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The Link Between Cognitive Flexibility and Educational Stress Among High School Students: Mediation Through Perception of Teacher Acceptance

Lise Öğrencilerinin Bilişsel Esneklik ile Eğitsel Stres Düzeyleri Arasındaki İlişkide Algılanan Öğretmen Reddinin Aracı Rolü

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ABSTRACT

This study examined the relationship between adolescents' cognitive flexibility and educational stress and the mediating role of perception of teacher acceptance on this relation. The study was based on a sample of 331 high school students in Turkey (145 male and 186 female). The age of students ranged from 14 to 18 years (Mage =16.12, SD=1.26). The child version of the Teacher Acceptance-Rejection/Control Questionnaire, Cognitive Flexibility Scale, Educational Stress Scale, and the Personal Information Form were used as measures. The results show that female students' perception of teacher acceptance, and educational stress level were significantly higher than male students. Resuts also show that educational stress was significantly correlated with perception of teacher acceptance, cognitive flexibility, and age negatively. Finally, the result of the mediation analysis revealed that perception of teacher acceptance mediated the relationship between cognitive flexibility and educational stress. The results are discussed based on literature, and suggestions for researchers and practitioners were proposed.

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ÖZET

Bu çalışmada ergenlerin bilişsel esnekliği ile eğitsel stresleri arasındaki ilişki ve algılanan öğretmen kabulünün bu ilişki üzerindeki aracı rolü incelenmiştir. Çalışma grubu, Türkiye'deki 331 lise öğrencisinden (145 erkek ve 186 kız) oluşturulmuştur. Öğrencilerin yaşları 14 ile 18 arasında değişmektedir (Ortyaş = 16.12, Ss = 1.26). Öğretmen Kabul-Red/ Kontrol Ölçeği: Çocuk Formu, Bilişsel Esneklik Ölçeği, Eğitsel Stres Ölçeği ve Kişisel Bilgi Formu ölçme araçları olarak kullanılmıştır. Sonuçlar, kız öğrencilerin algılanan öğretmen kabulü ve eğitsel stres düzeylerinin erkeklere göre daha yüksek olduğunu göstermiştir. Bir diğer sonuç, eğitsel stres ile algılanan öğretmen kabulü, bilişsel esneklik ve yaş arasında negatif yönde anlamlı ilişki olduğudur. Son olarak, algılanan öğretmen kabulünün, bilişsel esneklik ile eğitsel stres arasındaki ilişkiye aracılık ettiği ortaya konmuştur. Sonuçlar literatüre dayalı olarak tartışılmış, araştırmacılar ve uygulayıcılar için öneriler sunulmuştur.

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Ethical Statement: This research was completed in line with the Helsinki Declaration.

INTRODUCTION

Stress, defined as the reaction of individuals to situations that threaten their mental and physical structures (Folkman & Lazarus, 1988), can be experienced in every period of life and various fields. Adolescence is the period in which physiological and psychological changes are intense, and this change is a source of stress for adolescents (Patterson & McCubbin, 1987). Moreover, having exams that shape their careers in this period increases the likelihood of adolescents experiencing educational stress (Sun, Dunne, Hou, & Xu, 2013). Therefore, with a high young population (aged 0-19 30.71% [Turkish Statistical Institute, 2019]) and an education system that is based on exams in Turkey, explaining students' educational stress is critical. Considering that educational stress affects students' psychological adjustment (Singh, 2019), level of happiness (Mahmoodi, Nadrian, Javid, Ahmadi, Kasravi, Chavoshi, & Golmohammadi, 2019), life satisfaction (Karaman, Nelson, & Vela, 2018), the significance of the subject becomes more apparent.

Educational stress, also called as academic stress, has various definitions. Low academic grades, poor school conditions or excessive homework loads (Burnett & Fanshawe, 1997; Kouzma & Kennedy, 2004), students' and relatives' academic expectations (Ang & Huan, 2006), perceived academic pressure (Xie, 2007), and academic demands that exceed an individual's skills and abilities (Wilks, 2008) are among the definitions of educational stress. Finally, Sun, Dunne, Hou, and Xu (2011) define educational stress as a combination of perceived work pressure and workload, grade anxiety, self-anticipation, and hopelessness. In this study, educational stress was based on the explanation of Sun et al. (2011).

Previous research studies documented that individuals with a higher level of educational stress were mainly female students (Xie, 2007; Zhao & Yuan, 2006), relatively older students (Balta-Özkan, 2019; Yetin, 2014; Zhao & Yuan, 2006), students with low family income (Li, Feng, Mei, & Yao, 2007), and students with low family education level (Balta-Özkan, 2019). When the aspect of school life was taken into consideration, students in private schools (Singh, 2019), in urban areas (Balta-Özkan, 2019), in vocational high schools (Yetim, 2014), with low academic achievement (e.g., Sun, Dunne, Hou, & Xu, 2011; Xie, 2007), in class size between 26 and 30 compared to more crowded classes (Balta-Özkan, 2019) were found to have a higher level of educational stress. Additionally, it is known that students with higher educational stress are susceptible to anxiety, depression, and anger symptoms (Bjorkman, 2007).

The cognitive process of an individual affects the level of stress and coping style (Anshel & Wells, 2000; Bjorck, Cuthberston, Thurman, & Lee, 2001; Mikulincer & Florian, 1995; Pakenham, 2001). Moreover, flexibility in the cognitive process is associated with many variables that educational stress is related to including anger (Diril, 2011), anxiety (Öz, 2012), depression (Güler, 2015), and academic success (Kılıç, 2008). This suggests that there may be a relation between cognitive flexibility and educational stress. Cognitive flexibility can be defined as the awareness of alternatives suitable for different situations (Martin & Anderson, 1998), redefining problems (Thurstone & Runco, 1999), and being confident to control existing alternatives (Maltby, Day, McClutcheon, Martin, & Cayanus, 2004). Some other definitions include the ability to (a) rearrange information processing strategies to face sudden developments (Canas, 2006), (b) switch from one thought to another flexibly (Stevens, 2009), (c) evaluate difficult situations as resolvable (Gülüm & Dağ, 2012), and (d) provide new impressions to solve problems in unexpected situations (Çuhadaroğlu, 2011). As can be understood from the definitions, the important aspect of cognitive flexibility does not perceive the most right option, but being able to see

many different options before choosing (Martin & Anderson, 1998). It is accepted that the development of cognitive flexibility, which starts to develop in parallel with the cognitive process that begins to develop in the first years of childhood (Anderson, 2002), occurs between the ages of 3 and 5 (Dick, 2014). This feature may allow cognitive flexibility to be evaluated as a trait. In light of all this information, cognitive flexibility was included in the research model as the first predictor of educational stress.

Students' positive relationships with their teachers, teachers' interests, and positive orientations can greatly reduce students' educational stress (Margot, 2007; Sun et al., 2013). In Rohner's interpersonal acceptance-rejection theory (IPARTheory), Rohner explains four teacher behaviors showing students' acceptance from their teachers including (1) warmth and affection, (2) not acting with hostility or aggression, (3) not showing indifference/negligence, and (4) not experiencing undifferentiated rejection—although there is no visible behavior that the teacher neglects or is uncompassionate or aggressive towards their students, students believe that their teacher does not love or care about them—(Rohner & Khaleque, 2005; Rohner, Khaleque, & Courneyer, 2012). According to the IPART theory, teachers are a figure of attachment and teachers' behaviors affect students' personalities (Rohner, 2010; Rohner, Khaleque, Elis, & Sultana, 2010; Tulviste & Rohner, 2010). Similarly, the same effect continues on students' school life. According to the related literature, there is a positive relationship between students' perception of teacher acceptance and (a) academic achievement, (b) attitudes towards school, (c) desired student behaviors in schools, (d) GPA (Ali, 2011; Ali, Khaleque, & Rohner, 2015; Erkman, Caner, Borkan, & Sahan, 2010; Khan, Haynes, & Armstrong, 2008; Parmar & Rohner, 2010; Rohner, 2010; Rohner, Parmar, & Ibrahim, 2010). Based on this information, the perception of teacher acceptance was thought to be effective in educational stress and included in the model as a second predictor variable.

In the related literature, studies using the variables mentioned above were not encountered during the literature review for this study. For this reason, the model related to the mediating role of perception of teacher acceptance in the relationship between cognitive flexibility and educational stress was created based on a theoretical/logical basis. Since the cognitive style of an individual can affect both his character and social interaction (e.g., parent-child, teacher-student, and therapist-client relationship; Witkin, 1973), the flexibility in students' cognitive structures can be effective in accepting or rejecting teacher behaviors. This means that cognitive flexibility starting from the first years of life, including features such as a flexible transition from one thought to another (Stevens, 2009) and assessing a situation as resolvable (Gülüm & Dağ, 2012), may lead to alternative thinking on teacher behaviors. Researchers in this study considered that the relationship between students' cognitive flexibility and educational stress levels and the mediating role of students' perception of teacher acceptance in this relationship could be explained through the way as shown in Figure 1. In light of all this information, the purpose of this research was to examine the relationship between cognitive flexibility and educational stress levels of high school adolescents and the mediating role of perception of teacher acceptance in this relationship. Therefore, the study was conducted to address the following questions.

1. Do the perception of teacher acceptance, cognitive flexibility, educational stress, grade point average, and age differ based on gender?

2. (a) Is there a relationship between age and educational stress?

   (b) Is there a relationship between academic grade point average and educational stress?

3. (a) Is there a link between cognitive flexibility and educational stress significantly?

(b) Is there a link between perception of teacher acceptance and educational stress significantly?

(c) Does the perception of teacher acceptance mediate the link between cognitive flexibility and educational stress?

METHOD

Research Model

In this study, a correlational research design was used to determine the relationships between cognitive flexibility, perception of teacher acceptance, and educational stress.

Study Group

Participants in this study were recruited via convenience sampling method. Convenience sampling is one of the nonprobability sampling methods in which researchers select participants who are easy to find for targeted research (Erkuş, 2016, p. 138). The participants of this study were 331 high school students from Turkey. While 145 (%44) students were male, 186 (%56) students were female. The age of students ranged from 14 to 18 years (Mage =16.12, SD=1.26).

Table 1. Descriptive Statistics

	Gender	N	Mean	Sd	Skewness	Kurtosis
Perception of Teacher Acceptance	Male	145	44.24	11.58	.689	.148
	Female	186	41.65	9.18		
	Total	331	42.78	10.37		
Cognitive Flexibility	Male	145	45.99	9.30	-.132	-.231
	Female	186	47.64	7.99		
	Total	331	46.92	8.61		
Educational Stress	Male	145	51.32	10.40	-.303	-.100
	Female	186	54.46	9.01		
	Total	331	53.08	9.75		
Grade Point Average (GPA)	Male	145	64.37	15.03	-.626	.290
	Female	186	75.67	12.16		
	Total	331	70.72	14.60		
Age	Male	145	16.18	1.33	.204	.124
	Female	186	16.08	1.20		
	Total	331	16.12	1.26		

Ethical Statement

This research was completed in line with the Helsinki Declaration. Additionally, data tools in the study were only distributed to volunteer participants. All participants provided informed consent. Additionally, participants were informed that they could withdraw from the study at any time during data collection.

Data Collection Tools

Teacher's Acceptance-Rejection Questionnaire-Child Version Short Form. This measure was used to estimate the perception of teacher acceptance levels (Rohner & Khaleque, 2005). The questionnaire contains 24 items. The measure consists of four scales: (1) Warmth/Affection (e.g. My

teachers say nice things about me), (2) Hostility/Aggression (My teachers feels other children are better than I am no matter what I do), (3) Indifference/Neglect (My teachers pay no attention to me), and (4) Undifferentiated rejection (My teachers seem to dislike me). The TARQ is scored on a 4-point Likert scale ranging from 1 = almost never true to 4 = almost always true. The sum of scores can range from 24 to 96. As commonly used in the worldwide, total scores were used in this study. A high total score shows a low perception of teacher acceptance of students. Scores below 60 on the acceptance-rejection portion of the TARQ indicate that the teacher is perceived to be qualitatively more accepting than rejection. It means a low total score shows high perception of teacher acceptance. Cronbach's alpha coefficient of the Turkish adapted version of the TARQ is .90 (Yıldırım & Erkman, 2008). Cronbach's alpha coefficient of the TARQ in this study was .83.

Cognitive Flexibility Scale (CFS). This measure was developed by Martin and Rubin (1995) to estimate the cognitive flexibility levels of high school students. The questionnaire contains 12 items. However, Turkish adapted version of the CFS contains 11 items. Sample items include "I can find practical / useful solutions to difficult problems that seem to be unsolvable.", "I can express an idea / thought in many different ways.". The CFS is scored on a 6-point Likert scale ranging from 1 = strongly disagree to 6 = strongly agree. The sum of scores can range from 11 to 66. A high total score shows high cognitive flexibility. Cronbach's alpha coefficient of the Turkish adapted version of the CFS is .73 (Çelikkaleli, 2014). Cronbach's alpha coefficient of the CFS in this study was .77.

Education Stress Scale (ESSA). This measure (Sun et al., 2011) was used to estimate the level of perceived academic stress. It contains 16 items under five factors including (1) Pressure from study (four items), (2) Workload (three items), (3) Worry about grades (three items), (4) Self-expectation stress (three items), and (5) Despondency (three items). Sample items include "I feel a lot of pressure in my daily studying" (Pressure from study), "I feel there is too much homework" (Workload), "I feel that I have disappointed my teacher when my test/exam results are not ideal" (Worry about grades), "I feel stressed when I do not live up to my own standards" (Self-expectation stress), and "I always lack confidence with my academic scores" (Despondency). The ESSA is scored on a five-point Likert-type scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The total score, ranges from 16 to 80, with higher values indicating greater perceived stress. Total scores were used in this study. The Cronbach's alpha for original the ESSA is .81. Cronbach's alpha coefficient for the Turkish adapted version of the ESSA was reported as .86 (Çelik, Akın, & Sarıcam, 2014), and the Cronbach's alpha of the ESSA in this study was .79.

Personal Information Form. This form included questions about age, gender, and GPA. GPA was based on students' end-of-the latest-grade transcript records. A higher GPA reflected better academic performance.

Process

Students completed the necessary questionnaires during regular classroom meetings. The researcher of this study stayed in the classroom during the data collection. Before responding, the researcher informed participants about the purpose of research, and the anonymity and confidentiality of their responses. participants who want to participate in the research responded to the Turkish-language versions of the self-report questionnaires as described below. This process took approximately about 20 minutes to complete.

Data Analysis

In the first step, missing data and outlier analysis have done. Eight missing data and three outliers (Mahalonabis (df=4)=18.47) was deleted. Analyzes were done for 331 adolescent high school students. Skewness and kurtosis analyses showed values between -1.5 and +1.5 (Tabachnick & Fidell, 2007, p. 79) indicating that the sample was a normal distribution. Descriptive statistics, Pearson momentler correlation analysis, and t-test for independent groups were used to analyze the data. In addition, the SPSS macro PROCESS (Model 4) was run to examine the mediating effect of perception of teacher acceptance between cognitive flexibility and educational stress. As seen in Figure 1, perception of teacher acceptance was a mediator (PTA) of the relationship between cognitive flexibility (CF) and educational stress (ES). Age, gender, and GPA were included as a control variable in the mediation model. A confidence interval of 95% deviation correction (bias-corrected confidence intervals) was constructed by extracting 5000 bootstrap samples. In this procedure, a sample cases from the complete data set was selected and the effects were determined in the resamples to generate the bootstrapping sampling distributions. When a confidence interval did not span zero, the result was considered statistically significant as noted by Preacher and Hayes (2008).

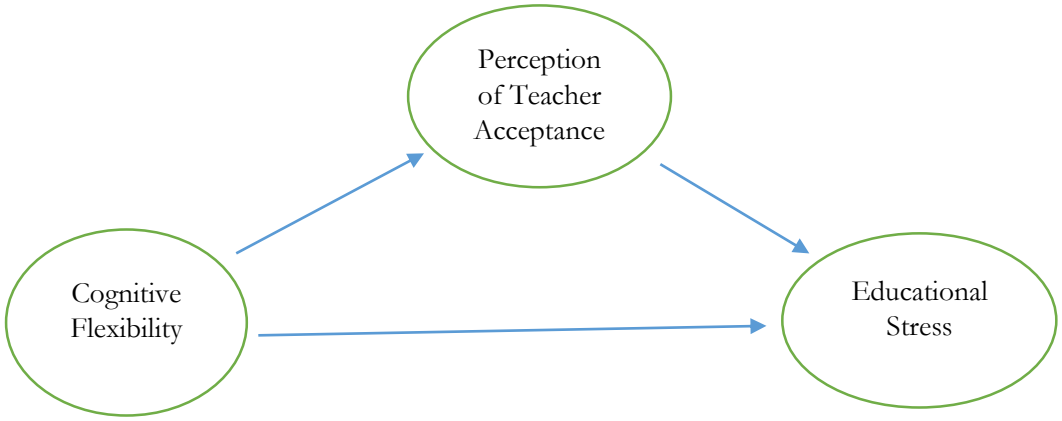

Figure 1. Mediation effect of perception of teacher acceptance on the relation between cognitive flexibility and educational stress

RESULTS

Gender Differences

Table 2. displays independent t test results for variables assessed in the present study. The results show that female students' perception of teacher acceptance (t= - 2.26, p<.05; M(female= 41.65/ M(male)= 44.24), educational stress level (t= 2.95, p<.01; M(female= 54.46/ M(male)= 51.32) and GPA (t=7.55, p<.001; M(female)= 75.67/ M(male)= 64.37). were significantly higher than male students.

Table 2. Results of descriptive statistics with gender differences in major variables

	Gender	N	Mean	Sd	t	p
Perception of Teacher Acceptance	Male	145	44.24	11.58	- 2.26	.024*
	Female	186	41.65	9.18		
Cognitive Flexibility	Male	145	45.99	9.30	1.74	.083
	Female	186	47.64	7.99		
Educational Stress	Male	145	51.32	10.40	3.07	.002**
	Female	186	54.46	9.01		
Grade Point Average (GPA)	Male	145	64.37	15.03	7.55	.000***
	Female	186	75.67	12.16		
Age	Male	145	16.18	1.33	-.706	.481
	Female	186	16.08	1.20		

Note: The high mean of perception of teacher acceptance shows a low perception of teacher acceptance of students.
$^{**}p < .01$. $^{***}p < .001$.

Correlations

As shown in Table 3, educational stress was significantly correlated with age (r= -.29, p<.01). However, educational stress was not correlated with GPA. Additionally, educational stress related to perception of teacher acceptance (r = .18, p<.01) and cognitive flexibility (r = -.15, p<.01).

Table 3. Results of correlation analyses with correlation coefficients among major variables

Variables	1.	2.	3.	4.	5.
1. Perception of Teacher Acceptance	-				
2. Cognitive Flexibility	**-.36****	-			
3. Educational Stress	**.18****	-.15**	-		
4. Grade Point Average (GPA)	**-.23****	.21**	.04	**-**	
5. Age	.003	.12*	-.29**	**-.17****	-

**p<.01, *p<.05.

Direct, Indirect, and Total Effects of Cognitive Flexibility on Educational Stress

As shown in Table 4, cognitive flexibility predicted educational stress (Bse.06= -.14, t(331) = -2.38, p = .017) and perception of teacher acceptance (Bse.06) = -.39, t (331) = - 6.20, p = .000).

Table 4. Results of mediation analyses with estimated coefficients for mediation model of perception of teacher acceptance

							Bootstrap Indirect Effect 95% CI	
Model	***R²***	***F***	***df***	***B***	***se***	***p***	***LL***	***UL***
CF->ES (Path c)	.12	11.74	4	-.14	.06	.000 .017	*-.26*	-.02
CF-> PTA (Path a)	.15	14.75	4	-.39	.06	.000 .000	-.52	-.27
CF->PTR->ES	.15	11.67	5			000		

(path b)	.17	.05	.001	.06	.27
(path c')	-.07	.06	.210	-.20	.04

Note. CI = confidence interval; LL = lower limit; UL = upper limit, CF = cognitive flexibility, ES = educational stress, PTA = perception of teacher acceptance.
$^{*}p < .05$. $^{***}p < .001$.

The direct effect of perception of teacher acceptance on educational stress was significant (Bse.05= .17, t = 3.17, p = .001). Results of mediation analyses revealed that perception of teacher acceptance mediated the relationship between cognitive flexibility and educational stress. It means that the indirect effect of cognitive flexibility on educational stress through the perception of teacher acceptance was significant (B(se=.02) = - .07; LLCI= -.12, ULCI= -.02 [95% CI]). The relationship between cognitive flexibility and educational stress was not significant when perception of teacher acceptance was added into the mediation model. This means that it was a complete mediation model (c', Bse.06 = -.07, t = -1.25, p=.210). The model explained 15% of the educational stress (R2 = .15). Besides, the scores of the control variables age and gender (but not GPA) were significant (respectively, Bse.40= -2.15, t = -5.29, LLCI= -2.94, ULCI= -1.32 [95% CI]; Bse.1.08= -3.68, t = -3.39, LLCI= -5.72, ULCI= -1.38 [95% CI]). Figure 2 shows standardized paths of the mediation model.

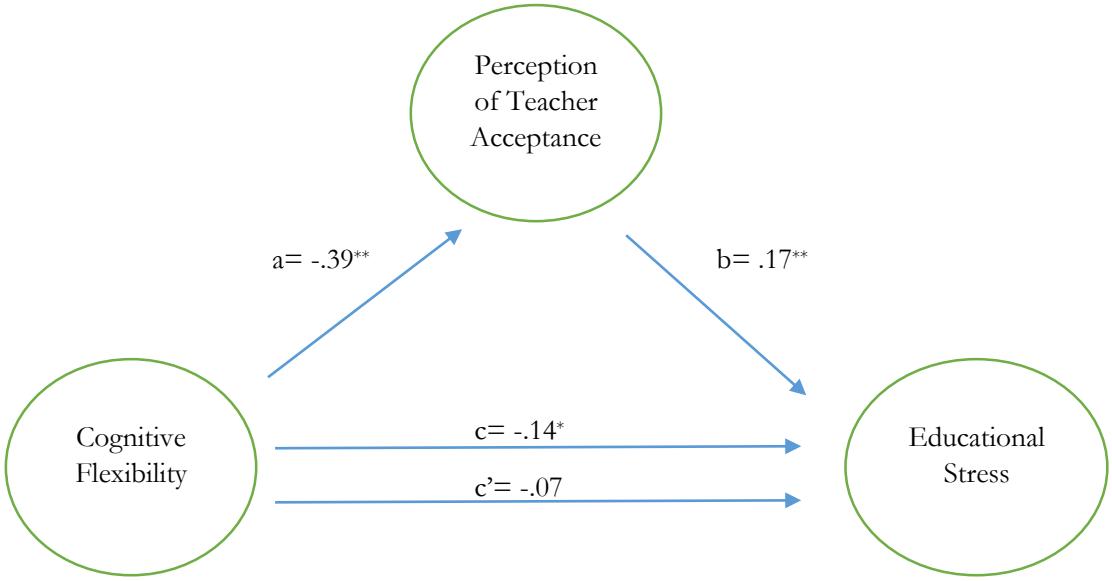

Figure 2. Mediation effect of perception of teacher acceptance on the relation between cognitive flexibility and educational stress.
Note: Age, GPA, and gender were entered into the model as covariates, but are not depicted.
$^{*}p < .05$, $^{**}p < .01$, *** p <.001.

DISCUSSION, CONCLUSION & SUGGESTIONS

The purpose of this study was to examine the relationship between cognitive flexibility and educational stress levels of high school students and the mediating role of high school students' perception of teacher acceptance in this relationship. The results of the study are discussed below.

Gender Differences and Correlations

Educational stress showed variation by gender. The result indicated that female students' educational stress levels was higher than male students'. The fact that females are more stressed than

males (Jones & Hattie, 1991; Matud, 2004), and/or more sensitive to stress sources (Misra & Castillo, 2004) may affect this result. Additionally, collective culture is still a common practice in Turkey comparing to Western countries (Uskul, Hyni, & Lalonde, 2004). Considering that the participants in this study were from the rural side of the country, traditional gender roles can also have an impact on this result. In the traditional culture, family members can see boys as the continuation and future of their families so that they can give priority to their boys in education (Tunç, 2009). This belief can lead families to spend their limited economic resources for their boys and academic pressure on girls as "I have to be successful to be able to go school." Understandably, female students' high educational stress levels due to the high academic expectations (Ang & Huan, 2006) and concerns about academic failure (Jones & Hattie, 1991) increase their educational stress levels. In the related literature, while some studies are showing that educational stress does not change based on gender (e.g., Bağçeci, Döş, & Sarıca, 2011; Pratiksha & Souza, 2018), there are also studies showing similar results with this study (Bayram, 2016; Macit, 2017; Yetim, 2014). The result of higher academic achievement of females compared to males in this study indicates similar results with previous studies (Ayan-Başkal, 2019; Ergene, 2011; Yıldırım & Bahar, 2017).

One of the results of correlation analysis was that relatively older students have lower educational stress than younger ones. Older students are more familiar with their school's rules, exams, teachers, and social environment than younger students who are just beginning school. Considering that educational stress is the stress experienced by the individual in the face of academic demands that exceed his / her skills and abilities (Wilks, 2008), it can be understood that the educational stress level of new students is high. Besides, skills that may develop with age (active coping, problem-solving, seeking help, etc.) may also have an effect on the result. However, prior studies indicated that academic stress increases based on students' ages (Balta-Özkan, 2019; Yetim, 2014; Zhao & Yuan, 2006). The number of exams that children have to take as they age, the need to plane a career, and determine their education path may play a role in this. These developmental tasks may lead to pressure from the students' families. Nevertheless, there are also studies where academic stress does not change based on age (Misra & McKean, 2000).

A surprising result of correlation analysis was that there was no significant relationship between educational stress levels and GPA. Although limited research studies are supporting the result (e.g., Arsenio & Loria, 2014), this result is not in line with the expectation and does not overlap with the common results in the related literature (e.g., Bjorkman, 2007; Sun, Dunne, Hou, & Xu, 2011; Xie, 2007; Zhao & Yuan, 2006) since the concept of educational stress has been considered with academic success and fulfillment of responsibilities in schools (Agolla & Ongori, 2009). Controlling other factors affecting students' academic success (i.e., depression, anxiety, suicidal ideation; Sun, Dunne, Hou, & Xu, 2011) or including school type (Singh, 2019; Yetim, 2014), school facilities (Balta-Özkan, 2019) and family-related issues (Li, Feng, Mei, & Yao, 2007) as moderating or mediating variables, similar studies can be conducted.

Direct, Indirect, and Total Effects of Cognitive Flexibility on Educational Stress

The direct effect of cognitive flexibility on educational stress levels was significant. This means that cognitive flexibility including skills such as seeing the source of stress as solvable (Gülüm & Dağ, 2012), self-confidence on alternative thinking (Maltby, Day, McClutcheon, Martin, & Cayanus, 2004), and redefining the problem (Thurstone & Runco, 1999) may explain the students' educational stress levels. Although there are no similar studies, it can be said that the results of lower stress levels of students

with high cognitive flexibility (Altunkol, 2011, 2017; Demirtaş, 2019; Turan, Durgun, Kaya, Ertaş, & Kuvan, 2019) are partially overlapping.

The results of this study documented that the direct effect of perceiving teacher behavior as accepting teacher behavior was also significant. This result shows that students' thinking of being loved, protected, and not subjected to verbal or physical violence by their teachers (Rohner, 2005, 2010) can be effective at the level of educational stress levels that include students' pressure of studying, work intensity, excessive expectations, and hopelessness. No studies investigating the relationship between perception of teacher acceptance and educational stress levels were found in the literature. However, similar studies revealed that positive teacher-student relationships reduce adolescents' stress levels (Aswathy, Kasturi, & Maxie, 2015; Lopez, Olaızola, & Ochoa, 2006) and the academic pressure they feel (Lee, 2012).

A vital result in this research study was that adolescents' perception of teacher acceptance mediated the relationship between their cognitive flexibility and educational stress levels. This means that adolescents' cognitive flexibility could perceive teacher behavior as accepting or deal with problems as solvable even if they encounter rejectionist teacher behavior. The perception of teacher acceptance affected by students' cognitive flexibility may have also affected students' educational stress. Even though there have been no similar studies to compare the results of this study, perception of teacher acceptance impacting the issues related to school (Ali, 2011; Ali, Khaleque & Rohner, 2015; Erkman, Caner, Borkan, & Sahan, 2010; Khan, Haynes, & Armstrong, 2008; Parmar & Rohner, 2010; Rohner, Parmar, & İbrahim, 2010) could make the mediation of perception of teacher acceptance expected.

In this study, there were some limitations. The low R2change score (i.e., .03) indicated that although the perception of teacher acceptance was fully mediated, the model could be reconstructed with other moderating or mediating variables. Although this was an important limitation in this research, it is valuable to give an idea to future research studies. Additionally, since the participants in this study were formed based on the principle of easy access, the results of the study were not generalizable. Besides, the study group was selected from an Anatolian high school. Because teacher-student relationships, academic achievements, and educational stress may differ depending on the types of high school, school types may be a limitation. Therefore, the research can be repeated in vocational high schools. Another limitation was that the discussions of results were only on theoretical/logical grounds because there were no similar studies. Since this study was a correlational research study providing only relational information between variables, it can be stated as another limitation of the study. Despite these limitations, this research study explained that 15% of the educational stresses of adolescents (when age, gender, and GPA were under control) on the perception of teacher acceptance of their cognitive flexibility.

The results of the research contribute to expanding and strengthening the interpersonal acceptance-rejection theory that the perception of teacher acceptance belonging to. Based on the results of this study, practitioners may include cognitive flexibility skills in intervention programs to reduce students' educational stress. Within the scope of consultancy services, teachers can be informed about the effect of accepting teacher behavior on education stress. Researchers can conduct similar studies with different mediative variables (e.g., students' psychological health and self-related concepts). Relevant psychoeducation programs can be developed and tested to reveal the effects of cognitive flexibility on educational stress in the context of cause and effect.

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Author Contributions

FK collected the data, BK conducted the analysis and wrote method and result sections. BK and FK wrote introduction and discussion.

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It has been reported by the authors that there is no conflict of interest.

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In the writing process of the work titled "**The Link Between Cognitive Flexibility and Educational Stress Among High School Students: Mediation Through Perception of Teacher Acceptance"** the scientific, ethical and citation rules were followed, there was no falsification on the data collected, the "Turkish Psychological Counseling and Guidance Journal Editorial Board" had no responsibility for all ethical violations, and all the responsibility belongs to the authors. I undertake that it has not been sent to another academic publishing medium for evaluation.