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Determining Stress and Performance Levels of Academics: A Cross-Sectional Study

Akademisyenlerin Stres ve Performans Düzeylerinin Belirlenmesi: Kesitsel Bir Çalışma

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Abstract

Aim: The study aimed to assess stress and performance levels in academics and examine the correlation between their descriptive characteristics with stress and performance levels.

Method: We conducted a descriptive study with 315 academics and collected the data via a descriptive survey form, the Stress Evaluation Scale and the Performance Evaluation Scale.

Results: The stress scores of the academics were found to be moderate 32.24 (SD=7.26). It was determined that institution-oriented performance scores were 16.99 (SD=2.00), teamwork-oriented performance scores were 21.44 (SD=3.10), and total performance scores were 38.44 (SD=4.61).

Conclusion: It was concluded that the increase in academic positions caused a decrease in performance, and that the stress level of academics was higher among those who were young, single, childless, had negative work-related issues, did not eat regularly, had chronic diseases, and used drugs and alcohol regularly.

Keywords: Education, performance, stress, academics.

Öz

Amaç: Çalışma, akademisyenlerin stres ve performans düzeylerini belirlemeyi ve tanıtıcı özellikleri ile stres ve performans düzeyleri arasındaki ilişkiyi incelemeyi amaçladı.

Yöntem: Tanımlayıcı tipteki araştırma, 315 öğretim elemanı ile gerçekleştirildi ve veriler "Tanıtıcı Bilgi Formu, Stres Değerlendirme Ölçeği ve Performans Değerlendirme Ölçeği" ile toplandı.

Bulgular: Akademisyenlerin, stres puanları orta düzeyde 32,24 (SS=7,26) bulundu. Kurum odaklı performans puanlarının 16,99 (SS=2,00), takım çalışması odaklı performans puanlarının 21,44 (SS=3,10) ve toplam performans puanlarının 38,44 (SS=4.61) olduğunu belirlendi.

Sonuç: Akademisyenlerin, görevindeki yükselmenin performans düşüşüne neden olduğu ve genç, bekâr, çocuğu olmayan, işiyle ilgili olumsuzlukları olan, düzenli beslenmeyen, kronik hastalığı olan, düzenli ilaç ve alkol kullananların stres düzeyinin daha yüksek olduğu sonucuna varıldı.

Anahtar Sözcükler: Eğitim, performans, stres, akademisyen.

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Introduction

Stress is an increasingly prevalent problem experienced by individuals, impairing their internal and external balance and posing a threat to their mental well-being. It significantly affects the physical, developmental, emotional, intellectual, social, and mental state of individuals and may cause significant damage (Ay, 2016; Korkmaz and Ceylan, 2012).

The positive or negative factors that people encounter in working life, which is a large part of their daily lives, affect their quality of life. Due to competition and workload which have increased with the rapid development of technology and globalization, employees are exposed to intense stress. One of the most important factors negatively affecting the performance of employees is the stress experienced by individuals. However, individuals have different perceptions of self and body awareness, and different perspectives, experiences, and expectations of relationships, incidents, and changes. Therefore, stress experienced by employees has a different impact on their work performance. Additionally, moderate levels of stress increase performance, while high levels of stress negatively affect performance (Ay, 2016; Gökgöz and Altuğ, 2014; Korkmaz and Ceylan, 2012; Salami et. al., 2010; Söyler, 2018; Tonbul and Aykanat, 2019).

Performance is the evaluation of how well employees perform a task under certain conditions (Korkmaz and Ceylan, 2012). In this context, when individuals exposed to stress waste their energy to cope with stress, it may lead to their inability to perform their tasks and be successful. A decrease in individual performance may affect other employees in the workplace, leading to a decrease in workplace productivity and financial losses. Therefore, it is important to manage stress and develop strategies to cope with it. A moderate level of stress can create new opportunities and empower people to fight against problems (George and Jones, 2012; Gökgöz and Altuğ, 2014; Korkmaz and Ceylan, 2012; Söyler, 2018)

It is important that academics who train future colleagues perform well, be successful in their jobs, and raise skilled professionals. It is known that workplace-related stress affects academics in terms of performance, academic work, job satisfaction, and state of health (Aydın et al., 2011). Examining the literature, we encountered too few studies investigating the correlation between stress and performance. When we searched the literature on stress and performance, especially among academics, we found that there were not many studies in the literature. Therefore, it is crucial to create resources for further studies, raise awareness of the issue, and prepare projects to train employees to cope with stress.

Method

Aim and Design of the Study: We conducted the study in a descriptive cross-sectional design to determine the stress and performance levels of academics and to examine the correlation between their descriptive characteristics and stress and performance levels.

Research Questions:
- Is there a correlation between the stress level and performance of academics?
- Is there a correlation between the descriptive characteristics and stress levels of academics?
- Is there a correlation between the descriptive characteristics and performance levels of academics?

Setting and Participants: The target population of the study consisted of 901 academics working in academic units of a university between May 2021 and November 2021. The study aimed to reach the entire population without sampling. However, we completed the study with 315 academics for reasons such as being absent from the university during the data collection process and not agreeing to participate in the study.

Data Collection Tools: We collected the data of the study using a descriptive data collection form, the Stress Evaluation Scale, and the Performance Evaluation Scale.
The Descriptive Survey Form: The form comprises questions including information such as age, gender, title, educational status, marital status, number of children, years of employment, satisfaction with the level of income, area lived for the longest period of time, state of health, smoking/using alcohol, regular diet, sleep, and exercise.
The Stress Evaluation Scale (SES): The 20-question scale was applied and tested for validity by Paşa (2007) and its Cronbach's Alpha value was found to be 0.85. In our study, the Cronbach's Alpha value was found to be 0.84. The scale score is calculated by summing up items in the scale. The score obtained from the scale varies from 20 to 60. An increase in the obtained score indicates an increase in the stress level.

The Performance Evaluation Scale (PES): The 14-question scale was applied and tested for validity by Paşa (2007), and its Cronbach's Alpha value was found to be 0.90. In our study, the Cronbach's Alpha value was found to be 0.88. The scale consists of two sub-dimensions. The first one is considered as performance for the institution. The alpha value of six items that make up the performance factor for the institution was found to be 0.83. The second one is considered as performance for teamwork. The Alpha value of eight items that constitute the performance factor for teamwork was found to be 0.81. The scores of the scale factors and the total scale score are calculated by summing the item scores. The performance factor score for the institution varies between 6 and 18, the performance factor scores for the job range between 8 and 24, and the total scale score ranges between 14 and 42. An increase in the sub-factor and total score indicates an increase in the level of performance.

Statistical Analysis: We analyzed the data collected in the study using the IBM SPSS for Windows v.22.0 program. In the evaluation of the data, we used numbers, percentages, means, and standard deviation as descriptive statistical methods. We used the Kolmogorov-Smirnov test to determine whether the data were normally distributed or not. In comparing quantitative continuous data between two independent groups, we used the t-test. For comparing quantitative continuous data among more than two independent groups, we used the one-way ANOVA test. For validity and reliability, we calculated Cronbach's α coefficients. To calculate the influence quantity, we used the Eta square and Cohen's d coefficients. To determine the correlation between the mean scale scores, we used Pearson's correlation analysis. We evaluated the findings acquired at a 95% confidence interval and a significance level of 5%.

Ethical Consideration: We obtained written permission from the relevant institution, research ethics committee approval from the ethics committee of the university (11.02.2021/6), permission to use the scale by e-mail from the person who had developed the scale, and consent from the academics who took part in the study.

Study Limitations: We conducted the present study with the academics in only one university. We evaluated the results according to the personal statements of the participants. They cannot be generalized to all academics. The use of self-report questionnaires is also a limitation.

Results

Descriptive characteristics of the academics

Of the participants, 43.8% were between 30 and 39 years old, 62.9% were male, 35.2% were Dr. lecturer, 57.1% had a PhD, 72.7% were married, 47.0% had no children, 97.5% were satisfied with their job, 63.8% perceived their income adequate, 36.8% had 0 to 5 years of work experience, 52.4% worked 9 to 10 hours a day, 35.9% had lived in the Black Sea region for the longest period of time, 43.5% were satisfied with their city, 60.6% rated their state of health as good, 85.4% had no chronic illnesses, 71.7% had no habit of smoking, 91.7% had no habit of drinking alcohol, 85.7% did not take medication regularly, 75.2% had a regular diet, 66.7% slept 7 to 8 hours a day and 44.1% did not do exercise.

The SES and PES scores of the academics

Table 1. Distribution of the SES and PES scores of the academics (N:315)

	Median	Mean	SD	Min-max	Cronbach's α
Total Stress	31.00	32.24	7.26	20-56	0.84
Corporation-oriented Performance	18.00	16.99	2.00	6-18	0.83
Teamwork-oriented Performance	22.00	21.44	3.10	8-24	0.81
Total Performance	40.00	38.44	4.61	14-42	0.88

Academics have very high institution-oriented performance scores (Mean=16.99, SD=2.00), teamwork-oriented performance scores (Mean=21.44, SD=3.10), total performance scores (Mean=38.44, SD=4.61) and moderate stress scores. We found that they have (Mean=32.24, SD=7.26). We determined that the scales used were highly reliable (Table 1).

The PES scores of the academics according to their descriptive characteristics

Table 2. Distribution of the mean PES subscale scores according to professional roles (N:315)

	n	Corporation-oriented	Teamwork-oriented Performance	Total Performance
Variable		**Mean (SD)**	**Mean (SD)**	**Mean (SD)**
Professional Roles				
Research Assistant[1]	78	17.38 (1.07)	21.77 (2.45)	39.15 (3.04)
Instructor[2]	95	16.72 (2.38)	21.36 (3.18)	38.07 (5.24)
Dr. Assistant Professor[3]	111	17.16 (1.77)	21.44 (2.99)	38.60 (4.09)
Associate Professor[4]	20	17.00 (1.49)	21.20 (3.79)	38.20 (4.81)
Professor[5]	11	14.91 (1.16)	20.27 (5.64)	35.18 (9.65)
F / p		4.604/**0.001*** 1>5, 2>5, 3>5	0.654 / 0.624	2.069 / 0.085

p<0.01

The study found no significant difference between the PES scores of the academics and the variables of age, gender, marital status, number of children, area lived in for the longest period of time, satisfaction with their city, educational status, job satisfaction, perceived adequacy of income, years of employment and time allocated to daily work (p>0.05). Additionally, we found no significant difference between the PES scores of the academics and their state of health, state of having a chronic illness, smoking status/drinking alcohol/taking medication regularly/having a regular diet, daily sleep duration, and exercise status (p>0.05).

The difference between the scores and the professional roles of the academics was statistically significant at a moderate level (p<0.05; eta-square: 0.06). We found that an increase in professional roles caused a decrease in performance. Professors had the lowest performance scores (Table 2).

The SES scores of the academics according to their descriptive characteristics

The study found no significant difference between the SES scores of the academics and their gender, area lived in for the longest period of time, time allocated for daily work, smoking status, daily sleep duration, and exercise status (p>0.05).

The difference between the age and professional roles of the academics and their SES scores was statistically significant at a moderate level (p<0.05; eta-square:0.06). We determined that academics between the ages of 40 and 49 had the lowest SES scores, and those who were younger than 29 years had the highest levels of stress. Associate professors had lower SES scores than others. The differences between the marital status and educational status of the participants and their SES scores were statistically significant at a low level (p<0.05; Cohen's d: 0.30 / eta-square: 0.03) (Table 3).

We found that the single academics had higher SES scores. As the level of education increased, the SES scores decreased. The difference between the academics' job satisfaction, number of children, perceived adequacy of income, years of employment, satisfaction with the city, and their SES scores was statistically significant at a very high level (p<0.05; Cohen's d = 1.88 / eta-square:1.00-0.73). We determined that those who had no children, were not satisfied with their job, did not perceive their income as adequate, had 0-5 years of employment, and were not satisfied with their city had higher SES scores than others (Table 3).

Table 3. Distribution of the mean stress scale scores according to descriptive characteristics (N:315)

Variable	The SES			Effect Value
	n	Mean (SD)	F-t /p	
29 years and below[1]	80	34.44 (7.95)	F=5.581 / **0.001**** 1>2, 1>3, 4>3	η2 = 0.06
30-39 years[2]	138	31.81 (6.80)		
40-49 years[3]	67	29.87 (6.19)		
50 years and above[4]	30	33.60 (7.95)		
Marital Status				
Married	229	31.60 (6.73)	t=-2.545 / **0.011***	Cohen's d = 0.30
Single	86	33.92 (8.31)		
Number of Children				
0[1]	148	33.59 (7.61)	F=4.549 / **0.004**** 1>3, 2>3	η2 = 1.00
1[2]	73	31.85 (6.31)		
2[3]	70	29.81 (6.56)		
3 and above[4]	24	32.08 (8.07)		
Satisfaction with the City				
Yes[1]	137	30.61 (6.72)	F=12.278 / **0.001**** 2>1, 3>1, 2>3	η2 = 0.73
No[2]	47	36.47 (8.18)		
Partly[3]	131	32.41 (6.86)		
Professional Roles				
Research Assistant[1]	78	33.72 (7.86)	F=5.009 / **0.001**** 1>3, 1>4, 2>3, 2>4, 3>4	η2 = 0.06
Instructor[2]	95	33.64 (6.95)		
Dr. Assistant Professor[3]	111	30.98 (6.60)		
Associate Professor[4]	20	27.60 (5.61)		
Professor[5]	11	30.45 (9.21)		
Educational Status				
Undergraduate[1]	34	35.09 (8.42)	F=4.516 / **0.012*** 1>3	η2 = 0.03
Postgraduate[2]	101	32.88 (7.16)		
Doctorate[3]	180	31.33 (6.93)		
Job Satisfaction				
Yes	307	31.93 (7.05)	t=-4.750 / **0.001****	Cohen's d = 1.88
No	8	43.88 (5.57)		
Perceived Adequacy of Income				
Yes[1]	201	31.68 (7.26)	F=4.444 / **0.009**** 2>1	η2 = 1.00
No[2]	31	35.81 (8.65)		
Partly[3]	83	32.25 (6.34)		
Years of Employment				
0-5 years[1]	116	33.83 (.45)	F=12.325 / **0.011*** 1>3, 1>4	η2 = 1.00
6-10 years[2]	61	32.48 (7.30)		
11-15 years[3]	49	30.45 (6.38)		
16-20 years[4]	35	29.77 (6.45)		
21 years and above[5]	54	31.76 (7.41)		

F: One-way ANOVA test, t: Independent sample t test

SES: The Stress Evaluation Scale

*p<0.05, **p<0.01

The SES scores of the academics according to their state of health

Table 4. Distribution of the mean stress scale scores according to the state of health (N:315)

Variable	The SES			Effect Value
	n	Mean ± SD	F-t / p	
State of Health				
Bad[1]	6	36.67 (9.87)	F=14.409 / **0.001**** 1>4, 2>3, 2>4, 3>4	η2 = 0.12
Moderate[2]	81	36.06 (7.95)		
Good[3]	191	31.19 (6.34)		
Very Good[4]	37	28.54 (6.14)		
State of Having a Chronic Illness				
Yes	46	36.17 (8.11)	t=4.082 / **0.001***	Cohen's d = 0.61
No	269	31.56 (6.90)		
State of Using Alcohol				
Yes	26	36.23 (7.67)	t=2.967 / **0.003***	Cohen's d = 0.59
No	289	31.88 (7.12)		
State of Taking Medication Regularly				
Yes	45	35.31 (8.84)	t=3.113 / **0.002***	Cohen's d = 0.45
No	270	31.72 (6.85)		
State of Having a Regular Diet				
Yes	237	31.15 (6.70)	t=-4.794 / **0.001***	Cohen's d = 0.69
No	78	35.54 (7.91)		

F: One-way ANOVA test, t: Independent sample t test

SES: The Stress Evaluation Scale

*p<0.01

The differences between the participants' status of alcohol use and regular medication use and their SES scores were statistically significant at a low level (p<0.05; eta-square:0.03). Those who regularly used alcohol and took medications had higher SES scores than others (Table 4).

The difference between the academics' status of having a regular diet and their SES scores was statistically significant at a moderate level (p<0.05; eta-square:0.07). Those who did not have a regular diet had higher SES scores than others (Table 4).

The difference between the participants' state of health and state of having a chronic illness and their SES scores was statistically significant at a high level (p<0.05; eta-square:0.12-0.51). Those who rated their state of health as very good and those who did not have a chronic illness had lower SES scores than others (Table 4).

Correlation between the PES and SES scores of the instructors

Table 5. Correlation between the SES scores and PES subscale scores of the academics (N:315)

Variable	The SES	
	r	p
Corporation-oriented Performance	0.034	0.543
Teamwork-oriented Performance	0.076	0.181
Total Performance	0.036	0.526

SES: The Stress Evaluation Scale

The study found no correlation between the SES scores and PES subscale scores of the academics (p>0.05) (Table 5).

Discussion

Stress is a common phenomenon for all academics in all disciplines. The scholarly functions of academics include several comprehensive roles such as teaching and guiding students. Academics perform various functions, including administrative tasks, in addition to their responsibilities related to course preparation and research processes. In addition to these roles, considering their family and social lives, and many other roles and responsibilities, most academics experience significant levels of stress and show stress-specific reactions such as increased intention to quit and decreased job performance (Abbas and Roger, 2013; Gupta et al., 2015; Noor and Ismail, 2016; Tan, 2017; Thorsen, 1996). In the study of Bayar and Öztürk (2017), job stress is found to differ among research assistants depending on the faculty, level of education, and presence of an academic in the family. Our study determined that the academics had a moderate level of stress. We determined that the single academics had higher SES scores and as the level of education increased, their SES scores decreased. The difference between the academics' job satisfaction, number of children, perceived adequacy of income, years of employment, and satisfaction with the city and their SES scores was statistically significant at a very high level. In the context of these findings, being married or having children is particularly important as a factor in reducing stress. In our study, the difference between the age and professional roles of the academics and their SES scores was statistically significant at a moderate level. We found that SES scores were lower in advancing age and staff continuity. A study conducted by Tan (2017) found that full-time academics had a higher level of stress than part-time academics and the stress levels decreased as the academics got older. In Erdoğan's (2021) study, it was determined that being married and single affects the perception of stress and the married ones had a lower perception of stress. Another study conducted by Noor and Ismail (2016) emphasized that the publications that academics have to make for their career development are the greatest source of stress. In the study of Demir and Akbaba (2018), the job satisfaction of young academics was found to be lower. Our study determined that the stress levels were the highest among young academics and the difference between the scores and professional roles of the academics was statistically significant at a moderate level. The lowest performance scores were found to be in the professors. Young academics, who are at the beginning of their career development, are expected to have a higher level of stress and higher performance. Accordingly, it is noteworthy to provide support to young academics in particular.

Another study found that individual factors, organizational factors, and environmental factors were significantly effective on academic stress (Aydın et al., 2011). Considering the results of other studies and our own, it is also seen that one of the factors causing stress in academics is individual characteristics. For example, irregular eating habits, poor health, having a chronic illness, alcohol consumption, and taking medication regularly increase the tendency to stress. Another factor is organizational structure. Issues such as inadequate salary and fee imbalance, intense work pressure, communication incompetence, inability to take part in decisions, discrimination, and intensity of role-related responsibilities are indicated to be stress factors (Abbas and Roger, 2013; Aydın et al., 2011; Göksel & Tomruk, 2016; Gupta et al., 2015; Noor and Ismail, 2016; Tan, 2017; Thorsen, 1996). In our study, the difference between the academics' job satisfaction and perceived adequacy of income and their SES scores was statistically significant at a very high level. Academics play a key role for universities to achieve their goals. It is noteworthy to provide the necessary support in order to address the performance and stress levels of academics and to manage stress.

Conclusion

In the present study, we examined the correlation between the stress and performance levels, descriptive characteristics, and stress and performance levels of academics.

The study results demonstrated that the academics had a moderate level of stress and a very high level of corporation-oriented performance, teamwork-oriented performance, and total performance. Additionally, we determined that an increase in professional roles caused a decrease in performance and young academics, those who were single, had no children, had negativities related to their job, had no regular diet, had a chronic illness, took medication regularly, and used alcohol had a higher level of stress.

It is crucial to address the factors affecting the stress and performance levels of academics according to their level of impact, to raise awareness by revealing the correlations, and to provide necessary training programs. Academics are expected to multitask like lecturing and researching at the same time. As a result of this, their stress level increases. Therefore, it is necessary to support academics in stress management skills and provide them with in-service training so that they can have psychological resilience. First of all, they should be informed of communication about and supported in communication, time management, and motivation processes. Academics managing their stress levels well will be able to make better contributions to their students, institutions, and society. As we particularly emphasized in our study, young academics should be privileged in this regard.

One of the important issues that nurses deal with within the scope of their educational roles is coping with stress. Especially, nurse managers need to be aware that there are many problems that employees will experience with their health and work performance when they are unable to cope with stress. It is thought that the results of this study will make an important contribution to the literature on this topic.

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