The Effects of Physical Activity Training on Occupational Burnout of Employees in the Iranian city of AghGhala in 2012

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Abstract

Introduction: occupational burnout leads to a negative self-concept, and negative attitude toward the job. The role of physical activity in physical and mental health of community has been recognized as an integral component. This paper aims to determine the effect of physical activity training on occupational burnout.

Methods and Materials: In this semi-experimental study carried out in the city of AghGhalain the north of Iran in 2012, 120 employees were selected using convenience sampling, two standard questionnaires (physical activity and occupational burnout) for collecting data. Data were analyzed using SPSS16. Significant level was considered 0.05 in all analyses.

Results: It was found that 45.7% of the employees had no physical inactivity or had low physical activity, 32.7% of them had moderate and 21% had intensive physical activity. Among the subscales of burnout, emotional exhaustion had the highest rate (25.24±9/5). There was a significant relationship between emotional exhaustion and physical activity using Chi-square ($\chi 2$) test (p=0/000).

Conclusions: Inactivity, common among employees, causes exhaustion. We recommend the staff be trained for physical activity and also the authorities provide sports facilities for them.

Keywords: Physical activity, burnout, training.

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Introduction

Occupational burnout reduces a person's adjustment ability to work stressors. It is a complex syndrome with physical and emotional exhaustion, which creates self-negative image, negative attitude toward work, and lack of proper communication with colleaguesatwork. Since Froidneberg first introduced occupational burnout in 1974, it has been the subject of various investigations (1).

Occupational burnout annually costs 50-75 million dollars in organizations in the USA(2). World Health Organization announced that 90% of employees are unsatisfied with their occupation and believe it does not match their life goals. As WHO reported 75% of people seek psychiatric consultation due to occupation dissatisfaction (3).

Burnout can result in insomnia, fatigue, consumption of drugs and alcohol, and marital and family problems. Employees' burnout causes economic disruption such as frequent absence from work (4).

Studies are performed to evaluate occupational burnout among health care providers including nurses, dentists, physicians, medical students, staff of different hospital wards, medical technicians, and teachers and their families at different levels. All the investigations indicated a high degree of occupational burnout among such professions(5). Bashlideh showed that occupational burnout affects mental health of individuals(6).In a study on health care workers in Mashhad, Talaee and colleagues showed that emotional exhaustion depends on age and sex of the employees(7).Walter's study on social workers demonstrated that 60% of them experienced emotional exhaustion. Evidences indicated that occupational burnout affects physical health of employees and causes issues such as muscle disorders in women and cardiovascular diseases in men. In addition, work stressors can lead to negative behavior like smoking, alcohol and drug abuse, and inactivity(8).Since occupational burnout is the side effect of mental pressure, exercise can reduce mental pressure(9). The results of exercise benefits has made some managers plan and provide sports programs for their employees(10).Proper physical activity may reduce the occupational burnout. Physical activity is a complex behavior (11).According to WHO reports, inactivity is one of the 10 main causes of mortality and morbidity, and more than 2.3% of mortality rate is blamed on inactivity. In most countries, 60-80% of adults do not have enough physical activity. American Heart Association recommends 30-60 minutes of aerobic exercise and 3-4 times a week cardiovascular health(12). Other studies, emphasizing on physical activity during leisure time, indicated that inactivity in rural and urban areas among women and men aged 15-64, were 76.3% and 58.5%, respectively, and generally the rate was 67.5% in this age group (13). Due to lack of research in this case (14)we aimed to conduct a study to evaluate the effect of physical activity training on employees' burnout among employees of AghGhala.

Materials & Methods

In this semi-experimental study, all the personnel of education departments, municipality, and power plant of AghGhala were enrolled. The sample size was calculated based on the previous studies (9) and was 120, the samples were recruited based on easy sampling method (the answer rate was %87).

The study tool was a questionnaire including three parts; the first part in clouded demographic questions, the second was a physical activity questionnaire which was a

short version of International Physical Activity Questionnaire (IPAQ). The questionnaire contained seven questions related to the participants' physical activity in the previous week. The study population included 105 patients for the treatment group, 30 cases were determined to be, and considering the chance of losing subjects during the study, 10% was added to the number.

A pretest was conducted with the questionnaire to determine athletes from non-athletes, and20 subjects turned out to be athlete. The reminders (n=85) were divided into2 groups, 33 in intervention group and 52 in control group. The intervention group received four training sessions including speech, group discussion, and pamphlet about regular physical activity. The posttest was conducted 2 months later to assess the effects of training program. The first two training sessions were dedicated to the benefits of exercise. The third session was about the amount of exercise required for physical fitness and introducing free options for physical activity, and the last session was about improving physical activity level and time management to include physical activity and walking in daily routines.

For ethical reasons the control group received training sessions and educational pamphlet at the end of the study. We analyzed data with SPSS 16, using descriptive statistics including frequency, percent, mean and standard deviation. To compare the results *t*-test, Chi-square ($\chi 2$) test and ANOVA were employed. The significant level was considered 0.05 in all calculation.

Burnout Questionnaire, IPAQ scoring and review

Based on IPAQ scoring protocol, one's physical activity can be estimated by two ways:

1. The total amount of physical activity in the previous week MET-minute/week; a standard questionnaire used in many studies with proved validity and reliability (14).

In this questionnaire, walking has 3.3 METs, moderate physical activity has four METs and intense physical activity has eight METs scores. To calculate the total physical activity in the week, the amount of walking (MET×minute×day) is added to the amount of moderate physical activity (MET×minute×day) minute and added to the amount of intense physical activity (MET×minute×day) (9).

2. The intensive physical activity in this questionnaire is described as at least 10 minutes activity, which highly increases breathing and heart rate. The moderate physical activity is described as at least 10 minutes activity, which moderately increases breathing and heart rate. Then based on short IPAQ formula (MET-minute/week) we calculated the amount of energy consumed by employees during physical activity including walking, moderate and intensive physical activities. If the sum of physical activities during seven days reach at least 3000, it would be considered as intensive, if the total score of above activities during 5 days or more reach at least 600, it would be considered as moderate activity, otherwise it would be considered as minimum physical activity(15).

To assess burnout, 22 questions were administrated based on a Liker type 6-point scale in the three subscale third part of data collection, Maslach Burnout Inventory (MBI)(9)for the burnout was utilized(Table 1).

A high score in emotional exhaustion (EE) and depersonalization (DP), or a low score in personal accomplishment (PA) subscales indicates occupational burnout(16,17).

Table 1: The characteristics of burnout questionnaire

Subscale	Number of questions	Score		
		High	Average	Low
Emotional exhaustion	9	>27	17-26	<16
Depersonalization	5	>13	7-12	<6
Personal accomplishment	8	>39	32-38	<31

Results

In this study, 94% of the participants were male and 93.9% married. The mean age was 36 ±7.9 years. They mostly had bachelor degree and higher (47.1%), and the mean duration of employment was 13 years. The distribution of participant indifferent departments was as follows: education department 37.5%, power department 34.6% and municipal staff 27.9%. Regarding the level of physical activity, 45.7% had very low or no physical activity at all, 32.7% moderate and 21% had intensive physical activity (Table 2).

The findings of our study showed that intensive physical activity reduces emotional exhaustion in employees (p=0.0ion 00). A significant relation was found between employees` burnout and physical activity (p=0.000). Pearson test revealed that there is a significant association between emotional exhaustion and age (p=0.000). There was no significant relation between physical activity and marital status (p=0.8). A comparison between the two groups in pre- and post-test is demonstrated in table 3.

Chi-square test illustrated a significant difference for physical activity among intervention and control group (Table 4).

Table 2:The mean of burnout in pre- and post-test

Physical activity	Pre-test ANOVA								
	Emotional exhaustion			Depersonalization			Personal accomplishment		
	N		S.D	N		S.D	N		S.D
Low	48	24.7	6.3	48	3.2	8.4	48	21.5	4.3
Medium	34	24.4	5.2	34	2.5	7.6	34	21.1	4.6
Intensive	23	3.1	0.65	23	1.6	5.7	23	17.4	3.5
sig	P= 0.000			P= 0.001			P= 0.001		
Physical activity	Post-test ANOVA								
	Emotional exhaustion			Depersonalization			Personal accomplishment		
	N		S.D	N		S.D	N		S.D
Low	45	28.2	8.8	45	7.2	2.2	45	25.4	4.7
Medium	31	26.6	9.6	31	6.6	2	31	25.4	4.7
Intensive	22	17.1	5.5	22	6	1.7	22	23.7	5.1
sig	P= 0.000			P= 0.09			P= 0.4		

Table 3: Comparison between burnout mean among intervention and control groups

Physical activity	Pre-test ANOVA								
	Emotional exhaustion			Depersonalization			Personal accomplishment		
	N		S.D		S.D			S.D	
Intervention	33	26.21	6.5	8.48	3.2		21.85	4.5	
Control	52	23.17	5.2	7.67	2.8		20.98	4.2	
Athlete	20	3.3	3.3	5.85	1.6		17.25	3.7	
sig	P= 0.000			P= 0.001			P= 0.005		
	Emotional exhaustion			Depersonalization			Personal accomplishment		
	N		S.D	N		S.D	N		S.D
Intervention	33	24/12	8/1	33	6/61	1/8	20	24/75	4/9
Control	52	29/22	9/6	52	7/13	2/3	20	25/74	4/9
Athlete	20	17/58	5/7	20	6/16	1/8	20	23/33	5/3
sig	P= 0.000			P= 0.21			P= 0.21		

Table 4: Physical activity level based on groups

Physical activity	Pre-test				Post-test, X2=88.51			
	Intervention		Control		Intervention		Control	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Low	20	41/7	28	58/3	10	25/6	29	74/4
Medium	12	35/3	22	64/7	17	47/2	15	14/7
Intensive	1	4/3	2	8/7	6	26/1	2	8/7
	P= 0.000X2=50.48				P= 0.000X2=88.51			

Discussion

The aim of this was to investigate the effects of physical activity training on occupational burnout of employees.

Our results illustrated that there is a significant relation between employee burnout and physical activity (p=0.000) indicating that increasing physical activity decreases burnout. These findings are consistent with other studies. Carson (2010) showed that physical activity reduces the emotional exhaustion in teachers(18). Brown (2011) demonstrated that physical activity, especially aerobic exercise can reduce stress and burnout in staff(19). In our study, the majority of participants had low physical activity, which indicates inactivity and physical weakness among the employees. Exercise can influence individuals' emotional stress and its consequences including depression, anxiety, anger, tension etc. Salieh believed that people with high physical activity are less prone to mental damages, and various researchers have proved that exercise and physical activity can reduce mental pressure(9, 20).

Regarding occupational burnout, emotional exhaustion had the highest score in the participants which is similar to Rahmani(5), Liakopolou(21)and Sotodeh(22)and Ahola(23)studies. Emotional exhaustion is a condition in which a person loses his emotional strength and is not able to communicate with others emotionally. When emotional exhaustion continues, person's mental ability reduces, and he becomes irresponsible toward his profession and clients (depersonalization). In fact, depersonalization is a way to cope with emotional exhaustion. Emotional exhaustion and depersonalization have consequences such as decreasing self-esteem, decreasing

work satisfaction, refusing organizational responsibility, increasing relocation, and quitting job(5).We found a significant positive relation between emotional exhaustion and age, while Aziznejadin his study reported a negative relation(24).

This study indicated that a significant difference existed in emotional exhaustion mean score in intervention group in pre-test, and in control group in post-test. The depersonalization and work satisfaction mean scores in pre-test were higher in intervention group than that of control and athlete group, while in post-test the difference between means reduced and was similar to athlete group, indicating that physical activity has a positive effect on depersonalization and work satisfaction. Liakopolou in his study showed that work satisfaction, good management and accessibility to resources are some protective factors against burnout (21). The result of this study showed that the common level of activity among the staff in the three departments was low which demonstrated inactivity and physical weakness among the employees of different departments. Motefakr et al. also found similar results in their study indicating inactivity to beof a highest frequency among employees(25).

Kaewthummanukul in his study in2006 showed that physical activity reducesas age increases(26). We did not find a significant relation between marital status and physical activity, which is similar to Kaewthummanukul study. The single participants had more physical activity than married ones.

Due to lack of sport facilities, being busy and ignorance of positive benefits, the employees spend a little of their recreation time on exercise and physical activities. It is clear that with the advance in age especially after middle age, the level of physical activity reduces(27). We did not find a significant relation between age and physical activity level, which was consistent with the findings of SaneeNasab. The world statistics for inadequate physical activity (less than 2.5 hours a week) is 31-51% and the average is 41%. In our study, it was 45.7%, higher than the world average and similar to SanaeeNasab results (28). Being active and having physical activity increase employees performance and behavior in workplace(29).

Study limitation

Some of the department heads and the staff did not cooperate with us. The employees were too busy. The confounding factors such as age, education, place of residence and lack the ability to perform physical activity which might have affected the research results were excluded [b15].

Conclusions

Since inactivity is highly common among employees and causes emotional exhaustion, training sessions seems necessary for them. In addition providing proper exercise facilities and equipment may improve their physical activity. Suggestions for future studies include study on occupational groups in different locations and work areas and on both genders. Physical activity in a long-term follow-up group study is also recommended.

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