



Original Research Article

Organizational commitment among employees in the pharmaceutical industry. Is it affected by fatigue and job satisfaction?

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During the last decades working conditions remain a crucial factor associated with organizational commitment, fatigue and job satisfaction among employees in pharmaceutical industry. The aim of the present study was to explore the differences between groups with various levels of fatigue regarding organizational commitment and job satisfaction. The association of organizational commitment with job satisfaction was also examined. Participants of different sectors (N=102) working in pharmaceutical companies completed the Meyer and Allen Organizational Commitment Questionnaire, the Fatigue Assessment Scale (FAS) and the Employee Satisfaction Inventory (ESI). The results showed that there were statistically significant differences between non fatigued and fatigued employees concerning organizational commitment and job satisfaction. Moreover, a statistically significant correlation was observed between organizational commitment and job satisfaction. In conclusion, it seems that fatigue and job satisfaction affect organizational commitment.

Keywords: Organizational commitment, fatigue, job satisfaction, pharmaceutical industry

INTRODUCTION

During the last decades organizational commitment has gathered a lot of attention in the area of management. Organizational commitment refers to the degree to which an employee desires to remain with the enterprise by accepting the organization's goals (Bell and Themba, 2014).

On the other hand, job satisfaction is defined as employees' optimistic emotional, following his or her assessment regarding their job experiences and job situations (Eskildsen et al., 2010; Drydakakis, 2012; Robinson and Reio, 2012; Chatzoudes et al., 2015; Joung et al., 2015).

Job satisfaction also refers to employees' attitudes towards the conditions in the work environment that is

related to the perceived association between their needs as well as their expectations and what the organization really offers (Randeree and Chaudhry, 2012; Anari, 2012; Fiorillo and Nappo, 2014). Many studies have indicated that employees who are satisfied with their job are more likely to demonstrate a positive attitude and contribute more efforts in order to share their knowledge and skills with the organization (Gustainiene and Endriulaitiene, 2009; O'Leary et al., 2009; Elizerbeth and Zakkariya, 2015; Duxbury and Halinski, 2014).

Within a model related to the job satisfaction, many specialists assume that organizational commitment as well

as job satisfaction is distinct concepts but extremely interrelated. For instance, the ability of administrators of a company to provide a high level of job satisfaction may lead to high level of organizational commitment (Chen et al., 2015; Abu Raddaha et al., 2012; Adhikari and Gautam, 2010; Adhikari et al., 2011).

Fatigue is considered to be a personal experience and due to its subjectivity, there is a difficulty in defining (Billones et al., 2021). In fact, it is a complex consisting of biological, psychological and social procedures and can be described as a state, which is characterized by a decrease taking place in the efficiency of the individual and ability to work, while frequently accompanied by a feeling of irritability (Alikari et al., 2016). In the context of its etiology, fatigue can be separated into acute and chronic fatigue (Magnusson, 2001; Radbruch et al., 2008) while in terms of its aspects, they are often divided into physical fatigue and mental fatigue (Marcora et al., 2009).

The main characteristics of physical fatigue are related to difficulties as a result of reduced ability to perform physical work. Because of this situation, reduced control of movement, decreased endurance as well as a general feeling of distress may take place in the work environment (Gawron et al., 2001; Côté et al., 2005; Huysmans et al., 2010). These effects can cause lessened productivity, negatively affect the quality of work and reduce performance in the workplace, while they have also been associated with negative impacts on social relationships and activities (Yung, 2016). On the other hand, mental fatigue refers to the reduction in cognitive abilities and fewer willingness to perform according to the expectations and requirements of the project due to previous mental or physical effort (Van Cutsem et al., 2017).

Salehi and Gholtash (2011) investigated the relationship between burnout, job satisfaction and organizational citizenship behavior in a group of faculty members in Iran. The research findings revealed that job satisfaction had a negative impact on job burnout while burnout presented a negative impact on organizational citizenship behavior (Salehi and Gholtash, 2011). Jung and Kim (2012) examined the association between organizational commitment and fatigue among newspaper firm employees in Korea. Results presented that employees who were fatigued reported diminished commitment to the organization as well as increased turnover intention (Jung and Kim, 2012). Ciftcioglu (2011) studied the association of fatigue with occupational commitment among accountants in Istanbul. She found that mental fatigue had a partial mediating effect between occupational turnover intention and affective commitment (Ciftcioglu, 2011).

The number of studies conducted in Greece and those mainly that concern the impact of fatigue and job satisfaction on organizational commitment among employees working in pharmaceutical companies are insufficient. Therefore, the purpose of the current study was to initially investigate the differences between groups with various levels of fatigue regarding organizational commitment and job satisfaction. The association of

organizational commitment with job satisfaction was also examined. The main research hypothesis was that there will be a statistically significant effect of fatigue and job satisfaction on organizational commitment in the population under study.

MATERIALS AND METHODS

Research Design and Sample

The variables which were investigated were the rates of organizational commitment, fatigue as well as job satisfaction of employees who work in pharmaceutical industry.

We chose to perform quantitative cross-sectional study in the context of one-time measurement of results and the fact that this type of analysis is useful in public health to evaluate the prevalence of specific conditions in particular populations. This research involved personnel of various specialties (e.g. laboratory and administrative staff, medical visitors, managers etc.) working in Athens. In the present study, 102 individuals participated. For the selection of the sample, specific criteria were established such as a) being over 18 years old, b) working at least one year in the field of pharmaceutical companies and c) speaking the Greek language fluently. The presence of any psychiatric disorder was the only exclusion criterion.

Questionnaires

Initially, respondents completed the Organizational Commitment Questionnaire, which includes 18 statements based on the three-dimensional model of organizational commitment, according to Meyer et al. (1993). This tool evaluates both organizational commitment and its three dimensions (affective, continuance, normative). For each dimension the tool includes 6 statements. The employee responds using the Likert 5-point scale (Meyer et al., 1993; Allen and Meyer, 1990).

Participants then completed the "The Fatigue Assessment Scale (FAS)", which is a tool for assessing perceived fatigue and consists of 10 questions on a five-point Likert scale (1 = never to 5 = always), with a score of ranges between 10-50. Five questions are about physical and five questions are about mental fatigue. This scale is considered a reliable tool for measuring fatigue for both healthy people and people with diseases (Michielsen et al., 2003; Michielsen, De Vries et al., 2004; Zyga et al., 2015). Patients are categorized as "non-fatigued" if the FAS score is below 22, "fatigued" if the FAS score is higher or equal to 22 and "extremely fatigued" if the FAS score is higher or equal to 35 (Zyga et al., 2015).

The Employee Satisfaction Inventory - ESI (Koustelios and Bagiatis, 1997) was used to measure job satisfaction. This questionnaire was chosen because it explores all the dimensions that compose the concept of staff satisfaction, but also because its validity and reliability have been examined in similar surveys in Greece (Koustelios and

Table 1. Demographics and other characteristics of the participants

	N	%
gender		
men	54	52.9
women	48	47.1
education		
lyceum	9	8.8
University	60	58.8
postgraduate / doctoral	33	32.4
marital status		
unmarried	33	32.4
married - cohabitation agreement	60	58.8
divorced	6	5.9
widowed	3	2.9
specialty		
research / laboratory staff	15	14.7
medical visitors	36	35.3
administrative staff	18	17.6
senior executives (managers)	33	32.4
position of responsibility		
yes	63	61.8
no	39	38.2

Bagiatis, 1997; Koustelios and Kousteliou, 1998). The recording scale consists of a total of 24 items and has the following six subscales: Working Conditions, Salary, Nature of Work, Direct Supervisor, Organization as a whole and Promotion. To answer whether respondents considered each ability important, they used a five-point scale (1 = strongly disagree to 5 = strongly agree). Participants also filled out a form with their demographic and professional details.

Procedure

The researchers turned to various pharmaceutical companies to participate in the research. Questionnaires were distributed to all those who showed interest and wanted to participate. All participants in the survey were informed in detail about the purpose of the survey through the consent form they were asked to sign. In this form there was also a clear description of their right to withdraw data. The anonymity of the participants was ensured, as well as the confidentiality of the data. Completion of the questionnaires took approximately 10-15 minutes.

Statistical analysis

The socio-demographic profile of the sample was presented and in particular the quantitative variables were described with mean and standard deviation ($M \pm SD$) and the categorical variables with frequencies and percentages. Kolmogorov - Smirnov checked for the regularity of the sample. Spearman correlation, Kruskal-Wallis test and linear regression analysis were performed to investigate

the relationship among organizational commitment, fatigue and job satisfaction. All questionnaires demonstrated very good reliability (Cronbach α), that is 0.814 for the organizational commitment questionnaire, 0.896 for the fatigue questionnaire and 0.781 for the job satisfaction questionnaire. The statistical analysis was run with the statistical program IBM SPSS Statistics 23. The value $p < 0.05$ was considered to indicate statistical significance.

RESULTS

Sample characteristics

In the present study the total sample consisted of 102 people, of whom 52.9% were men and 47.1% women. The majority was university graduates (58.8%), married or with a cohabitation agreement (58.8%), medical visitors (35.3%) and having a position of responsibility (61.8%) (Table 1).

The mean age of the study participants was 43.3 years (± 7.66). The average total working hours was 13 ± 7.8 , the average working hours in the department was 8.17 ± 6.54 and the average weekly working hours was 38.5 ± 14.3 .

Also, 52.9% of the sample did not have fatigue, while 47.1% did. The mean of physical fatigue was 11.6 ± 3.3 , of mental fatigue was 8.97 ± 2.65 and the mean of total fatigue was 20.6 ± 5.4 . The mean of affective commitment was 20.7 ± 4.8 , continuance commitment was 18.9 ± 4.6 , normative commitment was 17.7 ± 4.7 and total commitment was 57.3 ± 10.9 . The average satisfaction with the working conditions was 18.9 ± 3.9 , the satisfaction with the salary 12.4 ± 3.3 , the satisfaction with the promotion 9.3 ± 2.3 , the satisfaction with the nature of the work 15.7 ± 3 , by the immediate supervisor 15.1 ± 4.1 and the satisfaction from the organization 13.1 ± 3.7 .

Main results

Regarding differences between levels of fatigue in relation to organizational commitment and job satisfaction, the results indicated that there was a statistically significant difference between non fatigued and fatigued employees concerning affective commitment. Specifically, non fatigued employees presented higher score of affective commitment compared to fatigued (57.75 versus 44.47 , sig. 0.023). Moreover, fatigued employees indicated higher score of continuance commitment compared to non fatigued (59.00 versus 44.83 , sig. 0.015). In relation to job satisfaction, non fatigued employees showed higher scores compared to fatigued in the dimensions of working conditions (60.08 versus 41.84 , sig. 0.002), nature of work (65.33 versus 35.94 , sig. 0.000) and organization (61.83 versus 39.88 , sig. 0.000) (Table 2).

In order to investigate the relation between organizational commitment and job satisfaction, correlation analysis was conducted. The results demonstrated that satisfaction from working conditions was positively correlated to affective and total commitment ($r = 0.314$,

Table 2. Differences of levels of fatigue regarding organizational commitment and job satisfaction

	Fatigue Cut Off Points	N	Mean Rank	Sig.
Affective Commitment	<22 non fatigued	54	57.75	0.023
	higher or equal to 22 fatigued	48	44.47	
	Total	102		
Continuance Commitment	<22 non fatigued	54	44.83	0.015
	higher or equal to 22 fatigued	48	59.00	
	Total	102		
Normative Commitment	<22 non fatigued	54	55.92	0.108
	higher or equal to 22 fatigued	48	46.53	
	Total	102		
Total Commitment	<22 non fatigued	54	53.42	0.487
	higher or equal to 22 fatigued	48	49.34	
	Total	102		
Working Conditions	<22 non fatigued	54	60.08	0.002
	higher or equal to 22 fatigued	48	41.84	
	Total	102		
Salary	<22 non fatigued	54	53.92	0.378
	higher or equal to 22 fatigued	48	48.78	
	Total	102		
Promotion	<22 non fatigued	54	56.08	0.094
	higher or equal to 22 fatigued	48	46.34	
	Total	102		
Nature of work	<22 non fatigued	54	65.33	0,000
	higher or equal to 22 fatigued	48	35.94	
	Total	102		
Direct supervisor	<22 non fatigued	54	55.92	0.106
	higher or equal to 22 fatigued	48	46.53	
	Total	102		
Organization	<22 non fatigued	54	61.83	0.000
	higher or equal to 22 fatigued	48	39.88	
	Total	102		

Table 3. Job satisfaction predicting affective commitment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.469	2.103		2.125	.036
	Working conditions	.039	.122	.031	.315	.753
	Salary	.037	.117	.026	.318	.751
	Promotion	.245	.157	.117	1.564	.121
	Nature of work	-.091	.134	-.057	-.678	.500
	Direct supervisor	.218	.080	.188	2.735	.007
	Organization	.836	.128	.648	6.515	.000

a. Dependent Variable: affective commitment

sig. 0.001, $r = 0.203$, sig. 0.040). Also, satisfaction from salary was positively correlated to affective ($r = 0.345$, sig. 0.000), normative ($r = 0.238$, sig. 0.016) and total commitment ($r = 0.260$, sig. 0.008). Satisfaction from promotion was positively correlated to affective and total commitment ($r = 0.431$, sig. 0.000, $r = 0.216$, sig. 0.029). Moreover, satisfaction from nature of work was positively correlated to affective and total commitment ($r = 0.447$, sig. 0.000, $r = 0.271$, sig. 0.006). Satisfaction from direct supervisor was positively correlated to affective ($r = 0.519$, sig. 0.000), normative ($r = 0.636$, sig. 0.000) and total commitment ($r = 0.575$, sig. 0.000). Finally, satisfaction from

organization was positively correlated to affective ($r = 0.698$, sig. 0.000), normative ($r = 0.500$, sig. 0.000) and total commitment ($r = 0.557$, sig. 0.000).

A series of multiple linear regression analyzes was then performed. Initially to test whether the dimensions of job satisfaction could significantly predict participants' ratings of affective commitment (Table 3). The results showed that satisfaction from direct supervisor and satisfaction from organization predicted affective commitment ($B = 0.218$, sig. 0.007, $B = 0.836$, sig. 0.000).

Regarding continuance commitment, the results indicated that satisfaction from promotion significantly

Table 4. Job satisfaction predicting continuance commitment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.298	3.167		6.410	.000
	Working conditions	.148	.184	.125	.800	.426
	Salary	-.115	.176	-.083	-.656	.514
	Promotion	-.610	.236	-.304	-2.583	.011
	Nature of work	.002	.202	.001	.011	.991
	Direct supervisor	-.028	.120	-.026	-.236	.814
	Organization	.254	.193	.206	1.313	.192

a. Dependent Variable: Continuance commitment

Table 5. Job satisfaction predicting normative commitment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.148	2.458		3.722	.000
	Working conditions	-.211	.143	-.172	-1.475	.144
	Salary	-.011	.137	-.008	-.080	.936
	Promotion	-.050	.183	-.024	-.272	.786
	Nature of work	-.304	.157	-.193	-1.940	.055
	Direct supervisor	.475	.093	.413	5.108	.000
	Organization	.819	.150	.638	5.461	.000

a. Dependent Variable: Normative commitment

Table 6. Job satisfaction predicting total commitment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.914	5.794		5.853	.000
	Working conditions	-.025	.338	-.009	-.074	.941
	Salary	-.089	.322	-.027	-.277	.782
	Promotion	-.415	.432	-.086	-.959	.340
	Nature of work	-.392	.369	-.108	-1.063	.290
	Direct supervisor	.665	.219	.252	3.031	.003
	Organization	1.910	.354	.648	5.398	.000

a. Dependent Variable: Total commitment

predicted participants' ratings of continuance commitment (B= -0.610 sig. 0.011) (Table 4).

Regarding normative commitment, the results indicated that satisfaction from direct supervisor and satisfaction from organization predicted normative commitment (B=0.475, sig. 0.000, B=0.819, sig. 0.000) (Table 5).

Regarding total commitment, the results indicated that satisfaction from direct supervisor and satisfaction from organization predicted total commitment (B=0.665, sig. 0.003, B=1.910, sig. 0.000) (Table 6).

DISCUSSION

The purpose of the current study was to initially investigate

the differences between groups with various levels of fatigue regarding organizational commitment and job satisfaction in employees of pharmaceutical companies in the area of Athens. The association of organizational commitment with job satisfaction was also examined.

At first, it seems that the group of employees in pharmaceutical companies who are non-fatigued indicate more organizational commitment as well as more job satisfaction. This finding is in full agreement with similar studies. In particular, Salehi and Gholtash (2011) investigated the relationship between burnout, job satisfaction and organizational citizenship behavior in a group of faculty members in Iran. The research findings revealed that job satisfaction had a negative impact on job burnout while burnout presented a negative impact on

organizational citizenship behavior (Salehi and Gholtash, 2011). Jung and Kim (2012) examined the association between organizational commitment and fatigue among newspaper firm employees in Korea. Results presented that employees who were fatigued reported diminished commitment to the organization as well as increased turnover intention (Jung and Kim, 2012). Ciftcioglu (2011) studied the association of fatigue with occupational commitment among accountants in Istanbul. She found that mental fatigue had a partial mediating effect between occupational turnover intention and affective commitment (Ciftcioglu, 2011).

Moreover, the present study shows that there is a strong relation between organizational commitment and job satisfaction. Many studies have indicated that employees who are satisfied with their job are more likely to demonstrate a positive attitude and contribute more efforts in order to share their knowledge and skills with the organization (Eskildsen et al., 2010; Drydakis, 2012; Robinson and Reio, 2012; Chatzoudes et al., 2015; Joung et al., 2015). Last but not least, this study had some limitations. Firstly, due to its small sample, it is noted that the results can be further investigated in larger samples from other pharmaceuticals allowing future comparisons. Secondly, in future research there may be the possibility of investigating other factors (sociodemographic characteristics and working conditions) that are related to or affect the levels of organizational commitment, apart from fatigue and job satisfaction.

Consequently, the results showed that there were differences between non fatigued and fatigued employees concerning organizational commitment and job satisfaction. Moreover, a correlation was observed between organizational commitment and job satisfaction. In conclusion, it seems that fatigue and job satisfaction affect organizational commitment.

These undesirable effects reduce employees' quality life. A probable way for managers to cope with employees' physical and mental fatigue is creating with them a good level of communication (Kelly and Herman, 2022; Kim and Lee, 2009). According to Kelly and Herman (2022), social support and participation in decision making process are effective ways in order to deal with fatigue in terms of communication for managers. In particular, the participation of employees in decision-making process is crucial factor regarding increasing personal accomplishment as well as reducing stress.

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Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this manuscript.

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