

Evaluation of the relationships between burnout, eating behavior and quality of life in academicians

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Abstract. *Background:* Burnout may lead to decreased healthy eating behaviors. Particularly intense and strenuous working conditions in academicians can increase burnout and decrease quality of life by negatively affecting health. *Objectives:* The study was conducted to examine the burnout level, eating behaviors, and quality of life of academicians and to reveal the relationship between these parameters. *Methods:* 194 academicians who accepted to participate voluntarily in the study were included. A questionnaire form about the socio-demographic characteristics, Dutch Eating Behaviors Questionnaire (DEBQ), Maslach Burnout Inventory-Educator Survey, and Quality of Life Questionnaire -Short Form (SF-36) were applied to the participants. *Results:* Emotional eating score has positive relationships with emotional burnout and depersonalization and has a negative relationship with personal success ($p \geq 0.05$). The emotional eating score has positive meaningless relationships with physical function and social functionality which are sub-parameters of quality of life. While positive relationships between personal success and all parameters other than the pain from the quality of life sub-parameters are observed. *Conclusions:* Emotional eating and burnout can have negative effects on the academicians' quality of life. Taking precautions to increase healthy nutrition and physical activity in academic staff and being directed by experts in their field can be effective in preventing this problem.

Key words: Academician, Eating Behavior, Burnout, Quality of Life

Introduction

Universities are one of the most affected places by globalization. Globalization, besides many positive results, has led academics to take its place among burnout-prone professional groups due to reasons such as changing resources, marketing, and bureaucracy (1). Excessive workloads, challenging resources, and management skills exceeding expectations cause stress and health problems in the academician. Stress and burnout bring unhealthy eating habits or overeating in its wake (2). Disorders in eating behavior are examined under three headings; external eating: eating out of

meal and more unhealthy overeating; emotional eating: overeating depending on mood; restrictive eating refers to poor meal control (3).

Quality of life is the well-being that the individual feels in many factors that concern physical, functional, emotional, and social conditions (4). It also covers the individual's physical functions, psychological state, social relationships inside and outside the family, environmental effects, and beliefs. Health-related quality of life, on the other hand, expresses the ability of individuals to perform their functions in improving health and the physical, mental and social space that individuals perceive in their lives. Although it is very

difficult to measure the quality of life, it can be determined by measuring the factors affecting the quality of life and their changes. Increasing the health-related quality of life is one of the parameters that the health field emphasizes most and can measure its success (5).

In addition to the fact that burnout, which affects health-related quality of life, has negative consequences for organizations and individuals in today's business life, it continues to be the subject of many types of research especially on students, healthcare professionals, and academics (6-9). The concept of burnout was introduced into the literature by Freudenberger in the 1970s (10). This concept manifests itself as a reflection of emotional exhaustion, lack of energy, physical fatigue, psychological disturbances, and increased pessimism. Besides, the phenomenon of burnout can cause the accumulation of negative emotions to emerge. The most dangerous aspect of burnout is that it is not just a temporary period, but it is long term. It has also been identified by the World Health Organization as its occupational disease and has taken its place in the International Classification of Diseases (ICD-11) (11).

Burnout manifests itself primarily as mild symptoms in the physical sense. These symptoms are listed as tiredness and fatigue, headache, drowsiness, sleep disturbances, etc. If the measure is not taken, in the ongoing process; colds, reduced resistance to infections, weight loss or obesity, respiratory distress, general pain and pain, gastrointestinal diseases, high blood pressure, high cholesterol, muscle strains, heart palpitations, and skin lesions can be observed, which can affect health-related quality of life parameters (12-13).

Although the relationship between burnout and eating behaviors and quality of life has been demonstrated in different studies, there is no study evaluating this relationship in the context of academicians (3, 14, 15). To draw attention to this deficiency in the literature and to create reference data, it was aimed to examine the burnout level, eating behaviors and quality of life of the academicians, and to reveal the relationship between these parameters.

Methodology

The presented study has designed a descriptive and cross-sectional study. The study aimed to reveal the

burnout, eating behavior, and health-related quality of life, and to examine the changes and relationships of these parameters according to age, gender, body mass index, total working duration.

Subjects

Ethics Committee Approval was obtained from the Okan University Health Sciences Research Ethics Committee with decision number 12 dated 08/06/2018 for this study. Written consent was obtained from the participants in accordance with the principles of the Helsinki Declaration. 698 instructors and lecturers who worked at a Private University in the 2017-2018 academic year constitute the universe of the research. The sample of the study was calculated by power analysis with a 5% error margin, 90% confidence interval, and 194 people were planned to be included.

While the inclusion criteria are being a permanent academician at the designated foundation university, not having a chronic disease, and being over the age of 18; exclusion criteria were determined as having any surgery in the last year, using antipsychotic, antimanic, or antidepressant drugs and being a disabled individual. Accordingly, 194 academicians (average age: 42.27 ± 13.67 years; 44.3% male ($n_{\text{male}} = 86$), 55.7% female ($n_{\text{female}} = 108$)) from different faculties in the foundation university were included.

Measurement Tools

A questionnaire with socio-demographic information, Dutch Eating Behaviors Questionnaire (16), Maslach Burnout Inventory- Educator Survey, (17) and Quality of Life Questionnaire - Short Form (SF-36) (18) were applied to the participants.

The Dutch Eating Behaviors Questionnaire (DEBQ) is a 33-item inventory that measures emotional (0 to 65 points, 13 items), external (0 to 50 points, 10 items), and restrictive eating behaviors (0 to 50 points, 10 items). The frequency of each question is scored by a 5-point Likert scale (1: never - 5: very often). There is no cut-off point in the scoring of the test. 3 sub-parameters are evaluated within themselves, being high (total scores divided by the number of questions, presented between 0 and 5) indicates negativity

regarding eating attitude. It has been translated into the Turkish language and its validity and reliability study has been done (19).

Maslach Burnout Inventory- Educator Survey (MBI-ES) consists of 22 questions and the frequency of symptoms is scored with a 7-point Likert scale (0: never - 6: always). Interpretation is done on 3 parameters; emotional exhaustion (0 to 54 points, 9 items), depersonalization (0 to 30 points, 5 items), and personal success (0 to 32 points, 8 items). The high emotional exhaustion and depersonalization score and the low personal achievement score indicate that burnout is at an advanced level. Turkish validity reliability of the inventory was studied (20).

SF-36 evaluates the health-related quality of life of the individual with 8 sub-parameters such as physical function, pain, physical role, emotional role, well-being, social function, vitality, and mental health perception. It consists of 36 items (2, 3, 5 or 6-point Likert scoring) evaluated according to the statement of the person for the last four weeks. The high score from the subscales (all parameters are presented between 0 and 100) indicates good health. Its validity and reliability in Turkish have been reported (21, 22).

Statistical analysis

IBM Statistics 22 was used for statistical analysis. 95% confidence interval and $p < 0.05$ value were considered significant. The distribution was determined by Shapiro-Wilk and Kolmogorov-Smirnov tests. Parametric tests for normally distributed data and non-parametric tests for abnormally distributed data were used. Variables; mean, standard deviation, defined by frequency values. The correlation was done with Spearman Correlation Test.

Results

The average age of the participants ($n = 194$) is 42.27 ± 13.67 and the age range varies between 23 and 79. The majority of the participants were 59.8% ($n = 118$) married, 34.5% of the rest ($n = 67$) were single and 5.7% ($n = 11$) were divorced. The distribution of age, marital status, and body mass index by women - men and total participants are summarized in Table 1.

Participants are not homogeneously distributed according to age, marital status, and body mass index ($p=0.001$).

The emotional exhaustion average of the participants' burnout sub-parameters is 33.88 ± 7.36 (18 - 54), the depersonalization average is 14.76 ± 4.15 (8 - 30) and the personal success average is 24.13 ± 4.86 (10 - 33). On the other hand, while the total eating mean of the eating behavior scale is 2.56 ± 0.61 (1.18-4.30), the restrictive eating average of its sub-parameters is 2.56 ± 0.61 (1.18-4.30), the emotional eating average is 2.13 ± 1.16 (1 - 5) and the external eating average is 2.75 ± 0.62 . (0.90-4.10) d. The mean of burnout and eating behavior of the participants by gender did not show a significant difference ($p \geq 0.05$, Table 2).

The mean scores of the sub-parameters of the quality of life scale were calculated separately according to total and gender and detailed in Table 3. In addition, reference values for Turkish society are added to the same table (21). It is seen that the pain sub-parameter is well below the reference value (81 - 85) with an average of 19.72 ± 23.19 (0-75). The physical function sub-parameter is the closest parameter to the reference values (80-87) with an average of 85.54 ± 13.02 (25 - 100). There was no significant difference in distribution by gender ($p \geq 0.05$).

A weak significant relationship was observed between the total score of the eating behavior scale and the age and body mass index ($r: -0.18$ and $r: 0.20$, $p = 0.001$, relatively). While eating behavior total score increases as age decreases, it increases as body mass index increases. There was a moderately significant relationship ($p = 0.001$, $r: 0.57$) between emotional exhaustion and desensitization, and a weak significant inverse relationship between emotional exhaustion and personal success ($p = 0.03$, $r: -0.15$). As personal success increases, emotional exhaustion tends to decrease. The relationship of all parameters is shown in Table 4.

The relationship between general health perception, physical role difficulty, energy, mental health, social functionality, and emotional role difficulty, and burnout sub-parameters, which are among the quality of life sub-parameters, were determined ($p \leq 0.05$). While the relationships between personal success and quality of life are in the same direction, relationships with emotional exhaustion and depersonalization are opposite. The relationship and meanings between the

Table 1. Distribution of participants according to their socio-demographic characteristics in groups

	Female (n:108)	Male (n:86)	Total (n:194)	P
Age	37.24 ± 10.80	48.59 ± 14.33	43.27 ± 13.68	0.001**
23 - 30	39 (%36.1)	14 (%16.3)	53 (%27.3)	0.001**
31 - 38	40 (%37.0)	14 (%16.3)	54 (%27.8)	
39 - 46	10 (%9.3)	12 (%14.0)	22 (%11.3)	
47 - 54	9 (%8.3)	11 (%12.8)	20 (%10.3)	
55 - 62	7 (%6.5)	22 (%25.6)	29 (%14.9)	
63 - 70	2 (%1.9)	11 (%12.8)	13 (%6.7)	
71 - 79	1 (%0.9)	2 (%2.3)	3 (%1.5)	
Marital Status				
Single	45 (%41.7)	22 (%25.6)	67 (%34.5)	0.01*
Married	55 (%50.9)	61 (%70.9)	116 (%59.8)	
Divorced	8 (%7.4)	3 (%3.5)	11 (%5.7)	
Body Mass Index (kg/m²)				
< 18	4 (%3.7)	1 (%1.2)	5 (%2.6)	0.001**
18 - 25	90 (%83.3)	45 (%52.3)	111 (%57.2)	
25 - 30	7 (%6.5)	28 (%32.6)	60 (%30.4)	
30 - 35	7 (%6.5)	12 (%14.0)	15 (%7.7)	

*, $P < 0.05$, **, $P < 0.001$

Table 2. Average scores of burnout and DEBQ sub-parameters of participants

	Female		Male		Total		p
	Avg.± sd	Min-Max	Avg.± sd	Min-Max	Avg.± sd	Min-Max	
Burnout sub-parameters							
Emotional exhaustion	34.60±8.01	18-54	32.98±6.38	23-49	33.88±7.36	18-54	0.15
Depersonalization	15.08±4.38	9-30	14.36±3.83	8-27	14.76±4.15	8-30	0.33
Personal success	24.02±5.12	10-33	24.28±4.55	12-32	24.13±4.86	10-33	0.80
DEBQ sub-parameters							
Restrictive eating	2.91±0.80	1-5	2.93±0.76	1.00-4.70	2.56±0.61	1.18-4.30	0.87
Emotional eating	2.27±1.30	1-5	1.95±0.95	1.00-4.77	2.13±1.16	1-5	0.36
External eating	2.78±0.63	1.4-4.1	2.71±0.62	0.90-4.10	2.75±0.62	0.90-4.10	0.45
Dutch total score	2.62±0.68	1.18-4.30	2.48±0.48	1.55-3.82	2.56±0.61	1.18-4.30	0.22

DEBQ: Dutch Eating Behaviors Questionnaire, Avg: Average; sd: standard deviation; min-max: minimum – maximum

Table 3. Average scores of quality of life (SF-36) sub-parameters of the participants

	Female		Male		Total			SF-36 reference values for Turkish society	
	Avg.± sd	Min-Max	Avg.± sd	Min-Max	Avg.± sd	Min-Max	p	Female	Male
Quality of life (SF-36) sub-parameters								Avg.± sd	Avg.± sd
Physical function	85.97±13.07	35-100	85.00±13.02	20 -100	85.54±13.02	20-100	0.53	80.6±21.7	87.2±17.1
Physical role difficulty	56.25±22.70	0 -100	52.91±23.14	0 -75	54.77±22.90	0-100	0.30	82.9±28.6	89.8±19.3
pain	19.07±23.65	0-75	20.52±22.71	0 -75	19.72±23.19	0-75	0.39	81.0±20.2	85.1±16.4
General health perception	38.06±9.78	9 -62	38.66±9.06	14 -57	38.33±9.45	9-62	0.58	69.1±16.9	73.6±14.9
Energy / vitality / vitality	38.61±11.29	10-60	37.79±9.90	5 -55	38.25±10.68	5 -60	0.46	63.4±13.7	65.7±11.9
Social function-ality	45.19±8.84	25 -50	43.81±10.13	25 -50	44.58±9.43	25 -50	0.84	90.1±12.9	91.7±12.8
Emotional role difficulty	55.66±29.72	0 -100	54.90±28.96	0 -100	55.32±29.31	0 -100	0.93	89.0±22.5	92.8±15.1
Mental health	52.81±8.47	24 -72	51.95±9.27	24 -64	52.43±8.82	24 -72	0.72	70.1±11.4	71.0±10.6

Avg: Average; sd: standard deviation; min-max: minimum – maximum

Table 4. Relationships between participants' DEBQ, burnout scores and quality of life sub-parameters

	DEBQ	BURNOUT SUB-PARAMETERS						
		Emotional Exhaustion		Depersonalization		Personal Success		
	R	P	R	P	R	P	R	P
Age	-0.18	0.001*	-0.37	0.60	-0.09	0.18	-0.91	0.20
BMI	0.20	0.001*	-0.35	0.63	-0.13	0.06	-0.06	0.36
Institution year	0.00	0.96	0.11	0.11	-0.02	0.71	-0.02	0.70
DEBQ sub-parameters								
External eating	0.53	0.001**	0.12	0.09	0.17	0.01*	0.01	0.81
Restrictive eating	0.39	0.001**	-0.001	0.91	0.01	0.83	0.05	0.43
Emotional eating	0.89	0.001**	0.06	0.40	-0.05	0.41	-0.06	0.36
Burnout sub-parameters								
Personal success	-0.02	0.75	-0.15	0.03*	-0.07	0.32	1.00	-
Emotional exhaustion	0.26	0.08	1.00	-	0.57	0.001*	-0.15	0.03*
Depersonalization	0.01	0.82	0.57	0.001**	1.00	-	-0.07	0.32

DEBQ: Dutch Eating Behaviors Questionnaire, *: $P < 0.05$, **: $P < 0.001$

Table 4. Relationships between participants' DEBQ, burnout scores and quality of life sub-parameters (continued)

QUALITY OF LIFE PARAMETERS																
	Physical function		Mental health		Social functionality		Emotional role difficulties		Physical role difficulty		Pain		General health perception		Energy / liveliness/ vitality	
	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P
Age	-0.06	0.34	0.05	0.46	0.04	0.54	-0.11	0.12	-0.04	0.50	0.03	0.62	-0.09	0.16	-0.11	0.09
BMI	-0.04	0.56	0.06	0.38	-0.04	0.50	-0.07	0.33	-0.06	0.35	-0.03	0.61	-0.11	0.12	-0.02	0.75
Institution year	0.06	0.39	0.01	0.78	-0.02	0.76	-0.04	0.55	-0.05	0.46	0.02	0.76	-0.08	0.23	0.01	0.83
DEBQ sub-parameters																
Dutch Eating Points	0.02	0.71	-0.03	0.64	0.09	0.18	-0.01	0.85	-0.07	0.33	-0.08	0.25	0.00	0.93	-0.01	0.82
External eating	-0.08	0.23	-0.03	0.67	0.05	0.42	-0.04	0.50	-0.05	0.41	-0.07	0.29	-0.08	0.26	-0.03	0.65
Restrictive eating	0.04	0.54	0.01	0.89	-0.01	0.79	-0.00	0.97	-0.06	0.35	0.03	0.60	0.09	0.18	-0.00	0.98
Emotional eating	0.04	0.50	-0.03	0.60	0.11	0.11	0.00	0.96	-0.03	0.64	-0.09	0.18	-0.00	0.91	-0.00	0.91
Burnout sub-parameters																
Personal success	-0.01	0.84	0.35	0.001**	0.16	0.02*	0.25	0.001*	0.19	0.001*	-0.12	0.08	0.21	0.001**	0.12	0.09
Emotional exhaustion	-0.57	0.42	-0.27	0.001**	-0.21	0.001*	-0.22	0.001*	-0.31	0.001**	0.05*	0.45	-0.19	0.001**	-0.14	0.04*
Depersonalization	0.02	0.70	-0.27	0.001**	-0.12	0.09	-0.19	0.001**	-0.26	0.001**	0.08	0.26	-0.12	0.08	-0.17	0.01*

DEBQ: Dutch Eating Behaviors Questionnaire, *: $P < 0.05$, **: $P < 0.001$

quality of life parameters, eating behavior and burnout parameters are detailed in Table 5.

Discussion

In our study, socio-demographic data, eating behaviors, burnout, and quality of life of the academicians were examined and their relationships were revealed. Khan et al. (8) reported that the relationship between burnout and sociodemographic data, such as gender, age, academic position, may be at the individual or organizational level. In their studies, young academics were reported to be more prone to burnout. It has been shown that complex structures, expectations, environmental and personal factors in universities also make academics difficult with the effect of global change (23). In our study, although personal success is high, emotional exhaustion and depersonalization are at medium levels. However, if these parameters increase, professional performance indicators such as personal success, productivity, job satisfaction are thought to be negatively affected (8, 24).

The study examining the burnout and eating behaviors of health professionals from 7 different countries work stressors exhaust employees' mental and physical resources and lead to exhaustion/burnout and to health problems, with health-impairing behaviors being one of the potential mechanisms, linking burnout to ill health. The study aims to explore the associations between burnout and fast food consumption, exercise, alcohol consumption and painkiller use in a multinational sample of 2623 doctors, nurses and residents from Greece, Portugal, Bulgaria, Romania, Turkey, Croatia and Macedonia, adopting a cross-national approach. Methods: Data are part of the international cross-sectional quantitative ORCAB survey. The measures included the Maslach Burnout Inventory and the Health Behaviors Questionnaire. Results: Burnout was significantly positively associated with higher fast food consumption, infrequent exercise, higher alcohol consumption and more frequent painkiller use in the full sample, and these associations remained significant after the inclusion of individual differences factors and country of residence. Cross-national comparisons showed significant differences

in burnout and health behaviors, and some differences in the statistical significance and magnitude (but not the direction, including Turkey, is similar to our study in terms of age and education levels (2). The highest values in emotional exhaustion and depersonalization have been reported from Turkey (27.88 ± 12.88 and 9.99 ± 7.71 , respectively). In our study, much higher results (33.88 ± 7.36 and 14.76 ± 4.15 , respectively) were revealed. As Evers et al. (25) stated, burnout is mostly observed in professions such as medical personnel and especially teachers, in persons with both a high sense of ideal and a high degree of interaction with other people in their profession. Job stressors such as teaching, research, supervision, publication, career development, and interpersonal conflicts are particularly high among academics (26). We think that our higher results may be related to these situations.

Another study on academics ($n = 366$) showed an inverse proportion to our quality of life and burnout study (14). It has been reported that the quality of life of male academicians is higher than that of women. In our study, although the quality of life of male academicians seems higher than women, there is a small difference that is not significant ($p > 0.05$).

In our study, in all the sub-parameters related to health-related quality of life, there is a decrease in Turkish society compared to normal values. While the lowest difference (5 points) was observed in general health perception, the highest difference (45 points) was seen in social function. There was no significant difference between male and female academics. It is important to note that the quality of life is negatively affected, and the burnout levels are high regardless of gender.

Adequate and balanced nutrition is very important for optimal health outcomes. While individuals in the community prefer healthy foods in line with the recommendations, some individuals may observe nutritional restrictions and eating behavior disorders that may adversely affect health (27). Eating behavior is affected by many factors (28, 29). According to the BMI classification, it is 2.8% weak, 44.8% normal, 41% overweight and 11.4% obese according to the BMI classification in a study conducted by academicians with and without obesity (30). The BMI classification of the individuals who participated in our study was similarly 2.6% weak, 57.2% normal, 30.4% overweight and 7.7% obese. In the same

study, it was stated that body weight increased according to age, marital status, gender, and academic title.

Socioeconomic status, hormones, emotions, neuropsychological mechanisms are some other factors affecting eating behavior (29). For example, in case of negative affect, problematic eating behaviors, which are expressed as eating attitude disorder, are observed in young people to deal with anxiety and stress (31). In our study, a significant relation was found between the “external eating” sub-factor of the DEBQ scale, which expresses unhealthy and overeating, and the “depersonalization” of the burnout scale, which means that employees behave indifferently and carelessly towards the people they serve. An academic career is a very long and tiring process. The process that develops with the difficulty of the relationships people have in their work and the increasing beliefs that something goes wrong depending on this result, confronts people with burnout, an important problem of the modern age (32). Increased depersonalization in individuals in our study may cause external eating behaviors, which may result in eating behavior disorder. Anxiety and anxiety in business life are important factors affecting eating behavior. In our study, as BMI increases, eating behavior total score increases. It has been demonstrated that emotional eating is more common in people with low body mass index and high body mass index. Individuals with low BMI tend to eat emotionally as a method of coping with both negative emotions accompanying negative body perception and negative emotions they experience in general life, as in individuals with high BMI (33).

Conclusion

Considering that the factors determining eating behavior, burnout, and quality of life in academicians are far below normal values, it is recommended to follow a detailed assessment of risk factors and apply informative and encouraging initiatives for academicians to acquire adequate and balanced eating and physical activity habits. The high correlation of mental, social, emotional, and physical quality of life indicators with burnout shows that academics are at risk for psychosocial health. It is necessary to give more place to studies in which academicians are evaluated in terms of

all physical, social, and psychological factors, such as studies done to evaluate and improve the health, sociability, and psychology of students in universities.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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