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Perceived Stress and Life Satisfaction in College Students: Belonging and Extracurricular Participation as Moderators

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Abstract

This study has two aims. The first was to examine the changes in perceived stress and life satisfaction in terms of college belonging, major belonging, and the participation in extracurricular activities. The second aim was to test the moderating effect of college and major belonging, and extracurricular activities in the relationship between perceived stress and life satisfaction. The participants were 477 undergraduate students at a public university in Turkey. To collect the data, The Perceived Stress Scale, The Satisfaction with Life Scale and a personal information form were used. The results of MANCOVA indicated that the students having a high college and major belonging had low perceived stress and high life satisfaction. In addition, perceived stress and life satisfaction did not change significantly based on whether the students participated in extracurricular activities. However, among the students participating in extracurricular activities, the students who had high college belonging have low perceived stress and more life satisfaction. The results of the hierarchical regression analysis indicated that only college belonging played a moderator role in the relationship between perceived stress and life satisfaction. In conclusion, this study reveals that especially the college belonging is important in terms of stress and life satisfaction in college students.

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1. Introduction

In college years, young adults are responsible for their health, school life and financial situation. Therefore, college years are accepted as one of the most stressful periods since youths need to manage their own lives (Cress & Lamppan, 2007). In a study conducted by Pierceall and Keim (2007), 75% of the college students perceive stress at

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a moderate level, and 12% had a high level of stress. Ross, Niebling and Heckert (1999) reports the sources of stress as follows: 38% from intrapersonal stressors (e.g., new responsibilities), 28% from environmental stressors (e.g., change in living environment), 19% from interpersonal stressors (e.g., fight with boyfriends / girlfriends), and 15% from academic stressors (e.g., low grade). As shown by some studies (Chao, 2012; Darling, McWey, Howard & Olmstead, 2007; Otrar, Eksi, Dilmac & Sirin, A 2002; Ross et al., 1999), the following issues can be a source of stress for college students: academic grade anxiety, ambiguity about their future plans, financial problems, family matters, relations with opposite sex, and interpersonal relationships. Specifically, university students can experience stress in roommate conflict, changes in sleeping and eating habits, public speech, and increased course workload (Darling et al., 2007; Ross et al., 1999). The previous researches presented that the stress in college students is related to many negative (e.g., depression, anxiety, suicidal ideation) (Eisenbarth, 2012; Otrar et al., 2002; Pengilly & Dowd, 2000; Wilbum & Smith, 2005) and positive indicators (e.g., self-esteem, optimism, hardiness) (Eisenbarth, 2012; Extremera, Durán & Rey, 2009; Pengilly & Dowd, 2000; Wilbum & Smith, 2005) of mental health. Therefore, college students frequently experience stress due to the challenging experiences of young adults, and this situation becomes a factor which hampers with their psychological adjustment.

Life satisfaction is one of the positive adjustment indicators which are affected by the stressful lives of college students. Life satisfaction is among three components of subjective well-being, which is the terminological equivalent of happiness. Positive and negative affection consist of pleasant and unpleasant emotions; however, life satisfaction is about cognitive evaluation of individual's lives (Diener & Suh, 1997). As a more stable one than affective components, life satisfaction enables to carry out long-term evaluations regardless of a certain time length (Eid & Diener, 2004). Furthermore, perceived life satisfaction is highly related with a compound index consisting of the indicators of objective quality of lives such as health, financial status, freedom, entertainment and so on (Diener & Suh, 1997). Consequently, perceived life satisfaction is based on perpetual evaluations about individuals' own lives, and it provides important clues on the quality of individuals' lives.

According to a study by Diener (2000) on college students from 17 different countries, happiness and life satisfaction are more important than money for most college students. In another study, it was observed that financial stress did not significantly predict life satisfaction (Chow, 2005). Some studies indicate that life satisfaction increases as loneliness (Cecen, 2007; Tuzgol-Dost, 2007), depression, despair, anxiety (Gundogar, Gul, Uskun, Demirci & Kececi, 2007), anger and frequency of illness (Pilcher, 1998) decrease. Similarly, responsibilities related to the roles of life and romantic relationships, school and family satisfaction increase with the increase in life satisfaction (Bailey & Miller, 1998). Furthermore, life satisfaction is related with optimism (Extremera et al., 2009), academic performance, self-image (Chow, 2005), physical health, social relationships (Chow, 2005; Darling et al., 2007). In sum, life satisfaction is a concept attributed as valuable by college students, and it is highly correlated with both psychological/affective variables and some daily life events. Therefore, it is one of the most important indicators of psychological health.

Belonging is another concept which is related to psychosocial and academic adjustment of college students (Ostrove & Long, 2007). It has also been stated that many positive and negative emotions are related to the sense of belonging. To be accepted, included, or welcomed leads to positive senses such as happiness, pleasure and satisfaction; however, to be refused, excluded, or ignored might result in negative feelings such as anxiety, depression and loneliness (Baumeister & Leary, 1995). According to McMillan and Chavis (1986), sense of belonging is under the membership subcategory of four components of sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection). In this way, sense of belonging comprises feelings, beliefs and expectations related to being accepted to a group, having a place in the group and being willing to play an active role in this group when needed.

It is suggested that school belonging may be a key concept of positive experiences for college students and school belonging is defined as the connectedness to school or perceived school membership. In addition to the connectedness to school, school belonging includes belonging to other individuals in the same school and perception of fitting into the school (Pittman & Richmond, 2007). The previous research shows that social and academic adjustments (Ostrove & Long, 2007), scholastic competence, friendship quality, social acceptance and self-worth increase, and problem behaviors diminish with the increasing college belonging (school belonging) (Pittman & Richmond, 2007). The college students interacting with their friends and faculty members have a high sense of belonging (Hausmann, Schofield & Woods, 2007). Gundogar et al. (2007) show that life satisfaction is correlated

with some perceptions about colleges such as studying at the desired major, education satisfaction, environment and social facilities, and positive relationships with faculty members. Therefore, school belonging, is a variable related to personal, social and academic adjustment that can play a positive role on increasing the life satisfaction of college students.

On the other hand, the college students having higher sense of belonging in conflict regions have less post-traumatic stress disorder (PTSD) (Nuttman-Shwartz & Dekel, 2009). In a study of Hagerty and Williams (1999), sense of belonging in college students is negatively correlated with depression and interpersonal conflicts, and sense of belonging predicts depression stronger than perceived social support. Considering these relationships with some affective and interactional problems such as PTSD, depression, interpersonal conflicts, school belonging might have a function reducing perceived stress.

In the current study, major belonging was investigated along college belonging as school belonging. Some studies indicate that perceived social support (Okdem & Yardımcı, 2010), anger (Yondem & Bıçak, 2008), perceptions about teaching practices, classroom behaviors and attitudes of the faculty members (Aksu, Civitci & Duy, 2008) change regarding the major/program of students. The major/program experiences that might have psychological and academic effects on undergraduates, may reflect in the attitudes (e.g., belonging) of students towards their majors. For the students who spend most of their times on the activities of the program (e.g., responsibilities about courses, interaction with faculty members), a sense of major belonging can be expected to form. Some studies also indicate that stress of college students increases with increasing class workload (Ross et al., 1999) and conflicts with faculty members (Dusselier, Dunn, Wang, Shelley & Whalen, 2005). Considering these studies, it was predicted that there could be a relationship between major belonging and stress. Furthermore, major belonging is predicted to be related to life satisfaction in the light of the studies that indicate students who have good relations with faculty members, who study at their desired major, enjoy their majors, are satisfied with the education quality (Gundogar et al., 2007) and are academically successful (Chow, 2005) have high life satisfaction.

Extracurricular activities, as a natural and essential part of college life, are the experience areas many students preferred. Extracurricular activities are defined as academic and nonacademic activities performed outside of classroom excluded from curriculum. These activities do not have an effect on grade or academic credits, and they are on voluntary basis. The following activities can be classified as extracurricular activities: taking roles in college clubs, communities or associations, and attending art, sport and music activities (Bartkus, Nemelka, Nemelka, & Gardner, 2012).

As the indicator of social integration of college students (Chapman & Pascarella, 1983), extracurricular activities are one of the most important factors in their satisfaction about their university (Kaur & Bhalla, 2010). The previous research indicates that social and academic adjustment (Bettencourt, Charlton, Eubanks, Kernahan, & Fuller, 1999), establishing purpose, educational involvement, career planning, life management (Foubert & Grainger, 2006), optimism, social adaption and cooperativeness, self-concept, career development skills, extraversion, emotional stability (Shiah, Huang, Chang, Chang, & Yeh, 2013), self-esteem (Bettencourt et al., 1999; Zhang, 2001), creativity-generating thinking styles (Zhang, 2001), positive affects, interpersonal skills (Rubin, Bommer & Baldwin, 2002), and academic achievement (Bettencourt et al., 1999; Rubin et al., 2002) increase with the increasing participation in extracurricular activities. In another study (Bland, Melton, Welle, & Bigham, 2012), the participation in extracurricular activities was among the methods for college students to cope with stress; however, it did not play a role in increasing stress tolerance. Accordingly, extracurricular activities seem to be advantageous in terms of both psychosocial adjustment, and academic and career development of college students. It is predicted in the current study that the students participating in extracurricular activities have less perceived stress and more life satisfaction.

According to the student involvement theory by Astin (1999) college students' effective learning and personal development increase when their experience and involvement increase in fields such as participation in extracurricular activities, absorption in academic work, interaction with faculty and other personnel. This theory that sees students' time and energy as institutional resource claims that any educational politics or application is directly related to the increase in student participation. Thus, it is important to know how situations related to students' participation in universities reflects upon students' personal and social development in order to increase the quality of education and life in universities. It is expected that the current study will provide additional information on what psychological effects student participation has on student participation in college regarding that the present study is

investigating the relationship between the variables related to student participation that are college belonging, major belonging and participation in extracurricular activities with perceived stress and life satisfaction.

One of the purposes of the current study is to test the changes in perceived stress and life satisfaction in terms of college belonging, major belonging, and the participation in extracurricular activities (separately and together). Under the light of the previous studies that showed the relationships of the college students' psycho-social and academic adjustment in terms of college belonging, major belonging, and the participation in extracurricular activities (e.g., Bettencourt et al., 1999; Ostrove & Long, 2007; Pittman & Richmond, 2007; Rubin et al., 2002) it is hypothesized that perceived stress will be less and life satisfaction will be high in students who have high college belonging, major belonging and participate in extracurricular activities. Moreover, since students' increasing participation in extracurricular activities increase their sense of belonging (Harris & Wise, 2012; Knifsend & Graham, 2012), it is hypothesized that participation in extracurricular activities and college and major belonging (together) will affect perceived stress and life satisfaction positively.

Another purpose of this study was to examine the moderating effect of college and major belonging, and extracurricular activities in the relationship between perceived stress and life satisfaction. Many studies have shown that there is a negative relationship between stress and life satisfaction in college students (e.g., Barnes & Lightsey, 2005; Bailey & Miller, 1998; Darling et al., 2007; Extremera et al., 2009; Matheny et al., 2002; Schiffrin & Nelson, 2010; Simons, Aysan, Thompson, Hamarat, & Steele, 2002; Weinstein & Laverghetta, 2009). However, there are a limited number of studies investigating the moderation effects in the relationship between stress and life satisfaction. In some studies, the moderating effect of mood clarity (Extremera et al., 2009) and the sources of coping with stress (Matheny et al., 2002) were found in the relationship between life satisfaction and stress among college students. However, optimism did not have a moderator role in this relationship (Extremera et al., 2009). Therefore, it is needed to examine internal and external sources which can play a buffer role in decreasing the negative effects of stress on life satisfaction. It is known that issues such as exams, increasing work load (Bland et al., 2012; Ross et al., 1999), conflict/disagreement with faculty members (Dusselier et al., 2005) cause stress in students. Participating in extracurricular activities, receiving friends' and faculty members' supports are among the mechanisms students use in order to cope with stress (Bland et al., 2012). On the other hand, students who have more interaction with their friends and faculty members have higher belonging (Hausmann et al., 2007). According to this, participation in extracurricular activities and school belonging may have a facilitating role in easing the stress felt. Studies have shown that as social facilities of the university, the satisfaction of the education received, and positive relations with faculty increase (Gundogar et al., 2007) and perceived stress in students decreases (Matheny et al., 2002) life satisfaction increases. Thus, it can be expected that both participation in extracurricular activities and college and major belonging interaction with perceived stress will have a positive effect on life satisfaction of the students. In the current study it is hypothesized that college belonging, major belonging and participation in extracurricular activities will weaken the negative effects of stress on life satisfaction.

2. Method

2.1. Participants

The participants were 477 undergraduate students at a public university in Turkey. Students were recruited from Faculty of Education's ten programs. Among the participants, there were 326 (68%) female and 151 (32%) male, with a mean age of 21.18 years (SD = 1.91; range = 17-37). The majority of students were aged 18 to 23 years (94%). With respect to academic status, 109 (23%) of the participants were freshmen, 95 (20%) were sophomores, 164 (34%) were juniors, and 109 (23%) were seniors.

2.2. Measures

Perceived Stress Scale (PSS-10): The original version of PSS is a 14-item measure that assesses the degree to which one perceives aspects of one's life as uncontrollable, unpredictable, and overloading (Cohen, Kamarck, & Mermelstein, 1983). In this study, the PSS-10, a shorter version of the original scale which was also adapted to Turkish was used. The scale consists of 10 items asking participants to rate the frequency of stressful events that

occurred in the past month. Items are answered on a 5-point Likert scale ranging from “never” to “very often”. Responses are summed to provide an overall score, with higher scores indicating greater perceived stress. The PSS-10 was shown from previous research to have reliability and validity (e.g., Roberti, Harrington, & Storch, 2006). The PSS-10 Turkish version has demonstrated adequate psychometric properties (Erci, 2006; Orucu & Demir, 2009). The internal consistency reliability of this scale in the present study was 0.86. Sample items: “In the last month, how often have you been upset because of something that happened unexpectedly?”; “In the last month, how often have you felt nervous and “stressed”?”

The Satisfaction with Life Scale (SWLS): It is the most widely used measure of life satisfaction to date. SWLS is a five-item, self-report measure of overall satisfaction with life. Questions are answered on a 7-point Likert scale (strongly disagree to strongly agree). According to the SWLS, higher scores indicate greater life satisfaction (Diener et al., 1985). The SWLS has been shown to have strong reliability, discriminant validity and convergent validity (Pavot & Diener, 1993). The SWLS Turkish version has adequate psychometric properties (Durak, Senol-Durak, & Gencoz, 2010). The internal reliability of the scale for this study was 0.79. Sample items: “In most ways my life is close to my ideal”, “I am satisfied with life”.

Extracurricular Participation: Participation in organized extracurricular activities was assessed with one closed-ended item: “Have you taken an active role in social, artistic, or sports activities on campus or off-campus. The response options were “yes” or “no”.

Belonging: The qualities of participants’ college belonging and major belonging were assessed with two questions: “Do you feel like you belong at college?”, “Do you feel like you belong in your major?”. Participants responded on a four-point scale ranging from “almost always” to “almost never”. During analysis, responses were divided into two categories (low and high).

2.3 Procedure

Before the beginning of the study, all of the students were informed about the content of the survey and that participation was voluntary and confidential. Participants responded to a survey that included measures of perceived stress, life satisfaction, and personal information questionnaire. Participants completed the personal information questionnaire that included questions regarding their gender, age, major, year in school, extracurricular participation, college and major belonging. All students completed the survey in class. Survey completion took approximately twenty minutes.

3. Results

Descriptive statistics and bivariate correlation for the perceived stress and life satisfaction are presented in Table 1. As shown, there is a significant negative correlation between perceived stress and life satisfaction ($r = -0.43$, $p < 0.01$). In addition, skewness and kurtosis values were found to be within acceptable range for a normal distribution.

Table 1. Correlation and descriptive statistics of the perceived stress and life satisfaction

	LS	Mean	SD	Skewness	Kurtosis
Perceived stress	-.43*	30.50	6.10	.16	.13
Life satisfaction (LS)	-	24.31	5.65	-.72	.28

3.1. The effects of belonging and extracurricular participation on perceived stress and life satisfaction

The effects of college and major belonging, and participation in extracurricular activities on perceived stress and life satisfaction were assessed using a multivariate analysis of covariance (MANCOVA). The perceived stress and life satisfaction scores were included as the dependent variables, and college and major belonging, and participation

in extracurricular activities were included as the independent variables, while gender and grade were included as covariates.

A three-way MANCOVA of perceived stress and life satisfaction by three independent variables (college belonging, major belonging, and participation in extracurricular activities) revealed a significant multivariate effects for the college belonging [Wilks' $\lambda = 0.92$, $F(2, 468) = 19.95$, $p = .001$] and major belonging [Wilks' $\lambda = 0.94$, $F(2, 468) = 16.02$, $p = .001$]. No significant multivariate effect was observed for the participation in extracurricular activities [Wilks' $\lambda = 0.99$, $F(2, 468) = .73$, $p = .485$]. There was significant multivariate interaction between college belonging and participation in extracurricular activities [Wilks' $\lambda = 0.97$, $F(2, 468) = 7.88$, $p = .001$]. There was no significant multivariate interaction between major belonging and participation in extracurricular activities [Wilks' $\lambda = 0.99$, $F(2, 468) = 2.87$, $p = .057$].

Univariate findings indicated main effects of college belonging on perceived stress [$F(1, 469) = 21.72$, $p = .001$] and on life satisfaction [$F(1, 469) = 32.79$, $p = .001$]. Similarly, there was a main effect of major belonging on perceived stress [$F(1, 469) = 10.54$, $p = .001$] and on life satisfaction [$F(1, 469) = 30.59$, $p = .001$]. There was no main effect of participation in extracurricular activities on perceived stress [$F(1, 469) = .01$, $p = .953$] and on life satisfaction [$F(1, 469) = 1.19$, $p = .276$]. The means indicate that perceived stress in students who have high college belonging ($M = 29.87$) and major belonging ($M = 30.08$) is lower than in students who have a low college belonging ($M = 32.81$) and major belonging ($M = 32.60$). Life satisfaction in students who have high college belonging ($M = 24.79$) and major belonging ($M = 25.08$) is also higher than in students who have a low college belonging ($M = 21.72$) and major belonging ($M = 21.43$).

The univariate findings revealed an interaction effect between college belonging and participation in extracurricular activities on perceived stress [$F(1, 469) = 13.61$, $p = .001$] and on life satisfaction [$F(1, 469) = 7.70$, $p = .006$]. According to this, among the students participating in extracurricular activities, perceived stress scores were lower for students who had high college belonging ($M = 28.74$) than for students who had low college belonging ($M = 33.98$). In addition, among the students participating in extracurricular activities, life satisfaction scores were higher for students who had high college belonging ($M = 25.88$) than for students who had low college belonging ($M = 21.33$). The effect of the interaction between major belonging and participation in extracurricular activities on perceived stress [$F(1, 469) = .30$, $p = .586$] and on life satisfaction [$F(1, 469) = 3.82$, $p = .051$] was not found significant.

3.2. Moderating effects of belonging and extracurricular participation

In order to test the moderating effects of college belonging, major belonging and the participation in extracurricular activities on the relationship between perceived stress and life satisfaction, hierarchical multiple regression procedures were conducted, as recommended by Baron and Kenny (1986). All predictor variables (perceived stress, college and major belonging, and the participation in extracurricular activities) were centered at their means to reduce problems associated with multicollinearity between the interaction term and the main effects when testing for moderator effects (Frazier, Tix, & Barron, 2004).

For each potential moderator variable, regression models were performed separately. In the first step, gender was entered into the model as control variable. In the second step, the predictor variable (perceived stress) was entered into the regression equation. At step 3, potential moderator variables (college and major belonging, and the participation in extracurricular activities) were entered into the regression equations. In the last step, interaction variables (perceived stress x college belonging; perceived stress x major belonging; perceived stress x participation in extracurricular activities) were entered into the models. Significant change in R^2 for the interaction term indicates a significant moderator effect.

As shown in Table 2, when the gender was controlled, perceived stress predicted significantly life satisfaction. College belonging and major belonging contributed significant additional variance in regression models. When predicting life satisfaction, one significant interaction was found: Perceived stress x college belonging [$\beta = 0.13$, $p < 0.01$]. There were no significant interactions between perceived stress and major belonging [$\beta = 0.03$, $p > 0.05$], and perceived stress and participation in extracurricular activities [$\beta = 0.003$, $p > 0.05$].

Table 2. Hierarchical regression analysis for moderating effects of college belonging, major belonging and participation in extracurricular activities on the relationships between perceived stress and life satisfaction

Dependent variable: Life satisfaction	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	<i>R</i> ² Change
Step 1					
Gender	-1.100	.251	-.195**	.038	.038**
Step 2					
Perceived stress	-2.496	.224	-.444**	.235	.197**
Step 3					
College belonging	1.320	.221	.235**	.287	.053**
Step 4					
Perceived stress X College belonging	.731	.218	.128*	.304	.016*
Step 1					
Gender	-1.095	.251	-.195**	.038	.038**
Step 2					
Perceived stress	-2.494	.224	-.444**	.234	.196**
Step 3					
Major belonging	1.716	.217	.304**	.322	.088**
Step 4					
Perceived stress X Major belonging	.151	.217	.027	.323	.001
Step 1					
Gender	-1.091	.255	-.193**	.037	.037**
Step 2					
Perceived stress	-2.491	.226	-.444**	.234	.196**
Step 3					
Extracurricular activities (EA)	.225	.228	.040	.235	.002
Step 4					
Perceived stress X EA	.017	.222	.003	.235	.000

* $p < .01$; ** $p < .001$. Note: *B*, *SEB*, and β reflect values from the final regression equation.

These results indicated that college belonging had a moderating effect on the relationship between perceived stress and life satisfaction. To understand the form of this significant interaction, procedures outlined by Cohen et al. (2003) were followed. The interaction effect is plotted in Figure 1. As perceived stress increases, life satisfaction decreases and this decrease is greater for the students who have low college belonging. In other words, the effect of perceived stress on life satisfaction was greater for students with low (vs. high) college belonging. Consequently, college belonging moderated the effect of perceived stress on life satisfaction.

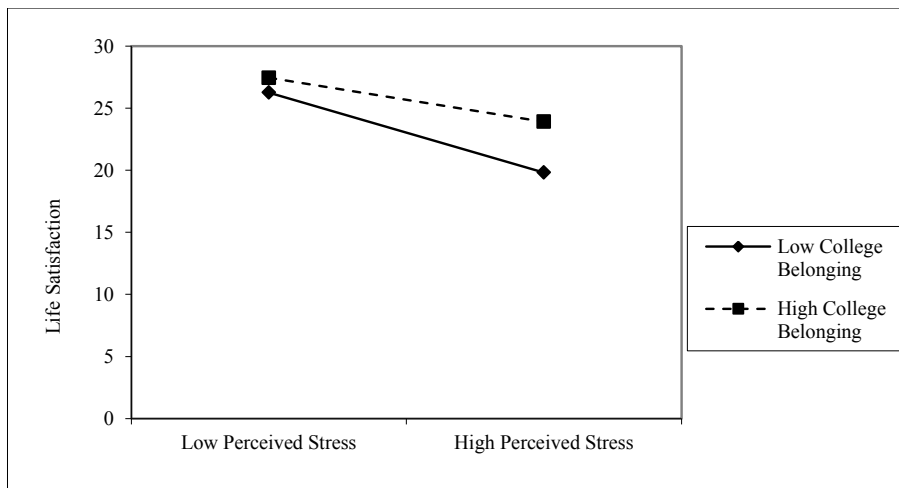


Fig. 1. College belonging as a moderator of the relationship between perceived stress and life satisfaction.

4. Discussion

According to the results of the current study, students with high college and major belonging have more life satisfaction and perceive less stress. Participation in extracurricular activities did not cause any change on perceived stress and life satisfaction. However, less perceived stress and more life satisfaction was observed in students with a high college belonging compared to students with a low college belonging among the students who participated in extracurricular activities. According to another important finding of the study college belonging has a moderator role in the relationship between perceived stress and life satisfaction.

This study indicated that the college students who have high college belonging and major belonging had less perceived stress and more life satisfaction. The results are consistent with the other studies presenting the relationship of sense of belonging with depression and interpersonal conflicts (Hagerty & Williams, 1999), interaction with friends and faculty members (Hausmann et al., 2007), social acceptance, academic self-competence, self-worth and problem behaviors (Pittman & Richmond, 2007), and social and academic adjustment (Ostrove & Long, 2007) in college students. The students who are able to get on well with their friends and faculty members, perceive themselves as academically competent, and show less problem behaviors have more sense of belonging. Considering this situation, it is an expected result that the college students who have high college and major belonging perceive less stress and have more life satisfaction.

In the light of the studies that indicate psychosocial and academic adjustment increases as participation in extracurricular activities increases (e.g., Bettencourt et al., 1999; Foubert & Grainger, 2006; Rubin et al., 2002; Shiah et al., 2013), it was predicted that the students who participated in extracurricular activities may have low perceived stress and high life satisfaction. However, in this study, participation in extracurricular activities did not lead to a change on perceived stress and life satisfaction. In a study conducted by Bland et al. (2012), college students participate in extracurricular activities as a method to cope with stress; however, this participation did not play a role to increase stress tolerance. Nguyen-Michel et al. (2006) also found that the participation in physical activities did not significantly predict stress for college students. In another study, Chapman and Pascarella (1983) observed that participation in extracurricular activities is related to some personal features such as gender, socioeconomic status, and needs. Accordingly, it can be suggested that participation in extracurricular activities alone does not have an effect that can change perceived stress and life satisfaction. To examine the perceived stress and life satisfaction in terms of personal characteristics of participants and quality of participation (e.g., leadership, membership, and frequency of participation) in college students, new studies are needed. Future research may facilitate more detailed evaluations on this matter.

As another finding of the study, among the students participating in extracurricular activities, the students who have a high college belonging have less perceived stress and more life satisfaction than the students who have a low college belonging. This finding is consistent with the study of Cicognami et al. (2008) which suggests that social participation positively affect social well-being through the mediation of sense of community in college students. Some studies (Bettencourt et al., 1999; Foubert & Grainger, 2006; Shiah et al., 2013) emphasize the relationship of participation in extracurricular activities with life skills such as setting aims, adjustment, collaboration, life management, and career planning in college students. As college belonging of students increases, scholastic competency, self-worth, social acceptance, friendship qualities (Pittman & Richmond, 2007), and interpersonal interaction (Hausmann et al., 2007) increase, and the college students having a high sense of belonging might benefit from extracurricular activities by supporting their personal, social and academic developments. For instance, participation in extracurricular activities might enable students to show their competences and to be accepted in their social environments. Thus, for the students who have high college belonging, extracurricular activities might have a facilitative role to have less perceived stress and more life satisfaction. In this study, whether students participated in extracurricular activities within the college environments is unknown. The college students having a high college belonging benefited more from extracurricular activities in terms of stress and life satisfaction; however, it is a question in mind whether these activities were organized by university or not. For the future studies, it might help the researchers to understand the relationship between college belonging and extracurricular activities if they know whether extracurricular activities are organized by university or its entities.

According to another finding of the current study, college belonging has a moderating effect on the relationship between perceived stress and life satisfaction. Major belonging and extracurricular activities do not have a

moderator role. Considering these findings, life satisfaction decreases as perceived stress increases, and this decrease is higher for the students who have low college belonging. Therefore, college belonging has a “buffer” role (Frazier et al., 2004) which decreases the negative effect of perceived stress on life satisfaction. In the relationship between perceived stress and life satisfaction, sources of coping with stress play a moderating role (Matheny et al., 2002), and this reminds that the students having a high college belonging can use the sources efficiently to cope with stress. As stated before, for college students, the sources of stress are academic achievement, uncertainty about the future, family matters, relationships with opposite sex, and difficulties in interpersonal interaction (Chao, 2012). High psychosocial and academic adjustment of the college students having a high college belonging (Hagerty & Williams, 1999; Hausmann et al., 2007; Ostrove & Long, 2007; Pittman & Richmond, 2007) may facilitate coping with stress. Therefore, it can be expected that stressful lives have less negative effect on life satisfaction.

In conclusion, college and major belonging is of importance for students in order to have less perceived stress and more life satisfaction. The moderating effect of college belonging particularly plays a buffer role against negative effects of stress on life satisfaction, and this effect is considerably remarkable. The current study emphasizes college belonging in terms of psychological adjustment and supports the findings of other studies which presented strong roles of sense of belonging in college students (Cicognani et al., 2008; Hagerty & Williams, 1999; Nuttman-Shwartz & Dekel, 2009). This study also contributes to the literature by studying major belonging in addition to college or school belonging. Major belonging has a more limited function in terms of perceived stress and life satisfaction. However, it is worth examining its relationship with other academic and psychosocial variables. Undoubtedly, there are many intrapersonal, interpersonal, environmental, and socio-demographic factors affecting college belonging. On the other hand, it is not clear what kinds of roles these factors play in the relationship of college belonging with perceived stress and life satisfaction. Future studies might make contributions in order to understand the effects of these components. The current study indicated that increasing college belonging provided advantages for students in terms of psychological health indicators such as stress and life satisfaction. Therefore, it is important for administration units at universities to show effort to increase college belonging, and focus on the factors affecting college belonging positively or negatively.

This study also has some limitations. The participation of students in extracurricular activities was categorized as “yes/no”. It might become a limitation to make detailed evaluations for the changes in perceived stress and life satisfaction based on the participation in extracurricular activities since the quality (e.g., leadership, membership) or frequency of participation (e.g., everyday, a few times in a week, a few times in a month) were not asked in this study. As a scale in Turkish that measures college belonging and major belonging does not exist, these variables were measured with single items in the current study. In regard to measuring the variables more thoroughly, using a single item may be seen as a limitation. In the current study, gender and grade variables were controlled; however, it should not be ignored that there are many demographic and psychosocial variables. The data were collected through self-reports, and measuring the variables were limited to the perceptions of participants. The study was carried out at the faculty of education in a public university. Therefore, the results cannot be generalized for all colleges and programs. Furthermore, the relationship of college belonging with stress and life satisfaction may change based on the college-campus environments in other colleges. Lastly, it can be misleading to establish cause-effect inferences as this study is a relational and cross-sectional study.

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