Achievement Need and Burnout in University Students: Serial Mediation by Resilience and Life Satisfaction

Binaz Bozkur[1] (iD), Mustafa Güler[2] (iD)

[1] Mersin University, Faculty of Education, Department of Guidance and Psychological Counseling, Mersin, Turkey

[2] Selçuk University Health Services Vocational School, Department of Therapy and Rehabilitation, Konya, Turkey

This study aims to examine the mediational roles of resilience and life satisfaction in the relationship between students' achievement need and their burnout. The research group of the study consists of 490 (85.7% female, 14.3% male) university students continuing their education in several programs at 6 universities across Turkey. Maslach Burnout Inventory – Student Form (MBI-SF), Life Satisfaction Scale, Connor Davidson Resilience Scale (CD-RISC), New Needs Assessment Questionnaire (NAQ) – Achievement Need Sub-dimension, and Personal Information Form were used as data collection tools in the research. According to the findings obtained from the analysis, achievement need, resilience, and life satisfaction have positive and significant relationships with the efficacy dimension of burnout. On the other hand, achievement need, resilience, and life satisfaction have negative and significant relationships with cynicism and emotional exhaustion sub-dimensions of burnout. In the mediation analysis, it was observed that resilience and life satisfaction serially mediated the relationship between the achievement need and burnout (efficacy, cynicism, exhaustion). Based on these findings, interventions aimed at increasing students' resilience and life satisfaction can be beneficial in preventing student burnout.

Key words: student burnout, achievement need, life satisfaction, resilience

Introduction

In Turkey, university students gain entrance to universities by passing a series of challenging exams, however, university placement does not relieve their anxieties. Even after they have settled at the university, students are worried about their future, such as completing their education and finding a job (Çakmak & Hevedanlı, 2005). Social and cultural problems, namely, anxiety caused by adapting to a new environment and possible financial difficulties may contribute to the stress experienced by students during their educational process. (Dursun & Aytaç, 2012). In addition,

university students can often feel pressured to perform (Shankland et al., 2019) because well-performing students may have a chance to work for better wages and to occupy better positions (Madigan & Curran, 2021). University students may show various physical and psychological symptoms associated with performance pressure, stressful situations such as exams, and decreased feelings of achievement (Shankland et al., 2019). In particular, achievement and good performance can have a positive effect on the mental health of the student when there is an internal psychological need, while it can have a negative effect when it becomes a necessity. In this context, it is thought that there is an important interaction between the need for achievement and burnout in university students. Determining the factors that play a role in this interaction is important in reducing the negative effects of burnout. Therefore, in our study, we aimed to explore the mediating role of resilience and life satisfaction between the need for achievement and burnout.

Achievement Need

One of the important factors motivating people is their needs, which differ in different situations and events (Dizén et al., 2005). Scientists have addressed the needs of individuals from various perspectives (Kesici, 2008). Glasser (1998) stated that the five basic needs, which are survival, love/belonging, power/competence, freedom, and fun, are in our innate genetic structure (Frey & Wilhite, 2005). Maslow (1954) stated that the needs of individuals are hierarchical and that some needs may outweigh others. These needs are physiological, such as safety, love and belonging, esteem, and self-actualization. McClelland (1961) focused on the need for achievement, one of the psychological needs, and developed the Acquired Needs Theory. Ac-

cording to this theory, some individuals only work for achievements. High ambition, high personal standards, enjoying surpassing previous achievements, and reaching a high level of success again are among the characteristics of successful individuals (Zunker, 2002). Heckert et al. (2000) classified psychological needs as achievement, relationship, autonomy, and dominance as social needs. The authors defined the achievement need as an individual's desire to excel and attempt to further his/her previous performance. The achievement need gives the individual the strength to face difficulties in achieving success (Sagie & Elizur, 1999). The lack of need for achievement can bring about failure and various difficulties that may arise as a result of failure.

Achievement Need and Burnout

Maslach (1982) defines burnout as a psychological syndrome characterized by three dimensions: emotional exhaustion, cynicism, and a reduced sense of efficacy. The emotional exhaustion dimension of burnout, resulting from failure, weariness, loss of power and energy (Freudenberger, 1974), expresses the depletion of one's emotional resources, while the cynicism dimension expresses a negative, cynical and emotionless approach to other people, while the dimension of decrease in personal competence involves negative feelings towards one's self, low self-efficacy, and decreased productivity feelings (Awa et al., 2010; Maslach & Goldberg, 1998). Burnout occurs when an individual does not receive the appropriate reward or is not appreciated despite his/her good performance (Maraşlı, 2005). Expectations of one's families, teachers, and friends may differ from academic achievement need and burnout levels of university students. There is increasing evidence that there are signs of burnout among students universally (Dyrbye et al., 2014; Heinen

et al., 2017). Research results indicated that the perceived social support levels of high school students (Kutsal, 2009) predicted university students' academic stress, academic self-efficacy, relationships with teachers and friends, and academic achievement burnout (Schaufeli et al., 2002; Zhang, Gan, & Cham, 2007). Based on the result of the research conducted by Kutsal (2009), it was determined that the perceived social support levels of high school students predicted burnout, and students who perceived moderate academic achievement experienced burnout more than students who perceived high academic achievement. Madigan and Curran (2021), on the other hand, found that all three dimensions of burnout had a negative and significant relationship with achievement in a meta-analysis study in which they included 29 studies on the subject. The fact that the decrease in personal achievement is related to cynicism and emotional burnout (Byrne, 1994) and that emotionally exhausted students do not perceive themselves as productive and successful enough (Maslach & Goldberg, 1998) points to the connection between achievement need and student burnout. One of the variables thought to be related to students' achievement need and burnout is resilience.

Achievement Need, Burnout and Resilience

The concept of resilience refers to strength and resilience that enables a person to live a harmonious life by protecting him/herself from dangers in the face of challenging life events (Garmezy, 1993). In the academic field, resilience plays an important role as a motivational variable. Because resilience is a factor that motivates students to achieve their academic and personal goals and is effective in maintaining their mental health and self-confidence while coping with academic

and psycho-social difficulties, stressful situations, and demands that arise in university life (de la Fuente et al., 2017). There are studies in the literature on the relationship between resilience and student burnout. For example, García-Izquierdo et al. (2018) found that resilience is associated with academic burnout and that resilience mediates the relationship between academic burnout and psychological health. On the other hand, Smith and Emerson (2021) state that as resilience increases so does academic efficacy, however, cynicism and emotional exhaustion decrease. Thus, the authors state that resilience is a protective factor against student burnout. Similar to university students, Arrogante and Aparício-Zaldivar (2017) found that resilience mediated the relationship between burnout and mental health in nurses. As a protective factor against burnout, resilience is also related to achievement need (Herrero, 2014). On the other hand, it was found that resilience positively predicted life satisfaction in both successful and unsuccessful students, but it predicted life satisfaction more strongly in successful students (Abolghasemi & Varaniyab, 2010). For this reason, it is thought that life satisfaction is related to students' burnout, achievement need, and resilience.

Achievement Need, Burnout, Resilience and Life Satisfaction

Life satisfaction is defined as the general judgments and evaluations of one's own life and has a subjective quality. In the emergence of life satisfaction judgments, the individual's comparison of his or her situation with the situations s/he considers to be standard is effective (Diener et al., 1985). According to Pavot and Diener (2004), life satisfaction is a cognitive component of well-being. In studies examining the relationship between achievement need and life satisfaction in uni-

versity students, it was determined that students with high life satisfaction had a higher achievement need than those with low life satisfaction (Çivitçi, 2012; Karaman & Watson, 2017). On the other hand, there are research results in literature showing that as life satisfaction decreases, burnout increases (Ertekin et al., 2015; Hakanen & Schaufeli, 2012; Wang et al., 2019; Ye et al., 2021).

Resilience is a personal trait that helps individuals cope with difficulties, adapt well, and develop when exposed to difficult conditions. This feature protects individuals by acting as a buffer against the effects of distress and traumatic events (Connor & Davidson, 2003). It is stated that resilience is a protective factor for the quality of life and can help individuals increase their life satisfaction (Liu et al., 2012). There are studies showing that resilience is positively related to life satisfaction (Achour & Nor, 2014; Alibekiroğlu et al., 2018; Tepeli Temiz & Tarı Cömert, 2018; Toprak, 2014). In this context, it is thought that resilience may affect life satisfaction positively and indirectly reduce burnout.

The Present Study

Students experiencing burnout do not perceive themselves as productive and successful enough (Maslach & Goldberg, 1998), and university students' academic stress, academic self-efficacy, and academic success are related to their burnout (Schaufeli et al., 2002; Madigan & Curran, 2021; Zhang, Gan & Cham, 2007). Published studies showing that resilience, which is a protective factor against burnout (Herrero, 2014; Smith & Emerson, 2021), is positively related to both the need for achievement (Herrero, 2014) and life satisfaction (Toprak, 2014; Smith & Emerson, 2021; Achour & Nor, 2014; Alibekiroğlu, Akbaş, Ateş, & Kırdök, 2018; Tepeli Temiz & Tarı Cömert, 2018). On the other hand, it has been

indicated in university students that when the need for success increases, life satisfaction also increases (Çivitçi, 2012; Karaman & Watson, 2017), and when life satisfaction decreases, burnout increases (Hakanen & Schaufeli, 2012; Wang et al., 2019; Ertekin et al., 2015; Ye, Huang, & Liu, 2021).

This study aims to examine the potential protective factors in student burnout. Based on the theoretical framework mentioned above, it is thought that students' achievement need is a potential factor in reducing burnout. It is assumed that the achievement need in students affects life satisfaction through resilience, and this effect reduces student burnout. In other words, this study examines the serial mediation of resilience and life satisfaction factors in the relationship between students' achievement need and their burnout. For this purpose, the following hypotheses were tested:

H1: The achievement need have a positive significant relationship with the efficacy dimension of burnout and a negative significant relationship with the emotional exhaustion and cynicism dimensions of burnout.

H2: Resilience has a mediating role in the relationship between achievement need and the dimensions of burnout: a) efficacy, b) cynicism, c) emotional exhaustion.

H3: Life satisfaction has a mediating role in the relationship between achievement need and the dimensions of burnout: a) efficacy, b)cynicism, c) emotional exhaustion.

H4: Resilience and life satisfaction serially mediate the relationship between achievement need and the dimensions of burnout: a) efficacy, b) cynicism, c) emotional exhaustion.

Method

In this study, the authors aimed to determine the serial mediation effect of resilience and

life satisfaction on the relationship between university students' achievement need and their burnout. For this reason, this research was designed as relational research in which the relationships between the variables were tested by mediation analysis.

Participants

The "convenience sampling" method, which is one of the purposive sampling methods, was used in the research. The inclusion and exclusion criteria for the participants of the study are as follows: The participants in the research are undergraduate students studying at various universities in Turkey. Graduate students and students of open education faculties were excluded from the scope. The research group of this study consists of 490 (420 female, 70 male) students, studying at various faculty/schools (Vocational School of Health Services, Faculty of Education, Faculty of Health Sciences, Faculty of Science and Literature, Vocational School of Social Sciences and Faculty of Engineering) of 6 universities in different provinces in Turkey. The ages of the participants ranged from 18 to 25 (Mean age = 19.40 years, *SD* = 1.38).

Measures

Maslach Burnout Inventory – Student Form (MBI-SF)

The Maslach Burnout Inventory – Student Form (MBI-SF) was developed by Schaufeli et al. (2002) and adapted to Turkish by Çapri et al. (2011) to determine students' burnout. The scale consists of three sub-dimensions. It is a 13-item scale consisting of 4 items for the efficacy sub-dimension, 4 items for the cynicism sub-dimension and 5 items for the emotional exhaustion sub-dimension. This scale is a 5-point Likert-type scale. The scale items

are scored as "1 – never" and "5 – always". High scores on the emotional exhaustion and cynicism subscales indicate burnout, while low scores on the efficacy (reversely scored) subscales indicate burnout. In scoring, three separate burnout scores are calculated for each person. The total score of 3 sub-dimensions of the scale was used in the analyses. The Cronbach Alpha internal consistency coefficients were .76, .82, and .61, respectively, and the test-retest reliability results were found to be .76, .74, and .73, respectively. In this study, we calculated the Cronbach Alpha internal consistency coefficient of the scale as .80 for the Exhaustion dimension, .85 for the Cynicism dimension, and .65 for the Efficacy Dimension.

Life Satisfaction Scale

The Life Satisfaction Scale was developed by Diener et al. (1985) to measure the life satisfaction of individuals. The Turkish validity and reliability study of the scale was carried out by Köker (1991) and Yetim (1991). The scale is unidimensional and consists of 5 items. This scale is a 7-point Likert-type scale ("1 – strongly disagree" and "7 – strongly agree"). The Cronbach Alpha internal consistency coefficient of the scale was found to be .87, and the test-retest reliability coefficient was .82. In this study, we calculated the Cronbach Alpha internal consistency coefficient of the scale as .80. The total score of the scale was used in the analyses.

Connor Davidson Resilience Scale (CD-RISC)

The original structure of the Connor-Davidson Resilience Scale consisted of 25 items and five sub-dimensions (Connor & Davidson, 2003). The short form of the scale consists of 10 items and is one-dimensional. The validity and reliability study of the short form of the

scale was conducted by Campbell-Sills and Stein (2007). The scale was adapted to Turkish by Kaya and Odaci (2021). The scale is a 5-point Likert type (0 – represents not true and 4 – represents always true). A high score on the scale indicates a high resilience. The Cronbach Alpha internal consistency coefficient of the scale was calculated as .81 by Kaya and Odaci (2021). In this study, we calculated the Cronbach Alpha internal consistency coefficient of the scale as .87. The total score of the scale was used in the analyses.

New Needs Assessment Questionnaire (NAQ) – Achievement Need Sub-dimension

The New Psychological Needs Assessment Scale (NAQ) was developed by Heckert et al. (2000) and adapted into Turkish by Kesici (2008) to determine students' psychological needs related to achievement, relationship, autonomy, and dominance. The scale consists of four sub-dimensions. It is a 20-item scale consisting of 5 items for the achievement sub-dimension, 5 items for the relationship sub-dimension, 5 items for the autonomy sub-dimension, and 5 items for the dominance sub-dimension. This scale is a 5-point Likert-type scale. The Achievement Need sub-dimension of the scale was used in the study. The Cronbach Alpha internal consistency coefficient of the Achievement Need sub-dimension was calculated as .77 by Kesici (2008). In this study, we calculated the Cronbach Alpha internal consistency coefficient of the scale as .73. The total score Achievement Need sub-dimension of the scale was used in the analyses.

Personal Information Form

The personal information form consists of questions that include students' gender, faculty/school, class, family type, and place of residence. The personal information form was prepared by the researchers.

Procedures and Ethics

Approval was obtained for the study with the decision of Selcuk University Faculty of Education Ethics Committee dated 15.02.2022 and numbered 22. During the data collection period, data were collected online as students continued their education via distance education due to the COVID-19 Pandemic. The data in the research were collected through Google Forms. At the beginning of the applied form, an "Informed consent form for the application" was added. Participants who did not approve the item "I voluntarily agree to participate in the research" were not allowed to continue the data collection process.

Data Analysis

In the analysis of the data, first, descriptive statistics and correlations were examined. Then, a serial mediation model (PROCESS macro, model 6; proposed by Hayes (2013) with resilience (first-order mediator) and life satisfaction (second-order mediator) was conducted to test the proposed models. Gender and grade level were controlled as covariate variables. A significant indirect effect was tested using a bias-corrected bootstrap method with a 95% confidence interval (CI) of 5,000 iterations. Hayes (2013) states that regression coefficients are significant if the confidence interval does not include zero. For each mediation model used in the research, statistical power and suitability of sample size were tested using the procedure developed by Schoemann, Boulton, and Short (2017). The findings showed that all three models had sufficient power (.97 for y = Efficacy, .98 for y = Cynicism, and .99 for y = exhaustion) to detect a significant effect (N = 490, 1000 number of repli-

cations, 20000 Monte Carlo draws per replication, and confidence level of 95%.).

Results

Statistical Assumption Tests

Before the analysis of the data, the assumption of normality was examined and the skewness indices (-0.83-1.16) and kurtosis indices (-0.12-1.15) for all measurements in the study were within the range of ±2, that is, within acceptable limits (George & Mallery, 2003). The correlation coefficient between the variables should be below .80 for the multicollinearity assumption, the Durbin-Watson value should be around 2 for the independence of errors (Field, 2009), the VIF (Variance Inflation Factor) value should be less than 10, and the tolerance value would be greater than 10 – all these were taken into account as the criterion (Hair et al., 2014). In the analysis, it was determined that the data were linear, there was no multicollinearity problem (VIF: 2.55-1.49; Tolerance: .39-.82) and the errors were independent (Durbin-Watson: 1.99).

Preliminary Analyses

The mean, standard deviation, and Pearson correlation coefficients for the variables discussed in the study are presented in Table 1.

As seen in Table 1, resilience, life satisfaction, and efficacy are all correlated with each other, and the relationships are positive. In addition, resilience and life satisfaction have a negative and statistically significant correlation with both cynicism and emotional exhaustion. These findings support the first hypothesis of this research.

Serial Multiple Mediational Analyses

In general, the serial mediation model of this study examines the serial mediation of resilience and life satisfaction in evaluating the direct and indirect effects of the Achievement need, which is one of the psychological needs, on efficacy, cynicism, and emotional exhaustion, which are the sub-dimensions of student burnout. Therefore, in the study serial multiple mediation analysis was performed for each sub-dimension of Student Burnout.

Findings on the serial mediating role of resilience and life satisfaction in the relationship between the achievement need and the efficacy are presented in Figure 1 and Table 2.

As seen in Figure 1 and Table 2, when the findings are examined, the total effect of achievement need on efficacy is statistically significant (Total effect (c), B = .597, $p < .001$). When the variables of resilience and life satisfaction were added to the model as mediating variables, it was observed that this coefficient decreased but it is still of significance (Direct effect (c'), B = .441, $p < .001$). In addition, it was observed that achievement need predicted resilience (B = 1.117, $p < .001$) and life sat-

Table 1 *Descriptive statistics and correlations among the variables (N = 490)*

Variable	M	SD	α (Cronbach)	1	2	3	4	5	6
1. Achievement Need	20.31	2.74	.73						
2. Efficacy	13.01	2.93	.65	.56**	-				
3. Cynicism	8.12	3.37	.85	-.28**	-.40**	-			
4. Emotional Exhaustion	11.44	4.10	.80	-.26**	-.35**	.77**	-		
5. Resilience	23.74	7.18	.87	.43**	.48**	-.21**	-.23**	-	
6. Life Satisfaction	17.72	6.35	.80	.19**	.31**	-.37**	-.35**	.24**	-

Note. M = Mean, SD = Standard Deviation, ** $p < .01$

isfaction (B = .232, *p* < .001) positively. When the indirect effects were examined, it was determined that the effect of achievement need on efficacy was mediated by resilience (B =.116, *SE* = .026, 95% CI = [.070, .170]). Thus, the H2a hypothesis is confirmed. However, the indirect effect of achievement need on efficacy through life satisfaction is not significant (B = .170, *SE* = .005, 95% CI = [-.001, .038]). Therefore, H3a is rejected. Finally, the study tested the indirect effect of achievement need on efficacy via both resilience and life satisfaction. The relationship was significant (Serial mediation test; B = .051, *SE* = .005, 95% CI = .006, .025, see Table 2). In other words, the hypothesis that resilience and life satisfaction serially mediate the relationship between the achievement need and efficacy (H4a) has been confirmed. The tested model predicted 41% of the variance in efficacy.
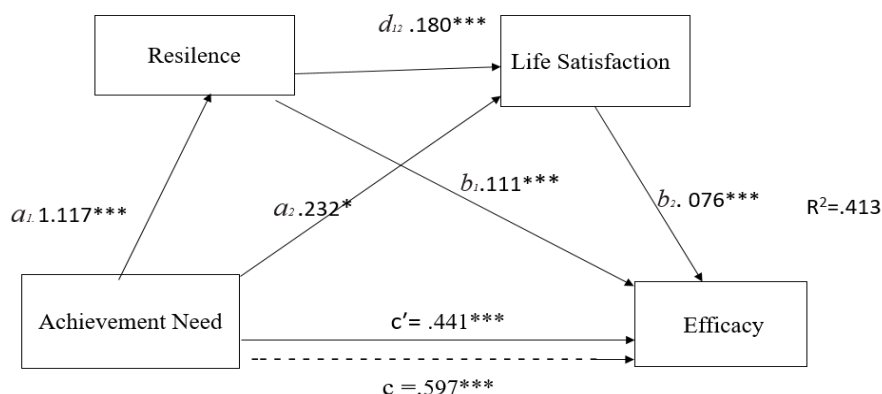
Note. The path coefficients are unstandardized, *p* < .05, **p* < .01, *** *p* <.001.

Figure 1 Serial-multiple mediation role of Resilience and Life Satisfaction in the relationship between Achievement Need and Efficacy.

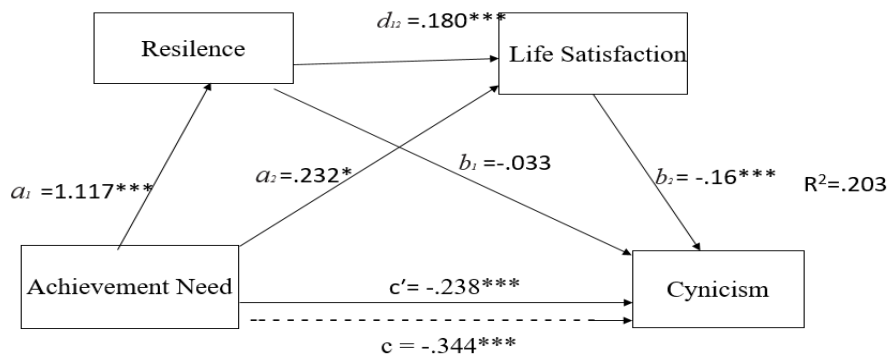Table 2 *The indirect effect of Achievement Need on Efficacy via Resilience and Life Satisfaction*

Path	Effect	95% Confidence interval	
		Boot Lower Limit	Boot Upper Limit
Achievement Need➔ Resilience➔ Efficacy	.116	.070	.170
Achievement Need➔ Life Satisfaction➔ Efficacy	.170	-.001	.038
Achievement Need➔ Resilience➔ Life Satisfaction ➔ Efficacy	.051	.006	.026
Effects	B	Confidence interval Lower Limit	Confidence interval Upper Limit
Total effect	.598	.518	.676
Direct effect	.441	.359	.522
Total indirect effect	.156	.106	.217

Note. N = 490, k = 5000, Boot = Statistics for the indirect effects are the result of the bootstrapping method. Covariates: gender and grade level. Values shown are unstandardized effect.

The findings regarding the serial mediating role of resilience and life satisfaction in the relationship between the achievement need and the cynicism sub-dimension of student burnout are presented in Figure 2 and Table 3.

As seen in Figure 2 and Table 3, the total effect of achievement need on cynicism is statistically significant (Total effect (c), B = -.344, $p < .001$). When the variables of resilience and life satisfaction were added to the model as mediating variables, it was observed that this coefficient decreased but it is still of significance (Direct effect (c'), B = -.238, $p < .001$). In addition, it was observed that the achievement need positively predicted resilience (B = 1.12, $p < .001$) and life satisfaction (B = .232, $p < .001$). When the indirect effects are examined, the effect of achievement need on cynicism is affected by resilience (B = -.037, $SE = .028$, 95% CI = [-.100, .013]) and life satisfaction (B = -.037, $SE = .021$)., 95% CI = [-.082, .002]) were not significant. Therefore, H2b

Note. The path coefficients are unstandardized, *$p < .05$, **$p < .01$, ***$p < .001$.

Figure 2 Serial-multiple mediation role of Resilience and Life Satisfaction in the relationship between Achievement Need and Cynicism.

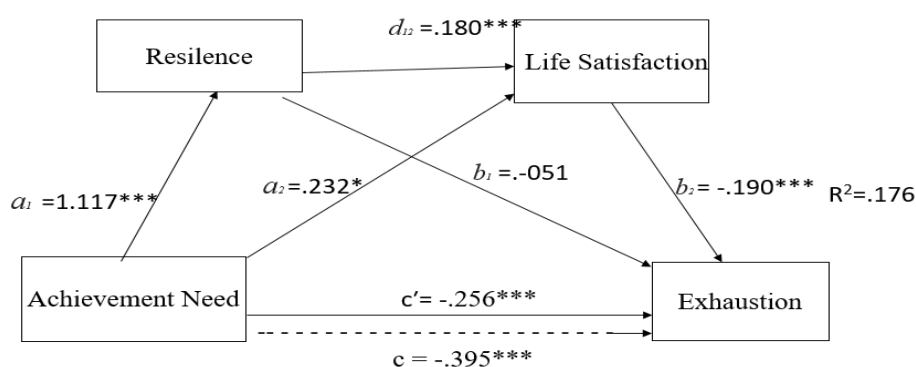Table 3 The *indirect effect of Achievement Need on Cynicism via Resilience and Life Satisfaction*

Path	Boot Effect	95% Confidence interval	
		Boot Lower Limit	Boot Upper Limit
Achievement Need→Resilience→Cynicism	-.037	-.100	.013
Achievement Need →Life Satisfaction→Cynicism	-.037	-.082	.002
Achievement Need→Resilience→Life Satisfaction→Cynicism	-.032	-.055	-.014
Effects	B	Confidence interval Lower Limit	Confidence interval Upper Limit
Total effect	-.344	-.448	-.240
Direct effect	-.238	-.347	-.129
Total indirect effect	-.106	-.175	-.049

Note. N = 490, k = 5000, Boot = Statistics for the indirect effects are the result of the bootstrapping method. Covariates: gender and grade level. Values shown are unstandardized effect.

and H3b are not confirmed. Finally, the study tested the indirect effect of achievement need on cynicism via both resilience and life satisfaction. The relationship was significant (Serial multiple mediation test; B = -.032, *SE* = .010, 95% CI = [-.055, -.014], see Table 3). The hypothesis that resilience and life satisfaction serially mediate the relationship between the

achievement need and cynicism ((H4b) has been confirmed. The tested model explains 20.3% of the variance in cynicism (R^2 = .203).

The findings regarding the serial mediating role of resilience and life satisfaction in the relationship between the achievement need and the exhaustion sub-dimension of student burnout are presented in Figure 3 and Table 4.

Note. The path coefficients are unstandardized, *p* < .05, **p* < .01, ***p* < .001.

Figure 3 Serial-multiple mediation role of Resilience and Life Satisfaction in the relationship between Achievement Need and Exhaustion.

Table 4 The *indirect effect of Achievement Need on Exhaustion via Resilience and Life Satisfaction*

Path	Boot Effect	95% Confidence interval	
		Boot Upper Limit	Boot Lower Limit
Achievement Need➔ Resilience➔ Exhaustion	-.057	-.137	.011
Achievement Need➔ Life Satisfaction ➔Exhaustion	-.044	-.100	.002
Achievement Need➔ Resilience➔ Life Satisfaction ➔Exhaustion	-.038	-.066	-.017
Effects	B	Confidence interval Lower Limit	Confidence interval Upper Limit
Total effect	-.395	-.523	-.267
Direct effect	-.256	-.391	-.121
Total indirect effect	-.139	-.226	-.065

Note. N = 490, k = 5000, Boot = Statistics for the indirect effects are the result of the bootstrapping method; covariates: gender and grade level. Values shown are unstandardized effect.

As seen in Figure 3 and Table 4, the total effect of achievement need on exhaustion is statistically significant (Total effect (c); B = -.395, p < .001). When the variables of resilience and life satisfaction were added to the model as mediating variables, it was observed that this coefficient decreased but it is still of significance (Direct effect (c'), B = -.256, p < .001). In addition, it was observed that the achievement need positively predicted resilience (B = 1.117, p < .001) and life satisfaction (B = .232, p < .001). When the indirect effects are examined, it is seen that the effect of achievement need on exhaustion is affected by resilience (B = -.057, SE = .028, 95% CI = [-.137, .011]) and life satisfaction (B = -.044, SE = .021), 95% CI = [-.100, .002]) but these effects were not significant. Therefore, H2c and H3c were not confirmed. Finally, the study tested the indirect effect of achievement need on exhaustion via both resilience and life satisfaction. The relationship was significant (Serial-multiple mediation test; B = -.032, SE = .010, 95% CI = [-.055, -.014], see Table 4). In other words, the hypothesis that resilience and life satisfaction serially mediate the relationship between the achievement need and exhaustion (H4c) has been confirmed. The tested model explains 17.6% of the variance in exhaustion (R^2 = .176).

Discussion

In this study, the serial mediating roles of resilience and life satisfaction were examined by evaluating the direct and indirect effects of achievement need on efficacy, cynicism, and exhaustion, which are the sub-dimensions of student burnout. It was determined that resilience and life satisfaction had a serial mediation effect in all three dimensions of student burnout, respectively. These results support our fourth hypothesis (H4a, H4b, and H4c). However, apart from the significant mediat-

ing effect of resilience between achievement need and efficacy, it was observed that the mediation effect alone was not significant in other dimensions. It was determined that although life satisfaction was significantly correlated with the sub-dimensions of burnout and the achievement need, it did not have a mediating effect on its own. Therefore, the most striking aspect of this study is the determination of the serial mediation role of resilience and life satisfaction together. There are studies in the literature stating that resilience is a protective factor for burnout (de la Fuente et al., 2017; García-Izquierdo et al., 2018; Madigan & Curran, 2021; Smith & Emerson, 2021). Likewise, it is known that life satisfaction is also associated with burnout (Ertekin et al., 2015; Hakanen & Schaufeli, 2012; Wang et al., 2019; Ye et al., 2021). It is also known that students' life satisfaction is higher when their achievement need are high (Çivitçi, 2012; Karaman & Watson, 2017) and similarly, resilience is related to the achievement need (Herrero, 2014) but the connections between resilience and life satisfaction are also effective in making serial mediation significant. Because resilience is a protective factor for the quality of life, it can also help individuals increase their life satisfaction (Liu et al., 2012). In this context, it is thought that resilience also plays a role in reducing burnout by positively affecting life satisfaction. Research shows that resilience is positively related to life satisfaction (Achour & Nor, 2014; Alibekiroğlu et al., 2018; Tepeli Temiz & Tarı Cömert, 2018; Toprak, 2014) and the fact that resilience is a strong predictor of life satisfaction among successful students compared to unsuccessful students (Abolghasemi & Varaniyab, 2010) supports this conclusion.

According to the findings obtained from the research, the achievement need of university students and the emotional exhaustion and cynicism dimensions of burnout have a nega-

tive relationship, while the efficacy dimension has a positive and significant relationship. These results support our first hypothesis (H1). Based on the literature, it has been determined that achievement need is among the important need of young people (Avcı et al., 2017; Moghadam et al., 2020; Moneta, 2011). The dimension of decreased efficacy of student burnout is defined as negative feelings towards oneself, low self-efficacy, and decreased feelings of productivity (Awa et al., 2010; Maslach & Goldberg, 1998). When the achievement need is evaluated together with the efficacy dimension of student burnout, a positive correlation between the achievement need and efficacy is expected. On the other hand, the fact that cynicism and emotional exhaustion are associated with a decrease in personal achievement (Byrne, 1994) and that students who are emotionally exhausted do not see themselves as productive and successful enough (Maslach & Goldberg, 1998) support the existence of a negative relationship between the achievement need and emotional exhaustion and cynicism.

The findings of the study show that resilience mediates the relationship between university students' achievement need and efficacy, one of the dimensions of burnout, but does not mediate the relationship between cynicism and emotional exhaustion sub-dimensions. Similar to this result, Galindo-Domínguez and Pegalajar (2020) found that resilience mediates the relationship between self-efficacy and burnout. Again, resilience is a protective factor in reducing student burnout (Smith & Emerson, 2021) and mediates the relationship between mental health and burnout (García-Izquierdo et al., 2018). On the other hand, resilience is also related to the achievement need (Herrero, 2014) and being a motivating feature for the student to realize their academic and personal goals, it is also an effective factor in maintaining mental

health and self-confidence while coping with the academic and psycho-social difficulties, stressful situations, and demands that arise in university life (de la Fuente et al., 2017). When the findings are evaluated in the light of other research results, it is concluded that resilience is an important factor in student burnout.

This research examined whether life satisfaction mediated the relationship between the achievement need and the dimensions of burnout (efficacy, cynicism, and emotional exhaustion) in university students, and it was determined that the mediating role was not statistically significant. However, life satisfaction has a positive and significant relationship with the efficacy dimension of burnout, and a negative and significant one with the emotional exhaustion and cynicism dimensions of burnout. Again, the achievement need and life satisfaction have a significant relationship, albeit at a low level. In the literature, some studies examine the relationship between the achievement need and life satisfaction in university students, and there are studies in which students with high life satisfaction have a higher achievement need than those with low life satisfaction (Çivitçi, 2012; Karaman & Watson, 2017). On the other hand, the research results showing that burnout increases as life satisfaction decreases (Ertekin et al., 2015; Hakanen & Schaufeli, 2012; Wang et al., 2019; Ye et al., 2021) are similar to these research results. However, the mediating role of life satisfaction alone in the relationship between the achievement need and burnout is not significant.

Conclusions, Limitations, and Recommendations

This study was aimed to examine the potential protective factors in student burnout, and in this context, the roles of achievement need, resilience, and life satisfaction in effica-

cy, cynicism, and emotional exhaustion, which are dimensions of student burnout. Research results show that the achievement need, resilience, and life satisfaction have positive and significant relationships with the efficacy dimension of student burnout and have negative and significant relationships with the cynicism and emotional exhaustion dimensions. In the mediation analysis, it was observed that although resilience and life satisfaction did not mediate alone, they serially mediated the relationship between the achievement need and student burnout. This result is thought to be one of the most important contributions of our research, as it is predicted that it can be a guide for future research on explaining student burnout and interventions to be made in this regard. It is thought that interventions to increase students' resilience and life satisfaction will be beneficial in terms of preventing student burnout. For this reason, it is thought that it would be beneficial to implement programs that improve resilience and increase life satisfaction in universities so that university students can cope with problems in their future lives and adapt.

Higher education institutions want to attract qualified students to their institutions, ensure their registration and keep them until they successfully complete their education (Emerson, Hair, & Smith, 2022). The realization of this desire is closely related to the motivation of the students and therefore their achievement need. In particular, the results of this study showed that achievement need, resilience, and life satisfaction have an important place as protective factors in student burnout. In order to protect students from burnout, higher education institutions should consider the need to increase students' achievement need, resilience, and life satisfaction in the organization of learning environments and the planning of psychological services.

In addition to its important contributions, our research has important limitations. In the research, data were collected through self-report scales, so possibilities such as social acceptance errors must be taken into account. To overcome this limitation, it is thought that triangulating the data, that is, collecting data from teachers and peers of students, as well as self-report, would be beneficial in future studies. The second limitation of the study is that it is a cross-sectional study with simultaneous data collection. This makes it difficult to determine cause-effect relationships. Therefore, it is recommended that future studies be conducted using experimental and longitudinal methods to investigate the relationships between these variables. The students participating in the research do not have a balanced distribution in terms of gender and grade level variables. Therefore, these variables were added to the model as control variables. In future research, it will be useful to collect data by paying attention to the distribution according to demographic variables such as gender and class. This study was conducted with undergraduate students, and it should be noted that the results can only be generalized to similar groups. In this study, the roles of achievement need, resilience, and life satisfaction in student burnout were examined, but it is thought that examining student burnout in terms of variables such as coping, attachment styles, anxiety, and assertiveness would also be beneficial.

Authors' ORCID
Binaz Bozkur
https://orcid.org/0000-0002-3821-7489
Mustafa Güler
https://orcid.org/0000-0003-2701-1220

References

Abolghasemi, A., & Varaniyab, S. T. (2010). Resilience and perceived stress: Predictors of life satis-

faction in the students of success and failure. *Procedia-Social and Behavioral Sciences*, *5*, 748–752. https://doi.org/10.1016/j.sbspro.2010.07.178

Achour, M., & Nor, M. R. M. (2014). The effects of social support and resilience on life satisfaction of secondary school students. *Journal of Academic and Applied Studies*, *4*(1), 12–20.

Alibekiroğlu, P. B., Akbaş, T., Ateş, F. B., & Kırdök, O. (2018). Üniversite öğrencilerinde yaşam doyumu İle psikolojik sağlamlık arasındaki ilişkide öz anlayışın aracı etkisi. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 27*(2), 1–17.

Arrogante, O., & Aparício-Zaldivar, E. (2017). Burnout and health among critical care professionals: The mediational role of resilience. *Intensive and Critical Care Nursing*, *42*, 110–115. https://doi.org/10.1016/j.iccn.2017.04.010

Avcı, A., Bozgeyikli, H., & Kesici, S. (2017). Psychological needs as the predictor of teachers' perceived stress levels. *Journal of Education and Training Studies*, *5*(4), 154–164. https://doi.org/10.11114/jets.v5i4.2274

Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient Education and Counseling*, *78*(2), 184–190. https://doi.org/10.1016/j.pec.2009.04.008

Byrne, B. M. (1994). Burnout: Testing for the validity, replication, and invariance of causal structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal*, *31*(3), 645–673. https://doi.org/10.3102%2F00028312031003645

Çakmak, Ö., & Hevedanlı, M. (2005). The examination of concern levels of biology student's class by various variables. *Elektronik Sosyal Bilimler Dergisi*, *4*(14), 115–127.

Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor–Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, *20*(6), 1019–1028. https://doi.org/10.1002/jts.20271

Çapri, B., Gündüz, B., & Gökçakan, Z. (2011). Maslach Tükenmişlik Envanteri Öğrenci Formu (MTE-ÖF)'nun Türkçe'ye uyarlaması: Geçerlik ve güvenirlik çalışması. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi, 40*(1), 134–147.

Çivitçi, A. (2012). Üniversite öğrencilerinde genel yaşam doyumu ve psikolojik ihtiyaçlar arasındaki ilişkiler. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 21*(2), 321–336.

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

de la Fuente, J., Fernández-Cabezas, M., Cambil, M., Vera, M. M., González-Torres, M. C., & Artuch-Garde, R. (2017). Linear relationship between resilience, learning approaches, and coping strategies to predict achievement in undergraduate students. *Frontiers in Psychology*, *8*, 1039. https://doi.org/10.3389/fpsyg.2017.01039

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Dizén, M., Berenbaum, H., & Kerns, J. (2005). Emotional awareness and psychological needs. *Cognition & Emotion*, *19*(8), 1140–1157. https://doi.org/10.1080/02699930500260468

Dursun, S., & Aytaç, S. (2012). A study on the relationship between expectations and work experiences of university students on the labor market and hopelessness and anxiety levels. *Celal Bayar University Social Science Journal*, *10*(1), 373–388.

Dyrbye, L. N., West, C. P., Satele, D., Boone, S., Tan, L., Sloan, J., & Shanafelt, T. D. (2014). Burnout among US medical students, residents, and early career physicians relative to the general US population. *Academic Medicine*, *89*(3), 443–451. https://doi.org/10.1097/ACM.0000000000000134

Emerson, D. J., Hair, J. F., & Smith, K. J. (2022). Psychological distress, burnout, and business student turnover: The role of resilience as a coping mechanism. *Research in Higher Education*, 1–32.

Ertekin, P. Ş., Bilgiç, D., Demirel, G., Akyüz, M. B., Karatepe, C., & Sevim, D. (2015). Relationship between burnout and life satisfaction of university students in the health field. *TAF Preventive Medicine Bulletin*, *14*(4), 284–292. https://doi.org/10.5455/pmb.1-1417432935

Field, A. (2009). *Discovering statistics using SPSS: Book plus code for E version of text*. SAGE Publications Limited London, UK.

Freudenberger, H. J. (1974). Staff burnout. *Journal of Social Issues*, *30*(1), 159–165. https://doi.org/10.1111/j.1540-4560.1974.tb00706.x

Frey, L. M., & Wilhite, K. (2005). Our five basic needs: Application for understanding the function of behavior. *Intervention in School and Clinic*, *40*(3), 156–160. https://doi.org/10.1177%2F10534512050400030401

Galindo-Domínguez, H., & Pegalajar, M. (2020). Mediator and moderator effect of resilience between self-efficacy and burnout amongst social and legal sciences faculty members. *Revista de Psicodidáctica (English ed.)*, *25*(2), 127–135. https://doi.org/10.1016/j.psicoe.2020.04.001

García-Izquierdo, M., Ríos-Risquez, M. I., Carrillo-García, C., & Sabuco-Tebar, E. d. l. Á. (2018). The moderating role of resilience in the relationship between academic burnout and the perception of psychological health in nursing students. *Educational Psychology*, *38*(8), 1068–1079. https://doi.org/10.1080/01443410.2017.1383073

Garmezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry*, *56*(1), 127–136. https://doi.org/10.1080/00332747.1993.11024627

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference*. 11.0 update (4th ed.). Boston: Allyn & Bacon.

Glasser, W. (1998). *Choice theory: A new psychology of personal freedom.* New York, NY: Harper.

Hair, J., Black, W. C., Babin, B., Anderson, R. E., & Tatham, R. (2014). Pearson new international edition. *Multivariate data analysis, Seventh Edition. Pearson Education Limited Harlow, Essex*.

Hakanen, J. J., & Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of Affective Disorders*, *141*(2-3), 415–424. https://doi.org/10.1016/j.jad.2012.02.043

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: Guilford Press.

Heckert, T. M., Cuneio, G., Hannah, A. P., Adams, P. J., Droste, H. E., Mueller, M. A., Wallis, H. A., Griffin, C. M., & Roberts, L. L. (2000). Creation of a New Needs Assessment Questionnaire. *Journal of Social Behavior and Personality*, *15*(1), 121.

Heinen, I., Bullinger, M., & Kocalevent, R.-D. (2017). Perceived stress in first year medical students-associations with personal resources and emotional distress. *BMC Medical Education*, *17*(1), 4. https://doi.org/10.1186/s12909-016-0841-8

Herrero, D. M. (2014). *The relationship among achievement motivation, hope, and resilience and their effects on academic achievement among first-year college students enrolled in a Hispanic-serving institution.* Texas A&M University-Corpus Christi.

Karaman, M. A., & Watson, J. C. (2017). Examining associations among achievement motivation, locus of control, academic stress, and life satisfaction: A comparison of US and international undergraduate students. *Personality and Individual Differences*, *111*, 106–110. https://doi.org/10.1016/j.paid.2017.02.006

Kaya, F., & Odaci, H. (2021). The adaptation of the Connor-Davidson Resilience Scale Short Form into Turkish: A validity and reliability study. *HAYEF: Journal of Education*, *18*(1), 38–55.

Kesici, Ş. (2008). Yeni psikolojik ihtiyaç değerlendirme ölçeğinin Türkçe formunun geçerlik ve güvenirlik çalışması doğrulayıcı faktör analizi sonuçları. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* (20), 493–500.

Köker, S. (1991). *Normal ve sorunlu ergenlerin yaşam doyumu düzeylerinin karşılaştırılması.* Yayınlanmamış Yüksek Lisans Tezi, Ankara Üniversitesi, Ankara.

Kutsal, D. (2009). *Lise öğrencilerinin tükenmişliklerinin incelenmesi.* Yüksek Lisans Tezi. Hacettepe Üniversitesi, Ankara.

Liu, Y., Wang, Z.-H., & Li, Z.-G. (2012). Affective mediators of the influence of neuroticism and resilience on life satisfaction. *Personality and Individual Differences*, *52*(7), 833–838. https://doi.org/10.1016/j.paid.2012.01.017

McClelland, D. C. (1961). *The achieving society*. New York: The Free Press.

Madigan, D. J., & Curran, T. (2021). Does burnout affect academic achievement? A meta-analysis of over 100,000 students. *Educational Psychology Review*, *33*(2), 387–405. https://doi.org/10.1007/s10648-020-09533-1

Maraşlı, M. (2005). Bazı özelliklerine ve öğrenilmiş güçlülük düzeylerine göre lise öğretmenlerinin tükenmişlik düzeyleri. *Mesleki Sağlık ve Güvenlik Dergisi*, *6*(23), 27–33.

Maslach, C. (1982). *Burnout: The cost of caring*. New York: PrenticeHall.

Maslach, C., & Goldberg, J. (1998). Prevention of burnout: New perspectives. *Applied and Preventive Psychology*, *7*, 63–74. https://doi.org/10.1016/S0962-1849(98)80022-X

Maslow, A. (1954). The instinctoid nature of basic needs. *Journal of Personality*, *22*(3), 326–347. https://doi.org/10.1111/j.1467-6494.1954.tb01136.x

Moghadam, M. T., Abbasi, E., & Khoshnodifar, Z. (2020). Students' academic burnout in Iranian agricultural higher education system: The mediating role of achievement motivation. *Heliyon*, *6*(9), e04960. https://doi.org/10.1016/j.heliyon.2020.e04960

Moneta, G. B. (2011). Need for achievement, burnout, and intention to leave: Testing an occupational model in educational settings. *Personality and Individual Differences*, *50*(2), 274–278. https://doi.org/10.1016/j.paid.2010.10.002

Pavot, W., & Diener, E. (2004). The subjective evaluation of well-being in adulthood: Findings and implications. *Ageing International*, *29*(2), 113–135. https://doi.org/10.1007/s12126-004-1013-4

Sagie, A., & Elizur, D. (1999). Achievement motive and entrepreneurial orientation: A structural analysis. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *20*(3), 375–387. https://doi.org/10.1002/(SICI)1099-1379(199905)20:3%3C375::AID-JOB884%3E3.0.CO;2-Y

Schaufeli, W. B., Martinez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, *33*(5), 464–481. https://doi.org/10.1177%2F0022022102033005003

Schoemann, A. M., Boulton, A. J., & Short, S. D. (2017). Determining power and sample size for simple and complex mediation models. *Social Psychological and Personality Science*, *8*(4), 379–386.

Shankland, R., Kotsou, I., Vallet, F., Bouteyre, E., Dantzer, C., & Leys, C. (2019). Burnout in university students: The mediating role of sense of coherence on the relationship between daily hassles and burnout. *Higher Education*, *78*(1), 91–113. https://doi.org/10.1007/s10734-018-0332-4

Smith, K. J., & Emerson, D. J. (2021). Resilience, psychological distress, and academic burnout among accounting students. *Accounting Perspectives*, *20*(2), 227–254. https://doi.org/10.1111/1911-3838.12254

Tepeli Temiz, Z., & Tarı Cömert, I. (2018). The relationship between life satisfaction, attachment styles and psychological resilience in university students. *The Journal of Psychiatry and Neurological Sciences*, *31*(3), 274–283. https://doi.org/10.5350/DAJPN2018310305

Toprak, H. (2014). *Ergenlerde mutluluk ve yaşam doyumunun yordayıcısı olarak psikolojik sağlamlık ve psikolojik ihtiyaç doyumu*. Sakarya Üniversitesi. Sakarya.

Wang, Q., Wang, L., Shi, M., Li, X., Liu, R., Liu, J., Zhu, M., & Wu, H. (2019). Empathy, burnout, life satisfaction, correlations and associated socio-demographic factors among Chinese undergraduate medical students: An exploratory cross-sectional study. *BMC Medical Education*, *19*(1), 1–10. https://doi.org/10.1186/s12909-019-1788-3

Ye, Y., Huang, X., & Liu, Y. (2021). Social support and academic burnout among university students: A moderated mediation model. *Psychology Research and Behavior Management*, *14*, 335. https://doi.org/10.2147%2FPRBM.S300797

Yetim, U. (1991). *Kişisel projelerin organizasyonu ve örüntüsü açısından yaşam doyumu* (Doctoral dissertation). Retrieved from CoHE Thesis Center. (Thesis No: 16120).

Zhang, Y., Gan, Y., & Cham, H. (2007). Perfectionism, academic burnout and engagement among Chinese college students: A structural equation modeling analysis. *Personality and Individual Differences*, *43*(6), 1529–1540. https://doi.org/10.1016/j.paid.2007.04.010

Zunker, V. G. (2002). *Career counseling: Applied concepts of life planning*. Brooks/Cole-Thomson Learning.