The Moderating Role of Positive and Negative Affect on the Relationship between Perceived Social Support and Stress in College Students

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Abstract

During college years, which are known as a stressful time, students may often face stress personally, socially, academically, economically, and so forth in various areas of life. One of the important sources that students use to cope with stress is social support. Students can cope with stress easier via the support they receive from their friends or family. While social support is seen as a protective mechanism against stress, some psychological factors may have increasing or decreasing effects on this support. Positive and negative affects, two opposing indicators of individual psychological adjustment, may function differently in this context. In the current study, the moderator roles of positive and negative affect on the relationship between perceived social support and stress in college students was investigated. The sample consisted of 479 undergraduate students from the faculty of education in a public university. Data was collected using the Multidimensional Scale of Perceived Social Support, the Perceived Stress Scale, and the Positive and Negative Affect Scale. In data analysis, hierarchical multiple regression analysis based on the steps of Baron and Kenny's (1986) moderating model was used. The research findings indicate that negative affect has a moderator role in the relationship between perceived social support and stress, whereas positive affect does not have a similar function. Accordingly, as negative affect increases, the positive effect of social support on perceived stress decreases.

Keywords: Social support • Stress • Positive affect • Negative affect • College students

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Stress, a force that many people face and try to cope with in the normal flow of life, is also an inevitable and natural part of the daily life of university students who face the peculiar difficulties of college life. College years are a time when students are responsible for their own health, school life, economic conditions and management of their own lives (Cress & Lampman, 2007; Darling, McWey, Howard, & Olmstead, 2007). This period is accepted as a time in which various difficulties are faced from academic work to uncertainty of what the future holds, from interpersonal relations to romantic relations, from self-problems to familial issues (Chao, 2012). Research shows that 75% of college students perceive themselves as moderately stressed and 12% as highly stressed (Pierceall & Keim, 2007). Concerns about academic achievement, uncertainty about their future, economic hardship, family related problems, difficulties in relations with the opposite sex, and interpersonal relations may also be sources of stress for students (Brougham, Zail, Mendoza, & Miller, 2009; Chao, 2012; Darling et al., 2007; Otrar, Ekşi, Dilmaç, & Şirin, 2002; Ross, Niebling, & Heckert, 1999). Moreover, students also may face stress related to daily life such as health issues, conflicts with faculty, public speech, conflicts with roommates, increasing study loads, and changes in sleeping and eating habits (Darling et al., 2007; Dusselier, Dunn, Wang, Shelley, & Whalen, 2005; Ross et al., 1999).

The stress students may face during university life due to personal, social, academic, economic, and other hardships is a concept related to various adjustment variables. Previous research has shown that stress in college students is related to negative indicators of mental health such as depression, anxiety, and thoughts of suicide (Dusselier et al., 2005; Eisenbarth, 2012; Jou & Fukada, 2002; Otrar et al., 2002; Pengilly & Dowd, 2000; Wilbum & Smith, 2005) and positive indicators such as happiness, life satisfaction, self-esteem, optimism, and hardiness (Cress & Lampman, 2007; Eisenbarth, 2012; Extremera, Durán, & Rey, 2009; Krypel & Henderson-King, 2010; Matheny et al., 2002; Pengilly & Dowd, 2000; Schiffrin & Nelson, 2010; Wilbum & Smith, 2005). As can be seen, the stress college students often face and try to cope with due to the challenging experiences of being a young adult is an important variable of mental health in regard to psychological adjustment.

Various personal sources for university students such as self-disclosure, trust that they will be able to cope with stress, and time and energy management may be functional sources (Matheny et al., 2002). One of the important ways for students to cope with stress is social support (Chao, 2012; Laurence, Williams, & Eiland, 2009). Students naturally seek social support from friends and family when facing stress, and with this support it may be easier for them to cope with stress (Chao, 2012). Previous studies have shown that social support is one of the stress coping sources that predicts perceived stress in college students (Matheny et al., 2002) and only support from family, friends, and faculty have a protective factor function against stress (Bland, Melton, Welle, & Bigham, 2012). Furthermore, there are various relational studies indicating that stress decreases in college students when social support increases (i.e., Chao, 2012; Green, DeCourville, & Sadava, 2012; Luo & Wang, 2009; Pengilly & Dowd, 2000; Reifman & Dunkel-Schetter, 1990; Wright, King, & Rosenberg, 2014). It has also been revealed that social support provides a moderator function between stress and psychological well-being (Chao, 2011, 2012) and between stress and depression (Pengilly & Dowd, 2000). Thus, this shows that social support has a buffer role on the negative effect of stress on psychological well-being and depression.

On the other hand, there are some studies suggesting that the role of social support in decreasing stress may be limited due to some psychological variables. For instance, Laurence et al. (2009) observed that college students with more depressive symptoms perceived less social support and when symptoms of depression were controlled, social support did not predict perceived stress. In Barnes and Lightsey's (2005) study on African-American college students, social support did not predict perceived stress and did not have a moderator function on the relationship between racial discrimination and perceived stress. In another study (McKinley, 2013), the significant negative relation between emotional support and perceived stress in college students lost its significance after the focus on problem solving (coping with stress) was fully mediated. These studies leave the impression that social support that is more related to positive affect (Neely et al., 2006; Zhang, Chan, & Teng, 2011) is not sufficient to decrease the effects of various internal and external negative stimuli that can cause stress, and stress could be decreased as mediated by personal traits such as problem-solving skills. This condition gives rise to the thought that social support is protective against stress in more "ordinary" conditions but is not functional when negative affect is experienced.

Thus, the quality of the relation between social support and stress may differ according to an individual's positive or negative affect experience.

Positive affect reflects the degree to which an individual feels energetic, enthusiastic, cheerful, active, and alive, and negative affect is depicted as a condition of discontentment, not being joyful, or subjective distress, including such feelings as anger, hate, weariness, shame, fear, and irritation (Watson, Clark, & Tellegen, 1988). Individuals with high positive affect have a tendency to be more social, energetic, and active, as well as to join in social activities (Lyubomirsky, King, & Diener, 2005). However, individuals with high negative affect have the tendency to be in a continual state of distress or dissatisfaction under any circumstances. They make more self-observations and usually dwell on their failures and shortcomings. They are focused on the negative aspects of themselves as well as the negative aspects of others and the world they live in (Watson & Pennebaker, 1989).

Research on college students shows that positive and negative affect are related to personality characteristics as well as body and mental health variables such as neuroticism, extroversion, depression, loneliness, self-esteem, and physical health (Finch, Baranik, Liu, & West, 2012; Green et al., 2012; Longua, DeHart, Tennen, & Armeli, 2009; Zhang et al., 2011). Positive and negative affect, which together make up the affective domain of subjective well-being (Diener & Suh, 1997), is also one of the indicators of happiness (subjective well-being) and psychological adjustment. When the negative relation between stress and subjective well-being (Schiffrin & Nelson, 2010) is also considered, it is possible to think that positive and negative affect can reflect on stress which is another adjustment variable and perception of social support as a source for coping with stress.

Previous research reveals that positive affect has a positive relation with social support (Green et al., 2012; Hamama, Ronen, Shachar, & Rosenbaum, 2013) and a negative relation with stress (Al Nima, Rosenberg, Archer, & Garcia, 2013; Green et al., 2012). Meanwhile, negative affect has a negative relation with social support (Brannan, Biswas-Diener, Mohr, Mortazavi, & Stein, 2013; Green et al., 2012; Wright et al., 2014; Zhou, Zhu, Zhang, & Cai, 2013) and a positive relation with stress (Al Nima et al., 2013; Hamama et al., 2013; Green et al., 2012; Jou & Fukada, 2002). While there are no studies investigating the intervening variable role of positive and negative affect on the

relationship between social support and stress, in light of the researches mentioned above it could be hypothesized that positive and negative affect could differentiate the relation between the two variables.

Lyubomirsky et al. (2005), in their study of empirical, longitudinal, and relational study reviews, indicate that positive affect is a "reason" facilitating adjustment skills such as social interaction, problem solving, and coping with stress rather than being a "result." It could be expected that positive affect, a concept highly related to social support (Neely et al., 2006; Zhang et al., 2011), and a factor that increases an individual's adjustment, will facilitate the positive effect of social support in coping with stress. On the other hand, it could also be thought that considering social support as a source for coping with stress does not significantly contribute to the decrease of negative affect (Hamama et al., 2013). The stress decreasing function of social support might be constrained when negative affect is high.

In the current study, the moderator role of positive and negative affect on the relationship between perceived social support and stress is investigated. Accordingly, it is predicted that while social support increases, stress will decrease, and this decrease will be higher in individuals with positive affect and lower in individuals with negative affect.

Method

Research Design

The current study is a descriptive study using a relational survey model investigating the moderator role of positive and negative affect on the relationship between perceived social support and stress in college students. The moderating effect is tested using the hierarchical multiple regression model recommended by Baron and Kenny (1986).

Participants

The sample consisted of 479 undergraduate students from Pamukkale University, in the Faculty of Education. The participants were chosen using simple random sampling from the Art, Music, Science, Social Sciences, Classroom, Pre-School, Counseling and Guidance, Turkish, Mathematics, and English Language Teaching departments. From the total of 479 participants, 329 participants were female and 150 were male, their ages ranging from 17 to 33 (89%), with a mean age of 21.13. Eight of the participants did not report their ages. In the

sample group, 111 of the participants were first-year students, 93 second-year students, 166 third-year students, and 109 were fourth-year students.

Instruments

Multidimensional Scale of Perceived Social Support (MPSS): The MPSS developed by Zimet et al. in 1988 measures social support from three sources: family, friends, and significant other. The scale consists of three sub-dimensions (family support, friend support, and significant-other support) and 12 items in total. While separate scores are obtained for every sub-scale, each of which consists of four items, a total overall score of responses to all items is also calculated. The scale items are answered based on a 7-point Likert scale ranging from "very strongly disagree" to "very strongly agree." Higher scores obtained from the scale indicate higher perceived social support. The scale was adapted to Turkish by Eker and Arkar (1995), and in the years that followed, the psychometric features of the scale were reviewed by Eker, Arkar, and Yaldız (2001) and Duru (2007). The studies conducted on college students using the Turkish adaptation (Duru, 2007; Eker et al., 2001) prove that the validity and reliability of the scale is intact, having construct validity, concurrent validity, internal consistency and test-retest reliability. The internal consistency coefficient obtained from the total score of the current study was calculated as .84.

Perceived Stress Scale: The original form of the Perceived Stress Scale was developed by Cohen, Kamarck, and Mermelstein (1983) and consists of 14 items. In the current study, the shortened version consisting of 10 items was used. The scale is aimed towards determining to what degree an individual perceives their life to be uncontrollable, unpredictable, or burdening. The items that measure the frequency of stressful situations in the past month are answered based on a 5-point Likert Scale ranging from "never" to "very often." A higher total score indicates higher perceived stress. The Turkish adaptation of the scale used with college students (Eskin, Harlak, Demirkıran, & Dereboy, 2013; Örücü & Demir, 2009) indicates that the construct validity, concurrent validity, internal consistency, and test-retest reliability values of the scale show sufficient psychometric features. The internal consistency coefficient obtained from the total score of the current study was calculated as .85.

Positive and Negative Affect Scale (PANAS): The Positive and Negative Affect Scale developed by Watson, Clark, and Tellegen (1988) consists of 10 items each measuring positive and negative affect for the two different moods. Participants answer the mood (unhappy, distressed, strong, active, etc.) in the items related to how they felt in the past two weeks based on a 5-point Likert Scale ranging from "very slightly," (or "not at all") to "very much." A high score in either dimension indicates an increase in either positive or negative affect. The Turkish adaptation of the scale, adapted by Gençöz (2000), tested with college students indicates that the validity and reliability of the scale is intact, having concurrent validity, internal consistency, and test-retest reliability. The internal consistency coefficients in the current study were calculated as .85 for positive affect and .84 for negative affect.

Procedure

Data collection applications were administered in a classroom environment with volunteer students and lasted approximately 20 minutes. Before administration, the purpose of the study was explained to the students and they were instructed that their replies would be used only within the scope of the current study without any personal analysis. It was also stressed for the sake of reliability of the research results that sincere and accurate responses were important and the students were asked to check for any missing responses before they handed in their forms.

Data Analysis

The moderator effects of positive and negative affect were tested using hierarchical multiple regression analysis based on the steps of Baron and Kenny's (1986) moderating model. In order to decrease the multicollinearity problems in the analyses, standard z-scores were used. Details about data analyses are given in the section on findings.

Results

Descriptive statistics and correlations for the research variables are presented in Table 1. As shown in Table 1, considering the kurtosis and skewness values (± 1), it is understood that the data is normally distributed. As expected, positive affect was negatively correlated with perceived stress and positively correlated with perceived social support, also, negative affect was positively correlated with perceived stress and

Table 1
Descriptive Statistics and Inter-correlations of all Variables in the Study

	M	SD	Skewness	Kurtosis	1	2	3	4
1. Perceived stress	30.43	5.94	.17	.01	-			
2. Perceived social support	66.18	13.78	-.64	.10	-.20*	-		
3. Positive affect	32.12	7.72	-.24	-.34	-.46*	.14*	-	
4. Negative affect	21.76	7.19	.69	.12	.66*	-.20*	-.28*	-

*$p < .01$.

negatively correlated with perceived social support. In addition, it was observed that there was a negative relationship between perceived stress and perceived social support.

Hierarchical multiple regression analysis was performed to test the moderating effects of positive and negative affect on the relationship between perceived social support and perceived stress, as recommended by Baron and Kenny (1986). Before the analysis, the predictor (social support) and moderator (positive and negative affect) variables were standardized to reduce problems associated with multicollinearity (i.e., high correlations) between the interaction term and main effects when testing for moderator effects (Frazier, Tix, & Barron 2004). Thus, standardized *z*-scores were calculated for perceived social support, positive affect, and negative affect; these scores were then used in the analysis. In the regression analysis, tolerance values of .10 or less and VIF (Variance Inflation Factor) values of 10 or more show a multicollinearity problem (Cohen, Cohen, West, & Aiken, 2003). In this study, the tolerance values were between .97 and 1, and the VIF values were between 1 and 1.07. These results indicate that there is no problem with multicollinearity.

In the moderation model, the criterion (predicted) variable is perceived stress, the predictive variable is perceived social support and the candidate

moderator variables are positive and negative affects. For each of the moderator variables, hierarchical regression analysis was conducted. The predictor variable, perceived social support, was entered into the analysis during the first step. The candidate moderator variables, positive and negative affect, were entered into the regression equations for the second step. In the third step, the interactions of predictor and moderator variables, social support X positive and negative affect, were entered into the regression model. For step three, a significant change in the R^2 for the interaction term indicates a significant moderator effect. The results of the hierarchical regression analysis are presented in Table 2 and Table 3.

As seen in Table 2, social support ($\beta = -.20$, $p < .001$) and positive affect ($\beta = -.44$, $p < .001$) significantly predicted perceived stress. However, there was no significant interaction between social support and positive affect ($\beta = -.04$, $p > .05$). According to the findings, positive affect had no moderating effect on the relationship between perceived social support and stress. In other words, as social support increased perceived stress decreased, however this relationship did not change depending on whether positive affect was high or low.

Table 2
The Results of Hierarchical Regression Analysis for the Moderating Effect of Positive Affect on the Relationship between Social Support and Perceived Stress

Variables	B	SEB	β	t	R^2	R^2 change
Predicted variable: Perceived stress						
Step 1						
Social support	-1.21	.27	-.20	-4.52**	.04	.04**
Step 2						
Social support	-.84	.24	-.14	-3.46*	.23	.19**
Positive affect	-2.63	.24	-.44	-10.83**		
Step 3						
Social support	-.83	.24	-.14	-3.45*		
Positive affect	-2.66	.25	-.44	-10.85**	.23	.00
Social support X Positive affect	-.22	.24	-.04	-.91		

*$p < .01$. ** $p < .001$.

Table 3
The Results of Hierarchical Regression Analysis for the Moderating Effect of Negative Affect on the Relationship between Social Support and Perceived Stress

Variables	B	SEB	β	t	R²	R² change
Predicted variable: Perceived stress						
Step 1						
Social support	-1.21	.27	-.20	-4.52***	.04	.04***
Step 2						
Social support	-.45	.21	-.08	-2.14*		
Negative affect	3.82	.21	.64	18.36***	.44	.40***
Step 3						
Social support	-.52	.21	-.09	-2.47**		
Negative affect	3.83	.21	.64	18.46***	.45	.01*
Social support X Negative affect	.43	.20	.07	2.11*		

*p < .05. **p < .01. ***p < .001.

As shown in Table 3, social support ($β$ = -.20, p < .001), negative affect ($β$ = .64, p < .001), and the interaction of social support and negative affect ($β$ = .07, p < .05) significantly predicted perceived stress. These findings showed that negative affect had a moderating effect on the relationship between social support and perceived stress.

The graphical representation of the significant interactions was derived by using the values of the predictor (social support) and moderator (negative affect) variables that were chosen one standard deviation above (high) and below (low) the mean (Cohen et al., 2003). As seen in Figure 1, having less or more social support did not lead to a change in perceived stress in students with high negative affect. On the other hand, as social support increased perceived stress partially decreased in students with low negative affect. Therefore, negative affect acts as a buffer which decreases the positive influence of social support on stress (Fraizer et al., 2004).

Discussion

In the current study in which the moderating roles of positive and negative affect on the relationship between social support and perceived stress were investigated, it was observed that while negative affect was a moderator, positive affect did not have a similar function. Accordingly, when negative affect increases, the positive effect of social support on perceived stress decreases. It is an expected result to find the moderator role of negative affect as a mental health parameter related to both social support (Brannan et al., 2013; Green et al., 2012; Wright et al., 2014; Zhou et al., 2013) and stress (Al Nima et al., 2013; Hamama et al., 2013; Green et al., 2012; Jou & Fukada, 2002) between the two variables. Negative affect being related to neuroticism (Berry & Hansen, 1996; Watson, Clark, & Tellegen 1988) and the tendency of individuals with negative affect to be introverted may lead these individuals to be less involved in social interactions, and in turn, let them perceive less social support. In
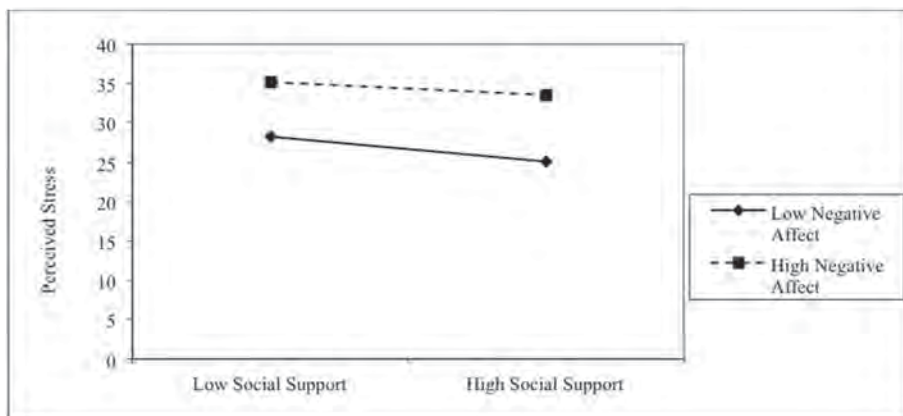

Figure 1: Interaction of negative affect and social support on perceived stress.

a study by Berry and Hansen (1996) it was observed that negative affect was related to the number of interpersonal relations in college students, but it was not related to the quality of interpersonal relations. Moreover, while self-disclosure increased in social interactions, an increase in negative affect was observed. According to Dunkley, Berg, and Zuroff's (2012) study, attachment fears such as fear of closeness, fear of dependency, and fear of loss in university students predict negative affect significantly. It could be said that students with high negative affect who experience fear of attachment more, who cannot interact with their social environment sufficiently, and who have the tendency to not disclose themselves may perceive social support less due to a more limited interaction compared to other individuals. This condition may reflect negatively on the stress decreasing function of perceived social support.

In the case of the moderating model as being effective, it is indicated that the intervening variable plays a buffer role (Fraizer et al., 2004). Accordingly, it could be said that negative affect has a buffer role against the stress decreasing function of social support. Consequently, it could be expected that with a decrease in negative affect and weakening of the preventative role of negative affect, the positive effect of social support on perceived stress would increase. Negative affect related to variables that reflect adjustment difficulties such as neuroticism, anxiety, depression, and loneliness (Al Nima et al., 2013; Finch et al., 2012; Longua et al., 2009) is a general predictor of a behavioral disorder (Watson, Clark, & Carey, 1988). Therefore, individuals with high negative affect might need professional psychological help. Professional aid that helps to cope with negative affect may facilitate the perception of social support more and lessen stress.

In the current study it was hypothesized that positive affect would have a moderating role between social support and perceived stress, and that in individuals with high positive affect the negative relation between social support and perceived stress would occur more. However, the findings did not support this hypothesis. This result can be explained by the possible effects of greater or lesser positive affect being experienced. While high positive affect is the condition of having high energy, full concentration, and enjoyment of doing something, low positive affect is depicted as sadness and lethargy (Watson, Clark, & Tellegen, 1988). Because positive affect is related to the quality of the interaction rather than the quantity of interpersonal interactions (Berry

& Hansen, 1996) it could be considered that low-level positive-affect experiences such as sadness and lethargy may not reflect upon the quality of social relations. In students who experience satisfying social interactions, having a low or high positive affect may not lead them to perceive a difference in their social support perception. Accordingly, it could be said that experiencing greater or lesser positive affect does not create an advantage or disadvantage on the positive effect of social support on stress.

It is claimed that positive affect is a "reason" rather than a "result" in previous research facilitating psychological adjustment (Lyubomirsky et al., 2005). This research gives the impression that as positive affect does not have a moderating function between social support and stress, its active role as the intervening variable may be limited. Hence, the intervening variable role of positive affect within other adjustment variable relations may lead to evaluate its direct and indirect roles more extensively. In a study on college students (Kong, Zhao, & You, 2013), it was found that the relation between social support and positive affect was higher in individuals with high self-esteem compared to individuals with low self-esteem. It could be inferred that having high or low self-esteem may reflect upon the intervening variable role of positive affect on the relation between social support and stress. In future studies, it could be possible to better understand these possible effects with similar variables to investigate self-esteem as the control variable or as a secondary interaction variable along with positive affect.

As a result, it can be understood from the findings of the current study that the relation between social support and perceived stress is more susceptible to negative affect, and with the increase in negative affect the protective function of social support against stress decreases. Although social support has a buffer role against stress (Bland et al., 2012; Cohen & Wills, 1985) the current study is significantly important in revealing the limitation of the protective function of social support. Moreover, in the case of intense experiences of negative emotions by college students such as anxiety, depression, and loneliness, the insufficiency of social support for coping with stress indicates that the students need the help of a specialist. When social support is insufficient, preventative and intervening studies, counseling and guidance centers, as well as psychiatric units may provide the necessary professional support.

It is also necessary to depict some of the limitations of the current study. The social support and stress variables investigated in the current study were measured with self-report scales depending on the perceptions of students. Thus, it is limited to their self-perception of both social support and stress levels. The sample group consisted of faculty of education students from a public university in Turkey, thus limiting the ability to generalize the findings. Hence, similar studies in different countries and universities may help to generalize the findings.

Moreover, although the occurring effect of the moderating model is depicted as a buffer function (Fraizer et al., 2004), it might be misleading to make cause and effect inferences from this relational and cross-sectional study. Lastly, considering that the interactions of social support with positive and negative affect may differ according to the stress conditions in dimensions such as familial, academic, economic, and so forth, addressing the perceived stress of students in the current study in general may also be seen as a limitation.

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