difference (P=0.02), It is worth noting that the mental workload in female teachers was higher than male. The mean of mental workload was statistically significant between teachers having one and two jobs (p=0.03). The mental workload of teachers having two jobs was higher than the group who only teach in the school. The mean of mental workload between elementary and secondary school teachers showed a significant difference (p=0.01), and the mental workload of teachers who teach in elementary schools was higher than the teachers of secondary schools (Table 4).

Statistical analysis of correlation using Pearson test showed that the mean of mental workload did not show a significant correlation among different groups of age (r=-0.021, p>0.05). The Pearson test also showed that the mean of mental workload did not have a statically significant correlation among the groups of years of employment (r=-0.032, p>0.05). The mean of mental workload rate was correlated significantly among different categories of work hours per week (r =0.193, p<0.05). Mean of mental workload did not show a statically significant correlation among different educational degree (r =-0.096, p<0.05) (Table 5).

Table 6 shows the results of Pearson correlation analysis for the mean of mental workload and QOL indices. According to Table 6, some dimensions including role limitation due to emotional problems, social functioning, and general health have a significant but negative correlation (p<0.05), In other words, higher mental workload deteriorate the QOL by affecting the role limitation due to emotional problems, social functioning, and general health dimensions.

Table 2. Mean and standard deviation) SD) of indices of mental workload of participant.

Indices Of Mental Workload	Mental Demands	Frustration	Efforts	Performance	Time Demands	Physical Demands	Total Workload
Mean(SD)	81.04(20.63)	47.84(35.29)	77.37(22.86)	80.47(22.85)	60.47(29.72)	61.82(30.62)	68.14(14.61)

Table 3. Mean and standard deviation of QOL dimensions at different scopes in teachers

Quality of Life Indices	General Health	Bodily Pain	Social Functioning	Vitality	Fatigue	Role Limitation Due to Emotional Problems	Role Limitation Due to Physical Problems	Physical Functioning
Mean(SD)	65.47(21.64)	69.19(23.18)	62.68(24.72)	63.18(17.53)	61.64(17.98)	59.95(38.73)	63.68(34.95)	79.30(19.19)

Table 4. Comparison mean mental work load in teachers with respect to marital status, dual job, sex, education class using independent sample test.

Variable	Marital Status	Dual Job	Sex	Education Class
Significant	0.245	*0.03	*0.002	*0.01

Note: An asterisk denotes a significant correlation (P < 0.05).

Table 5. Pearson correlation analysis between mean mental work load and age groups, employment group, work hours per week and educational degree.

Variable	Age Groups	Employment Group	Work Hours Per Week	Educational Degree
Significant	0.441	0.962	*0.031	0.292
Pearson correlation coefficient	-0.021	0. 032-	0.193	0.096-

Note: An asterisk denotes a significant correlation (P < 0.05).

Table 6. Pearson correlation analysis between different QOL dimensions and mean total mental workload.

Variable	Physical Functioning	Role Limitation Due To Physical Problems	Role Limitation Due To Emotional Problems	Fatigue	Vitality	Social Functioning	Bodily Pain	General Health
Significant	0.245	0.964	*0.002	0.295	0.645	0.001*	0.871	*0.013
Pearson correlation coefficient	-0.107	0.003-	0.286-0	0.096-	0.042-	0.294-	0.015-	0.229-

Note: An asterisk denotes a significant correlation (P < 0.05).

DISCUSSION

In the current study, the mental work load and QOL of teachers were successfully assessed with used questionnaires. The results showed that mental demand and the frustration were rated as the highest and lowest dimensions, respectively. It seems that the main load of mental work could be posed due to the nature of teaching. In other words, teachers perform their job activities using information processing and decision making. The higher mean of mental workload in female teachers than the male ones could be related to this fact that female teachers are usually expected to take more responsibility in teaching than males. They are given excessive work tasks and expected to communicate more efficiently with their

students. Meanwhile, female teachers may also have to take care of their family, and face a variety of family duties, societal pressures and challenges, which may cause physical health problems. Furthermore, the difference in the psychological characteristics of men and women is another main factor. The study of Xiao et al showed that the mental workload of female teachers was significantly higher than the male ones (Xiao et al., 2011). The result of the current study is in good agreement with the study of Xiao et al. (2011).

Having two jobs could be considered as an important cause of mental work load. The statistically difference of the mean of mental work load between teachers having two jobs and who just teaches implies that the second job would impose some additional mental workload. Age and years of employment could not consider as an important cause of mental work load. Mean mental workload among different age groups and different years of employment group were not statically significant correlation. In other words the age and years of employment do not affect mental workload rate. The study of Xiao et al showed that the mean mental workload in 35 years old group was the highest rate. In teachers below the 35 years old groups, a positive correlation between mental workload and age was found. In teachers that having more than 35 years old, a negative correlation between mental workload and the age was found (Xiao et al., 2011). The results of the current study are in not agreement with the study of Xiao et al.

Having higher work hours could be considered as an important cause of mental work load. The statistically positive correlation between mean mental workload and work hours per week implies that the higher work hours impose some additional mental workload. The study of Xiao et al showed that the positive correlation among mean mental workload and work hours per day in teachers (Xiao et al., 2011). The study of Smith showed that positive correlation among tiredness due to long work hours and mental workload (Smith, 2004). The results of the current study are in good agreement with the study of Xiao et al and smith.

Education level could be considered as an important cause of mental work load. Study showed mean mental workload among elementary school teachers is more than the secondary schools. The statistically no significant correlation between mean mental workload and educational degree.

The results showed that role limitation due to emotional problems and physical functioning were rated as the highest and lowest dimensions of QOL, respectively. Among dimensions of QOL, role limitation due to emotional problems, social functioning, and general health showed a statically significant but negative correlation with the mean of mental workload. , In other words, increase of the mental workload results in deterioration of QOL in dimensions such as role limitation due to emotional problems, social functioning and general health. The study of Yong et al showed that, the QOL of female teachers is lower than that of male teachers, and deteriorates with age. The low QOL in female teachers is related to this fact that female teachers are imposed higher mental workload that mentioned above (Yang, et al., 2009).

Having higher work hours, second job, sex, and education level could be considered as an important cause of mental work load. Higher mental work load could deteriorate role limitation due to emotional problems, social functioning, and general health dimensions of QOL. Therefore necessary measures are needed to decrease mental workload by decreasing weekly work hours and proper financial support to improve both teacher's health and quality and quantity of their teaching.

REFERENCES

Babazono, A., Mino, Y., Nagano, J., Tsuda, T., & Araki, T. (2005). A prospective study on the influences of workplace stress on mental health. *J Occup Health. 47* : 490-495.

Backs, R. W., Ryan, A. M., & Wilson, G. F. (1994). Psychphysiological measures of workload during continuous manual performance. *Human Factors 36* : 514–531.

Forcella, L., Di Donato, A., Coccia, U., Tamellini, L., Di Giampaolo, L., & Grapsi, M. (2007). Anxiety, job stress and job insecurity among teachers with indefinite or definite time contract. *G Ital Med Lav Ergon. 29* : 683-689.

Gholamreza, K. (2006). *Stress and anxiety for individuals and organizations*. Tehran: Reflections publication.

Ghorbni, M. (2011). *Personal and observational methods to assess the workload on the assembly line of an auto industry.* Paper presented at the Seventh National Conference on Safety and Health Working.

Haber, J. (1997). *Comprehensive nursing. 6 ed. Boston*: Mosby Company.

Hart, S. G. (2006). *NASA-Task Load Index (NASA-TLX), 20 years later*. San Francisco: Paper presented at the HFES.

Hobfoll, S. E., & Shirom, A. (2000). *Conservation of resources theory-Applications to stress and management in the workplace*. New York.

Holmes, S. (2001). Work related stress a brief review. *Journal research social health. 121*: 230-235.

Hong, S., Zhijian, J., & Baohua, M. (2003). Research on life-span of the population of intellectuals in Harbin Chinese. *Chin J Hosp Stat. 10* :8-16 .

Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *J Manag Psychol. 20* :178–187.

Lazarus, R. S. (2000). Toward better research on stress and coping. *Am Psychol, 55* : 665–673.

Lederer, P., Weltle, D., & Weber, A. (2001). Illness-related premature unfitness for work among civil servants in Bavaria – an evaluation in the social medical field *Gesundheitswesen. 63* : 509–513.

Maslach, C., Schaufeli, W. B., & Leiter, P. M. (2001). Job burnout. *Annu Rev Psychol. 53* : 397–422.

Montazeri, A., Goshtasebi, A., Vahdaninia, M., & Gandek, B. (2005). The Short Form Health Survey (SF36)- translation and validation study of the Iranian version. *Qual Life Res. 14* : 875-882.

Ralimo, R., EL- Batawi, M., & Cooper, C. L. (1987). *Psychosocial factors at work*. Geneva.

Rezaeian, A. (2004). *Stress Management printing*. Tehran: Samt publication

Schaufeli, W. B., & Greenglass, E. R. (2001). Introduction to special issue on burnout and health. *Psychol Health. 16* : 501–510.

Smith, B. K. (2004). Test your stamina for workplace fatigue. *Nurse Manag. 35* : 38-40.

Smithers., & Robinson. (2003). Factors affecting teachers' decisions to leave the profession, from http://www.education.gov.uk/research/data/uploadfiles/rr430.pdf

Souri, H., & Hatami, A. (2003). Job Stress in employed women in Ahwaz city. *Bahar hakim Research Journal. 6* :65 - 69.

Stansfeld, S., & Candy, B. (2006). Psychological work environment and mental health –a meta-analysis review. *Scand J Work Environ Health. 32* :442–462.

Taghipur, Z. A. (1998). *Fundamentals of Education*. Tehran: Agah publication.

Tsutsumi, A., Kayaba, K., Nagami, M., Miki, A., Kawano, Y., & Ohya, Y. (2002). The effort-reward imbalance model – experience in Japanese working population. *J Occup Health, 44* : 398–407.

Unterbrink, T., Zimmermann, L., Pfeifer, R., Wirsching, M., Bra¨hler, E., & Bauer, J. (2008). Parameters influencing health variables in a sample of 949 German teachers. *Int Arch Occup Environ Health. 82*: 117–123.

W.H., P. (2000). *Understanding and assessing diabetes specific quality of life*: Diabetes spectrum.

Ware, J. r., Kosinski, M., Gandek, B., Aaronson, N. K., Apolone, G., & Bech, P. (1998). The factor structure of the SF-36 Health Survey in 10 countries: results from the IQOLA Project. International Quality of Life Assessment. *J Clin Epidemiol. 51* : 1159–1165.

Weinger, M. B., Reddy, S. B., & Slagle, J. M. (2004). Multiple measures of anesthesia workload during teaching and nonteaching cases. *Anesth Analg. 98* : 1419–1425.

Xiao, Y. M., Wang, Z. M., Wang, M. Z., Lan, Y. J., Fan, G. Q., & Feng, C. (2011). Study on mental workload of teachers in primary schools. *Chinese Journal of Public Health. 29* : 930-932.

Yang, X., Ge, C., Hu, B., Chi, T., & Wang, L. (2009). Relationship between quality of life and occupational stress among teachers. *Public Health. 123* : 750–755.