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The Relation between Work-Related Psychosocial Factors and Development of Depression among Administrative Staff

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ABSTRACT

Background: With the industrialization and improvement of developing countries in controlling of harmful physical, chemical, and biological hazards in the workplace, psychosocial factors are more negatively affecting the workers, workplaces, and society. Job stress can cause health disorders and physical and mental exhaustion followed by anxiety, depression, and cardiovascular or musculoskeletal diseases. Given the role of psychosocial factors as a contributing factor in administrative efficiency and occurrence of occupational accidents, evaluation of these factors among the administrative can be a step towards increased productivity and health.

Methods: The present study was a cross-sectional intervention in which the study population included 310 employees of Tabriz University Health Vice-Chancellor. The required data were collected using the Beck Depression Inventory (BDI-II) and Copenhagen Psychosocial Questionnaire (COPSOQ) for measuring work-related psychosocial factors.

Results: Most participants experienced mild depression along with job stress. More than 50% of employees work more than 44 hours a week and women usually work more than men. The results indicated that there is a significant relationship between depression and psychosocial factors. In addition, non-significant difference was found between men and women in terms of psychosocial factors and women had poor condition.

Conclusion: The study findings provide further support to the hypothesis that stress job and poor status of psychosocial factors are associated with depression. Therefore, conduction of the required interventions by improving the psychosocial conditions of the workplace can have considerable positive impacts on the physical and mental health of employees and reduce the likelihood of individual errors.

Key words: Psychosocial factors; Administrative staff, Depression

INTRODUCTION

With the changes in the world of work in recent decades such as globalization, increased competitiveness, and new forms of work organizations, psychosocial risk factors have been raised as an important matter of occupational health and safety and an intriguing area of research. [1-4] recently, the highest priority among occupational factors has been given to psychosocial ones by the Europe Union countries. [4, 5] The executives of this institute have predicted that psychosocial factors will be one of the most important fields of study and research. [6, 7] Although a minimum level of stress is necessary for human life, job stress is increasing among employees around the world and has become an integral of everyday life, as it is considered a global epidemic by the World Health Organization. It has been reported that almost a quarter of the working population in the US suffer from job. [8] Depending on the individual responses, the impact of stress on health can be very diverse. High level of stress can cause physical, mental, and e mental exhaustion and thereby predispose people to burnout. [9] The impact of job stress on high-risk social behaviors, such as alcohol and drug abuse, smoking, unhealthy life style and insufficient sleep, has attracted special attention. [10][11-13] the effect of these behaviors on increasing the workforce

accidents and non-communicable diseases has been proven. [13-15]

Major Depressive Disorder (MDD) is one of the most common psychiatric diagnoses characterized by depressed mood with feelings of sadness, low self-confidence, and lack of interest in any type of everyday activity and joy. Referred to as "psychological cold", depression is a collection of various psychological states which involves a slight feeling of boredom to silence and isolation from everyday activities. Major Depression is a term which was firstly used by American Psychiatric Association in 1980 to refer to a set of mood disorders for DSM-III and then was widely used. Major Depression leads to the significant disability of individuals in their personal, social, and occupational areas of life and affects their daily functions such as eating, sleeping, and health. [16] An epidemiologic survey in USA showed the lifetime prevalence of 13.23% for major depression disorder according to DSM-IV criteria. [17] The prevalence of depression increased significantly in the USA from 2005 to 2015. The rate of increase in depression among young people was significantly more rapid comparing to older groups. [18] It is estimated that by 2030 the three leading causes of burden of disease will be HIV/AIDS, depression, and ischemic heart disease respectively. [19]

Considering the importance of the administrative staff tasks, the possible role of these tasks in the creation of job stress, and occurrence of depression because off high job demands, conduction of a comprehensive study on the relationship between psychosocial factors and depression in this field seems to be necessary. By improving the psychosocial conditions of the workplace, the overall efficiency of employees can be improved, and an important step can be taken in improving the health of employees.

MATERIALS AND METHODS

The present research was a cross-sectional study. The study population included all employees of Tabriz University Health Vice-Chancellor in 2016, 310 of whom were selected by simple random sampling.

The inclusion criteria were signing the informed consent form, being a member of Azeri ethnicity (for data matching), being at least 20 years old, and educational attainment of at least junior high school to understand the questions. The exclusion criteria were affliction with any psychiatric disease or its history, taking any drug affecting CNS or PNS to prevent effective cases in stress, and not being in pre-menstrual period for women (because women in this period may experience more stress).

The required data and information were collected through demographics questionnaire, the Copenhagen Psychosocial Questionnaire, and the Beck Depression Inventory.

The Copenhagen Psychosocial Questionnaire (COPSOQ) has been developed in three versions to measure the psychosocial factors of the workplace. This questionnaire includes 5 domains of job demand, job content organization of work, interpersonal relation leadership, person work interface level, and health and well-being. This questionnaire for the first time was developed in Denmark in 2005. The validity and reliability of this test have been confirmed and now it is considered a national standard for evaluation of psychosocial factors in the workplace in different countries. [20] The validity and reliability of the Farsi version of this questionnaire were assessed and approved in 2011. [21] The short form of this questionnaire, which consists of 18 scales in 5 domains (job demand with 3 scales, job content organization of work with 5 scales, personal relation leadership with 5 scales, person work interface level with 2 scales, and health and well-being with 3 scales), was selected to be used in the present study. Each scale is scored between 0 and 100. In scales of job demand and insecurity at work,

higher scores represent the poorer status of psychosocial factors, in the remaining 14 scales; higher scores indicate the better status of psychosocial factors. The final score of each domain is obtained from the sum of relevant scales. Accordingly, the overall score of job content organization of work and interpersonal relation leadership, job demand and health and well-being, and person work interface level will be in the range of 0-500, 0-300, and 0-200, respectively. [20, 22-24]

The Beck Depression Inventory has been developed to measure the severity of depression. The revised form this questionnaire is more consistent with DSM-IV. In addition, it also involves all elements of depression based on the cognitive theory of depression. This questionnaire consists of 21 items on different areas of a sense of inability, sense of failure, sense of guilt, irritability, sleep disturbances, and loss of appetite. This questionnaire is a self-evaluation test that takes 5-10 minutes to be filled out. The subjects answer the questions based on a 4-point Likert scale from 0 to 3. Finally, the sum of scores on each scale represents the total score of depression. The scores equal to or lower than 11 indicate no depression and the scores more than 11 are indicative of mild, moderate, and severe levels of depression. [25] This questionnaire has been standardized in Iran Ok hovat and is now being widely used for measurement of depression in healthy individuals or those with mental health problems. In a high-level analysis of various studies, the internal consistency of this questionnaire was determined to be 73% and 92%, with a mean of 86%. [26]

The obtained data were analyzed using descriptive statistics (mean and/or standard deviation, frequency, and percentage) and inferential statistics in SPSS-23.

Ethical considerations:

Study objectives were explained verbally and in writing. Participation was on voluntary basis, and the questionnaires remained anonymous. This study was approved by the Medical Ethics Committee of Research Deputy of the Ministry of Health.

RESULTS

A total of 500 questionnaires were distributed among the participants, 310 of which were filled out completely and returned, accounting for a response rate of 62%. Among the final participants, 157 males (50.65%) and 153 females (49.35%) completed all stages of the study and the related data were used for further analysis. Table 1 shows the demographic characteristics of participants. Based on the Beck Depression Inventory (BDI) score (equal to or less than 11 and more than 11), the participants were divided into two groups. The proportion of men to women in both groups was roughly equal. In addition, 65.8% of the study population had a bachelor degree or higher and there was no significant between the two groups in terms of educational attainment.

Most participants were married and had no history of smoking. There was a significant difference between the two groups in marital status, as the frequency of married participants in the depressed group was higher than the single ones (85.1% compared to 76.1%). The mean age and work experience of participants were 40.25 (±8.85) and 16.40 (±7.94), respectively, which indicates no significant difference between the two groups. In terms of the average working hours per week, no significant difference was found between the participants with no depression symptoms (47.96 hours) and depressed ones (46.50 hours).

The mean and standard deviation of scores obtained from the Copenhagen Psychosocial Questionnaire have been shown in Table 2. The mean scores indicate that women have a poorer status than men in all psychosocial domains, although it is not statistically significant. In addition, married participants presented worse status than single ones in all psychosocial domains, and

the difference between them was statistically significant in "interpersonal relation leadership". The participants with a higher level of educational attainment had a better status than others in domains of job content organization of work, interpersonal relation leadership, and person work interface level which was significant in last one. The participants who work more than 44 hours per week had a poorer status than those who work less in three domains of job demand, job content organization of work, and health and well-being.

Table 3 presents the mean and standard deviation of scores of the Copenhagen Psychosocial Questionnaire scales. The participants with symptoms of depression showed a poorer status than others in all psychosocial domains, and there was a significant difference between them in domains of job demand, job content organization of work, and person work interface level. In addition, the participants with symptoms of depression had a weaker status than others in all scales, as a significant difference was found between them in scales of quantitative demand, demands for hiding emotions, influence at work, in security at work, job satisfaction, mental health, and vitality.

Table 4 shows that the majority of participants (54.19%) had no symptom of depression, and 2.26%, 9.03%, 13.55%, and 20.97% of them were suffering from severe, relatively severe, mild, and moderate levels of depression, respectively. According to this table, severe and moderate depression in men and mild and relatively severe depression in women is more prevalent.

Using the multivariate stepwise regression, depression as the criterion variable and the Copenhagen psychosocial factors and demographic factors as the predictive variables were applied to the research model. Out of them, person work interface level and job demand remained significant in the regression model. The results indicated that the multivariate correlation coefficient for the final model (job demand and person work interface level) is equal to 0.26 with a square of 0.07 and an adjusted coefficient of determination of 0.06. Therefore, it can be stated that this model can predict depression by 0.06%. On the other hand, the results of regression variance analysis (significance of regression line) {F (2,307) =10.96, P<0.05}s showed that the effect of regression or the effect of independent variables, compared to the residual effect, are quite significant which confirms the linearity of the model.

Using the beta coefficient of the regression equation (Table 5), it was found that "person work interface level", with a beta coefficient of 0.20, has the lion's share in explaining depression and "job demand", with a beta coefficient of 0.17, ranks second. In other words, poor status of "person work interface level" and "job demand" can predict depression. Other scales have no share in explaining depression because no significant relationship was found between them and depression. Thus, it can be concluded that "person work interface level" and "job demand" can predict 0.06% of the variance of depression.

Table 1: Demographic Characteristics of participants

Characteristics		Total	Normal group (BDI score of less than 11)	Depressive group (BDI score of equal to or more than 11)	P
Gender	Female- Number (percentage)	153 (%49.35)	(%49.4) 87	66 (%49.3)	0.98
	Male- Number (percentage)	157 (%50.65)	89 (%50.6)	(%50.7) 68	
Marital status	Single- Number (percentage)	62 (%20)	(%23.9) 42	(%14.9) 20	0.05
	Married- Number (percentage)	248 (%80)	(%76.1) 134	(%85.1) 114	
Educational attainment	High school diploma-Number (percentage)	61 (%19.7)	(%21) 37	24 (%17.9)	0.32
	Associate degree- Number (percentage)	45 (%14.5)	(%11.9) 21	24 (%17.9)	
	Bachelor degree- Number (percentage)	143 (%46.1)	(%43.8) 77	(%49.3) 66	
	Master degree or higher- Number (percentage)	61 (%19.7)	(%23.3) 41	20 (%14.9)	

Table 1 to be continued....					
History of smoking	Yes- Number (percentage)	14 (%4.5)	(%4) 7	7 (%5.2)	0.61
	No- Number (percentage)	296 (%95.5)	(%96) 169	(%94.8) 127	
Age	Mean (Standard deviation)	40.25 (8.85)	(9.20) 40.17	40.36 (8.40)	0.85
Work experience years	Mean (Standard deviation)	16.40 (7.94)	(8.64) 16.83	15.84 (6.91)	0.28
Average working hours per week	Mean (Standard deviation)	(13.93) 47.33	(15.30) 47.96	46.50 (11.90)	0.36

Table 2: Mean and standard deviation of Beck score and psychosocial factors between groups

Groups Scales			Job Demand	P Value	Job Content Organization of Work	P Value	Interpersonal Relation Leadership	P Value	Person Work Interface Level	P Value	Health and Well-being	P Value	Beck Score	P Value
Total		Mean	160.51	-	274.13	-	259.96	-	74.40	-	159.35	-	12.65	-
		Standard deviation	44.16		66.26		73.83		38.10		28.55		11.61	
Gender	Female	Mean	163.67	0.21	271.16	0.44	259.89	0.99	75.57	0.59	157.38	0.23	11.83	0.22
		Standard deviation	43.62		66.05		75.36		38.30		30.15		11.04	
	Male	Mean	157.43		277.02		260.03		73.25		161.27		13.44	
		Standard deviation	44.61		66.54		72.53		37.99		26.85		12.13	
Marital status	Single	Mean	159.27	0.81	285.11	0.13	282.06	0.01	66.13	0.06	162.88	0.27	9.76	0.03
		Standard deviation	43.89		56.42		74.51		34.26		27.85		9.40	
	Married	Mean	160.82		271.27		254.44		76.46		158.46		13.37	
		Standard deviation	44.32		68.30		72.76		38.79		28.71		12.01	
Educational attainment	High school diploma or bachelor's degree	Mean	159.98	0.89	265.88	0.12	252.36	0.18	87.32	000	165.71	0.07	13.28	0.49
		Standard deviation	49.58		68.27		69.70		38.94		32.36		11.79	
	Higher than bachelor	Mean	160.78		278.41		263.91		67.68		156.04		12.31	
		Standard deviation	41.19		64.94		75.75		35.95		25.83		11.54	
Working hours per week	=>44	Mean	165.92	0.04	264.71	0.02	260.84	0.84	70.16	0.06	155.96	0.04	13.46	0.24
		Standard deviation	40.51		66.50		82.38		37.38		28.53		12.73	
	<44	Mean	155.37		283.07		259.12		78.42		162.56		11.88	
		Standard deviation	46.92		64.78		64.92		38.46		28.28		10.44	
History of smoking	Yes	Mean	176.79	0.24	245.83	0.19	230.36	0.12	76.79	0.83	165.54	0.29	10.86	0.27
		Standard deviation	51.57		78.43		103.04		40.68		21.24		5.60	
	No	Mean	159.74		275.46		261.36		74.28		159.05		12.73	
		Standard deviation	43.73		65.48		72.09		38.04		28.85		11.82	

Table 3: The mean and standard deviation of the Copenhagen Psychosocial Questionnaire scales for two groups according to Beck Score

Domain	Scale	Total	Normal	With depression symptoms	P
		Mean (SD)	Mean (SD)	Mean (SD)	
Job Demand		160.51 (44.16)	154.31 (37.04)	168.66 (51.08)	0.01
	Quantitative Demands	57.28 (15.3)	55.59 (15.16)	59.51 (15.33)	0.03
	Emotional Demand	52.66 (20.99)	51.42 (18.22)	54.29 (24.14)	0.23
	Demands for hiding Emotions	50.56 (29.38)	47.30 (27.05)	54.85 (31.78)	0.03
Job Content Organization of Work		274.13 (66.26)	283.12 (63.77)	262.31 (67.83)	0.01
	Influence at Work	55.05 (15.77)	58.33 (14.85)	50.75 (15.94)	0.000
	Possibilities for Development	60.89 (20.12)	62.36 (19.23)	58.96 (21.16)	0.15
	Degree of Freedom at Work	49.52 (30.03)	50 (31.05)	48.88 (28.74)	0.74
	Meaning of Work	61.29 (22.30)	62.56 (21.69)	59.24 (22.99)	0.16
	Commitment to the Workplace	47.38 (23.68)	49.57 (23.03)	44.50 (24.31)	0.06
Interpersonal Relation Leadership		259.96 (73.83)	265.70 (68.92)	252.43 (79.45)	0.12
	Predictability	50.93 (21.13)	52.49 (20.92)	48.88 (21.32)	0.14
	Quality of Leadership	56.25 (26.87)	57.17 (26.37)	55.04 (27.55)	0.49
	Social Support	44.44 (22.27)	46.61 (21.60)	41.98 (22.96)	0.09
	Feedback at Work	41.53 (24.73)	41.90 (24.24)	41.04 (25.45)	0.76
	Sense of Community	66.81 (25.50)	67.83 (24.84)	65.49 (26.38)	0.43
Person Work Interface		74.40 (38.10)	67.90 (36.24)	82.93 (38.92)	0.001
	Insecurity at Work	35.32 (34.46)	30.40 (32.28)	41.79 (36.24)	0.004
	Job Satisfaction	60.93 (15.81)	62.50 (14.44)	58.86 (17.28)	0.05
Health and well-being		159.35 (28.55)	161.44 (28.38)	156.60 (28.65)	0.14
	General Healthy	58.31 (24.08)	60.37 (23.35)	55.60 (24.84)	0.09
	Mental Health	49.15 (13.88)	47.70 (13.78)	51.04 (13.82)	0.04
	Vitality	51.90 (12.96)	53.37 (12.04)	49.95 (13.89)	0.02

Table 4: Different levels of depression according to Beck score among the participants

	Total	Women	Men
	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)
No depression symptom	168 (%54.19)	82 (%53.59)	86 (%54.78)
Mild depression	42 (%13.55)	28 (%18.30)	14 (%8.92)
Moderate depression (requiring consultation)	65 (%20.97)	28 (%18.30)	37 (%23.57)
Relatively severe depression	28 (%9.03)	14 (%9.15)	14 (%8.92)
Severe depression	7 (%2.26)	1 (%0.65)	6 (%3.82)

Table 5: Standardized beta coefficients for evaluating the share of variables in predicting depression

Model	Applied variables	Adjusted coefficient of determination	Non-standardized coefficients		Standardized beta coefficients	t	Level of significance
			B	Standard error			
1	(constant)	0.04	1.24	0.06		20.43	000
	Person Work Interface Level		0.003	0.001	0.20	3.50	000
2	(constant)	0.06	0.93	0.12		7.92	000
	Person Work Interface Level		0.003	0.001	0.20	3.66	000
	Job Demand		0.002	0.001	0.17	3.05	0.002

DISCUSSION

According to a report of Namayande website, the working hours (on a weekly basis) has been determined to be 36 hours for workers engaged in hard, hazardous, and underground jobs and 44 hours for other workers. In the case of other workers, no maximum for daily working hours has been set in the labour law. In the present study, 80 men (50.96%) and 79 women (51.63%), accounting for 51.29% of all participants, work more than 44 hours a week. The results of this study showed that this group of participants had a poorer status in all psychosocial domains and experienced higher levels of job stress. Based on the

results of previous studies which have reported that increased working hours and fatigue is related to the health and safety of workers, accidents, and human errors, [27-29] it is necessary to develop more stringent regulations on the working hours of employees.

In the present study, it was shown that women and the married employees, compared to men and singles, had a poorer status in all psychosocial domains. This can be attributed to their more responsibilities in the family and interference of their family responsibilities with occupational duties. The study findings also indicated that those with a higher level of educational attainment had a better status in domains of job content organization of work, interpersonal relation leadership, and person work interface level. This can be due to the fact that these people are usually in high-rank organizational positions and have a stronger power of decision-making at work. However, they reported a weaker perception of their own health status which can be attributed to their higher expectation from their health status.

In this study, the poor psychosocial status of in all scales and domains was proven to be related with increased incidence of depressive symptoms. This finding was in consist with previous studies which have showed the relation between job stress to depression symptoms, sleep disturbance, cognitive stress symptoms and poor mental health. [9,12, 13, 30, 31]

Some previous studies compared the psychosocial work environment of white and blue collars and concluded that white collar employees experience more stress inside and outside of workplace compared to the blue collar employees and psychological job demand is higher among the white collar employees and physical job demand is more among the blue collar ones. [32, 33] The administrative staff was studied in the present research and the results could not be compared with other employees.

Research limitations:

The reliance of psychosocial factors assessment through self-reported questionnaires can be argued due to the limited possibility of objective measurement. Since the present study was conducted on the administrative staff of one city, it is difficult to generalize the findings to the whole employees of Iran. In addition, depression symptoms were measured using the questionnaire and it was not possible to confirm the diagnosis with DSM criteria. We conducted a cross-sectional questionnaire based study, more objective and cohort studies in the future are suggested to better understand the association between psychosocial factors and mental health.

CONCLUSION

The present study provides further support to the hypothesis that job stress and unfavorable psychosocial work environment are associated with depression symptoms. The physical and mental health status of the employees can be improved and the possibility of individual errors can be reduced through the conduction of the required interventions by improving the psychosocial conditions of the workplace.

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