

Positive and Negative Affect in University Students: The Predictive Roles of Rumination, Mindfulness and Demographic Variables

Esra ASICI, Ph.D.

Kilis 7 Aralık University

Ümüt Arslan, Ph.D.

İzmir Democracy University

Sebahat Sevgi Uygur, Ph.D.

Dokuz Eylül University

Abstract

This study aims to investigate the predictive roles of rumination, mindfulness and demographic variables on positive and negative affect of university students. The study was designed as a predictive correlational research model. The data were collected from 466 students through the Positive and Negative Affect Schedule, the Ruminative Thought Style Questionnaire, the Philadelphia Mindfulness Scale, and a demographic questionnaire and analyzed with multiple linear regression analysis. According to the results, rumination, mindfulness (awareness and acceptance), age, gender, and romantic relationship status as a whole accounted for 15% of the variance in positive affect and explained 28% of the variance in negative affect. Positive affect was predicted by awareness and age positively and by acceptance and rumination negatively; negative affect was predicted by rumination and romantic relationship status positively and by acceptance negatively. Being female led to a decrease in positive affect. Implications to the education and counseling field were discussed.

Introduction

Happiness is an emotional state that emerges in the form of joy in all basic human emotions (Diener, 2000) and increases in situations where positive emotions are high and negative emotions are at a low level (Dua, 1994). Happiness might be a protector against various physical (Stephens, 2019) and mental health problems including depression (Rezaee et al., 2016) and anxiety (Baroun, 2006). Happy people live longer (Lawrence et al., 2015), have better relationships and marriages (Myers & Diener, 2018), are more successful in academic (Otaghi et al., 2020) and business life (Walsh et al., 2018), and more engaged in prosocial behaviors (Aknin et al., 2018). To sum up, maintaining and increasing happiness is valuable since it provides personal, vocational, educational and social benefits.

According to the 2020 World Happiness Report, Turkey ranked 93rd among 153 countries between the years of 2017 and 2019. In the same report, where the happiness levels between the years of 2008 and 2012 were compared, the decrease in the happiness level in Turkey is remarkable (Helliwell et al., 2020). In Turkey, especially university students are unhappy (Bianet, 2019). University life brings along many changes and innovations in the personal, academic, and social lives of individuals. The process of adaptation to these changes can sometimes be stressful (Yanardağ, 2017); university students may encounter difficulties that affect their happiness negatively (Erkan et al., 2009). Consequently, in Turkey, unhappiness among university students

is a serious problem. There is a need for supporting the happiness of the university students. In this context, determining factors affecting happiness in university students might be beneficial for developing prevention and intervention strategies. In this study, positive and negative affect were addressed as indicators of happiness in university students; and some psychological (rumination and mindfulness) and demographic (age, gender and romantic relationship status) variables affecting their positive and negative affect were analyzed. The results of this study can be useful to identify risk groups and to develop effective intervention programs aiming at increasing happiness of the youth. So, the researchers can have a better understanding of happiness in university students. The policymakers can develop preventive policies for risk groups; psychological counseling services in universities can organize effective individual and group counseling programs for unhappy university students.

Theoretical Framework

In literature, the concepts of affect, feeling, emotion and mood are frequently used interchangeably. Generally, affect is an umbrella term representing a set of concepts including emotions, mood and feelings (Zhang, 2013) and describes a person's predisposition to feel and act in a predictable way, to experience pleasant and unpleasant emotions and mood (Watson & Clark, 1984). According to the two-dimensional basic affective space model proposed by Watson and Tellegen (1985), there are two dominant dimensions of emotional experiences: positive affect and negative affect. These two dimensions are independent and uncorrelated. Positive affect refers to pervasive individual differences in positive emotionality and self-concept, and includes emotions such as joy, empathy, curiosity, compassion, determination, and willingness that create satisfaction in individuals and positively affects their mental state. Negative affect refers to pervasive individual differences in negative emotionality and self-concept, and contains undesirable emotions such as guilt, unhappiness, anxiety, fear, hate, embarrassment, depression, jealousy, and regret that create dissatisfaction in individuals and negatively affects their mental state (Cropanzano et al., 2003; Diener & Larsen, 1993; Diener et al., 1999; Watson & Clark, 1992; Watson et al., 1988; Watson & Tellegen, 1985).

Individuals with high levels of positive affect are the people who have a high motivation (Feldman-Barrett, 1997), are self-confident (Diener, 2000) and more optimistic about life (Fredrickson & Joiner, 2002), get more pleasure out of life (Weiss & Cropanzano, 1996), and can handle problems more effectively by evaluating their negative experiences in a healthier way (Fredrickson & Joiner, 2002). The high level of positive affect makes it easier to develop creative problem-solving skills (Isen et al., 1987), which help the individual to be more flexible (Fernandez-Abascal & Diaz, 2013), and increase resilience (Fredrickson, 2003). Individuals with high levels of negative affect, on the other hand, are known to be more aggressive and feel guilty and scared (Diener, 2000; Feldman-Barrett, 1997), and have low self-respect and more difficulty in adapting (Watson & Clark, 1984).

Positive and negative affect are among the important factors that have an influence on the well-being of individuals (Dodge et al., 2012). Positive and negative affect are associated with happiness (Diener & Emmons, 1985), and are frequently used to measure happiness (e.g. Demir & Özdemir, 2010). Happiness occurs when positive affect is more frequent and intense, and negative affect is less (Diener et al., 1991). It has been stated that particularly individuals beginning to experience positive affect at a higher level develop their coping resources and facilitate their coping with stress (Fredrickson, 1998), thus their subjective well-being increases, while their negative affect reduces (Fredrickson & Joiner, 2002).

This study employed the Positive and Negative Affect Schedule (PANAS) developed by Watson et al. (1988) as the data collection instrument, which followed the theoretical construct of the two-dimensional basic affective space model. The theoretical model was used to evaluate the happiness of university students, to conceptualize and interpret the findings of the study.

Literature Review

There are some studies on positive and negative affect conducted with Turkish university students. Only a few of these studies assessed positive and negative affect as outcome variables and examined determinants of positive and negative affect. Those studies revealed that friendship quality (Demir & Özdemir, 2010), social support (Yanardağ, 2017), authenticity (Kuyumcu & Kabasakaloğlu, 2018), physical activity level (Yerlisu Lapa & Haşıl Korkmaz, 2017), and difficulty identifying and describing feelings (Kuyumcu et al., 2019) were associated with positive and negative affect of university students. Besides, the impacts of some demographic variables including gender (Kuyumcu, 2011; Öztürk & Siviş Çetinkaya, 2015; Yüceant et al., 2019), socio-economic status, and grade level (Yüceant et al., 2019) on positive and negative affect were examined. Although previous studies contributed to understanding positive and negative affect in Turkish university students, there might be many other psychological and demographic factors that cause university students to experience positive or negative emotions. In this context, this study examined the effect of the variables of rumination, mindfulness, age, gender, and romantic relationship status on the positive and negative affect of university students.

Rumination

One of the factors that have an impact on the mental state of the individual is the ruminative thinking style. Rumination refers to repetitive and cognitive patterns that focus on depressive symptoms and problems, events, and mental states of the past (Nolen-Hoeksema, 1991). Although many researchers focused on the definition of rumination associated with depression, Brinker and Dozois (2009) pointed out that there might be many possible ruminative experience contents. They suggested a broader conceptualization of rumination, which involves positive, negative, and neutral thoughts as well as past and future-oriented thoughts.

Individuals with a ruminative thinking style tend to think repetitively and continuously about the causes and consequences of the problems and events they have experienced (Slavish et al., 2018). Therefore, these individuals are prone to experience more negative emotions, and have more negative thoughts about themselves and their lives (Lyubomirsky & Nolen-Hoeksema, 1995). These individuals' focusing on negative situations and their causes passively and repetitively leads them to experience more negative emotions and to feel unhappy (Nolen-Hoeksema et al., 2008).

Rumination, which plays a role in the activation and continuation of depressive cognitive strategies (Nolen-Hoeksema, 1991), causes the individuals to remember their negative memories more, hinders their problem-solving skills and reduces their perception of positive emotions such as happiness (Lyubomirsky et al., 1999). It has been emphasized that individuals with a high tendency of rumination, therefore, experience negative emotions (Vălenaş & Szentagotái, 2014) such as anger and unhappiness (Silk et al., 2003), guilt and embarrassment (Johnson & O'Brien, 2013) at a higher level.

Previous research rather focused on the relationship between rumination and negative affect. However, negative and positive emotions are not two extremes located on the same plane, but that they are two separate dimensions independent from each other (McCrae & Costa, 1991). Also,

rumination may include positive or neutral thoughts since it is independent of its content. There is a gap in literature regarding the association between general tendency of rumination and positive affect. In line with this gap, this research adopted Brinker and Dozois's (2009) conceptualization which handled rumination as a general tendency to assess both future and past-oriented ruminative thinking style without depressive mood and discussed the rumination variable as one of the predictors of both positive and negative affect. The findings to be obtained will contribute to the literature focusing on the relationship between general tendency of rumination and positive and negative affect.

Mindfulness

One of the factors analyzed in the study and had an impact on the mental state of the individual was mindfulness. Mindfulness is the individuals' directing their attention to the present moment with curiosity, compassion, acceptance, and transparency (Kashdan, 2009). Mindfulness includes the individuals' giving their attention purposefully and non-judgmentally to the internal and external events that are occurring at that moment and approaching their emotions, thoughts, behaviors, and senses at present with acceptance (Bishop et al., 2004). According to Cardaciotto et al. (2008), mindfulness has two dimensions as awareness and acceptance. *Awareness* is the behavioral element of mindfulness, and it refers to the individuals' focusing on present experiences rather than putting emphasis on the events of the past and to happen in the future. *Acceptance*, on the other hand, means recognition, being open to experiences, showing compassion for others' experiences, managing present-moment awareness, and not being judgmental.

Individuals with high levels of mindfulness can respond flexibly to the changes and demands in their environment (Miller et al., 2000), experience less negative emotions such as guilt, embarrassment, and anxiety about the situations that were experienced in the past or to be experienced in the future by sticking to the present moment (Ciarrochi et al., 2011; Curtiss et al., 2017), can rearrange their negative thoughts by noticing them more easily, and can overcome stress more easily and successfully by using their healthier and adaptive coping skills (Uygur, 2017). Mindfulness, which provides individuals with the necessary cognitive strategies to struggle against stressful and negative emotional states (Lynn et al., 2006), makes it easier to arrange all emotional states, particularly negative emotions (Cenkseven-Önder & Utkan, 2018). As a result, as the level of mindfulness increases, the individuals notice and accept their negative emotions more (Cheung & Ng, 2019) and experience positive emotions at a higher rate (Davidson et al., 2003).

Although it is well-documented that mindfulness promotes positive affect and decreases negative affect, the multi-dimensional construct of mindfulness was not assessed in the previous researches. This study adopted the two dimensional mindfulness model. The theoretical model provided a better understanding of the impact of mindfulness, as a two dimensional construct, on university students' positive and negative affect.

Age, Gender and Romantic Relationship Status

Well-being of the individual is also affected by demographic variables (Diener et al., 1999). One of these demographic variables might be age. Investigation of age group differences is of great importance in terms of understanding the changes that the structure of emotions displays throughout one's life (Ready et al., 2011). Age differences in positive and negative affect can be expected since there are differences between young and old people in terms of their ability to regulate emotional responses (Ortega, 2009; Yeung et al., 2011). However, the previous studies do not contain consistent findings on age differences in positive and negative affect. For example,

Barrick et al. (1989) found that there were no significant age differences in positive emotions, while young people experienced more intense negative emotions. On the contrary, Yeung et al. (2011) found that there were no age differences in negative emotions, while older adults experienced more positive emotions. In another study, Schneider (2018) found that age is not related to the positive and negative affect experienced by individuals. According to Pinquart (2001), as a result of the diseases that occur with aging and the losses experienced negative emotions increase, while positive emotions decrease. Nevertheless, there is evidence in the literature regarding the decrease in negative affect along with aging (Charles et al., 2010) and the higher consistency in the positive affect of the elderly people (Ready et al., 2011). There are also findings showing that negative emotions felt by individuals do not increase with aging (Diener et al., 1999).

Another demographic variable which has an impact on positive and negative affect might be gender. Even though there are many studies in the literature conducted on whether positive and negative affect vary according to gender, these studies do not present a clear picture of the role of gender. Previous studies indicated that males experienced positive emotions more (Topal, 2011), while females experienced negative emotions more (Thomsen et al., 2003). As females are exposed to more obstruction, and the burden and expectations arising from social gender roles determined for females by the society are higher compared to those for males, it is argued that females experience positive emotions less (Kuyumcu, 2011). However, since social gender equality has been frequently brought to the agenda in recent years and the perception of social gender has positively changed (Lou O'Neil & Çarkoğlu, 2020); the effect of gender on positive and negative affect can also change. Indeed, in a recent study, it has been determined that there is no difference between females and males in terms of positive and negative affect (Yüceant et al., 2019).

Another demographic variable that can influence positive and negative affect in university students might be the romantic relationship status. In the university years or young adulthood period, developing romantic relationships becomes a central issue. One of the basic developmental tasks that should be performed in the young adulthood period is establishing intimate relationships. Romantic relationships, as a type of intimate relationship, can positively affect the well-being of the youth by ensuring that they meet their needs of affection, intimacy, and social support. Safe and healthy relationships established with a romantic partner and the need for social support and intimacy being met through the romantic partner (Diener et al., 1999; Du & Wei, 2015) can enable young individuals to experience positive emotions more. Previous studies revealed that university students who are in a romantic relationship experienced positive emotions more (Berry & Willinham, 1997; Diener & Fujita, 1995). Nonetheless, in a recent study Demirtas and Tezer (2012) found that relationship status does not have any impact on positive and negative affect of university students.

There might be many other demographic variables that have an impact on the positive and negative affect of university students, however, this study focused only on age, gender and the romantic relationship status. One of the reasons for choosing these three demographic variables was that the previous findings were inconsistent. Moreover, the previous studies conducted with Turkish university students did not focus enough on the effect of age, gender and the romantic relationship status on positive and negative affect. Nowadays, the adolescence period covers the ages of 20s (Sawyer et al., 2018). Hence, the emotional turmoil of the adolescence can also be experienced during university years. Also, university students may use some coping strategies more depending on their age (Monteiro et al., 2014) and these strategies used to coping with

emotional difficulties may influence their well-being. Thus, investigation of age effect on positive and negative affect in a university student population is valuable. The influence of gender differences on experiencing emotions may vary depending on cultural factors, since the gender stereotypes determined by cultures have a strong impact on emotions (Plant et al., 2000). In this sense, it would be important to investigate the effect of gender on emotions in different cultural regions. Having a better understanding of the effect of romantic relationship status on emotions would be valuable since romantic relationships becomes a central issue in young adulthood period. Hence, it might be possible to support university students' emotional development. Due to the scarcity of the previous studies and inconsistency of the current findings in the literature regarding the effect of the age, gender and romantic relationship status on positive and negative affect of Turkish university students, there is a need for more research. This study will contribute to the field by filling the gap to understand university students in this context.

The Purpose of the Study and Research Questions

In the study, it was aimed to investigate whether positive and negative affect of university students are predicted or not by the variables of rumination, mindfulness, age, gender (being female), and romantic relationship status. To this end, answers to the following problem statements were sought in the study:

1. Do rumination, mindfulness, age, gender, and romantic relationship status predict the positive affect levels of university students statistically significantly?
2. Do rumination, mindfulness, age, gender, and romantic relationship status predict the negative affect levels of university students statistically significantly?

Method

The current study is a quantitative study, which utilizes measures to design a correlational research to examine the predictive roles of some psychological and demographic variables in positive and negative affect. Predictive correlational research is carried out to explain the changes occurring in the dependent variable based on one or more independent variables (Büyüköztürk et al., 2012). The dependent variables of this study are positive affect and negative affect. Rumination, mindfulness, age, gender and romantic relationship status are independent variables. In order to measure these variables, The Philadelphia Mindfulness Scale, The Ruminative Thought Style Questionnaire, and The Positive and Negative Affect Schedule were used. In addition, the information about the participants' age, gender, romantic relationship status, perceived economic status, and year of study were collected.

Participants

The data were collected in a state university in the Aegean Region of Turkey and chosen according to the convenience sampling method. The target population of students consisted of 466 undergraduates (68.5% female, 30.9% male, and 0.6% not specified). There is no specific participation rate because Google Forms does not provide information for individuals who did not complete the survey entirely. Participants were enrolled in the university as first-year (44.2%), second-year (31.8%), third year (8.4%), and fourth year (3.2%) students. The perceived economic status of the participants was divided as high (15.2%), medium (82.6%), and low (2.1%). In regards to relationship status, 59.4% of the participants declared that they did not have a romantic

relationship, and 40.6% of them declared that they had a romantic relationship. The ages of the students ranged between 18 and 50 years, and the mean age was 21.55 years ($SD = 4.71$).

Data Collection

The data were collected online after obtaining permission from the Ethics Committee Directorate for the study. The scale forms were transferred to the online environment via Google Forms, and the link for the survey was shared with the students. Besides, it was explained to the students that participation in the research was voluntary, and they could withdraw from filling out the survey at any time. The survey applications that were performed in the classroom environment took approximately 20 minutes. One of the researchers of this study administered surveys to approximately 750 students in 15 different classrooms. Even though there were around 750 undergraduates in the classrooms during the survey administration, only 466 undergraduates completed the survey. The data were collected in the fall semester of 2019–2020 academic year.

Data Collection Tools

The Positive and Negative Affect Schedule (PANAS)

The English version of the scale was developed by Watson et al. (1988), and it was adapted into Turkish by Gençöz (2000). The scale consists of two main dimensions as positive affect and negative affect. Positive affect includes emotions such as interest, excitement, strongness, enthusiasm, proud, vigilance, inspiration, determination, attentiveness, and activeness. Negative affect includes emotions such as distress, unhappiness, guilt, fright, hostile, nervousness, embarrassment, restlessness, and scare. PANAS is a significant and internationally recognized scale to measure the emotional state of individuals and is based on the theoretical construct of the two-dimensional basic affective space model adopted in this study. The scale is composed of 20 items, with 10 items for each sub-dimension. The increase in the scores obtained from each sub-dimension of the 5-point Likert type scale indicates that the individual is experiencing the relevant emotional state more. In the current study, the Cronbach's alpha internal consistency coefficient of the scale was calculated as .83 for positive emotions sub-dimension and .87 for negative emotions sub-dimension.

The Ruminative Thought Style Questionnaire (RTSQ)

The original scale form was developed by Brinker and Dozois (2009), and it was adapted into Turkish by Karatepe (2010). The scale aims to evaluate the tendency to rumination. The scale consists of 20 items and is based on a 7-point Likert type response system (1= *Not at all descriptive of me*, and 7= *Describes me very well*). The high scores obtained from the scale mean that the individual's tendency to ruminate is high. RTSQ is consistent with the theoretical framework of this study since it measures dispositional rumination in a general context and without depressed mood. In the present study, the Cronbach's alpha internal consistency coefficient of the scale was found to be .93.

The Philadelphia Mindfulness Scale (PMS)

The scale was originally developed by Cardaciotto et al. (2008) and adapted into Turkish by Çelik and Onat Kocabıyık (2018). The scale aims to measure mindfulness in two dimensions as awareness and acceptance. *Awareness* is the behavioral element of mindfulness, and it means

focusing on present experiences rather than emphasizing the events of the past and that might occur in the future. *Acceptance*, on the other hand, refers to recognition, being open to experiences, showing compassion for others' experiences, managing present-moment awareness, and not being judgmental. The scale is composed of 20 items, with 10 items for each sub-dimension. The scale is a 5-point Likert type scale (1= *Not at all descriptive of me*, and 5= *Describes me very well*). PMS is consistent with the theoretical framework of this study, as it based on two dimensional mindfulness model adopted in this study. In the current study, the Cronbach's alpha internal consistency coefficient of the scale was calculated as .78 for both awareness and acceptance sub-dimensions.

Data Analysis

The data were analyzed with the SPSS 22.0 statistical package program. In the analysis of the data, Pearson Moments Multiplication Correlation and multiple linear regression analysis techniques were used. Prior to the analyses, it was determined whether the data set met the required assumptions. Within this context, the data were examined in terms of missing and extreme values, and it was determined that there was no missing or extreme value. For the normality assumption, the skewness and kurtosis coefficients of the scores obtained from the scales were examined, and it was determined that all values were within the limits of +1 and -1. To determine whether there was autocorrelation between error terms, the Durbin-Watson values were calculated, and these values were found to be between 1.84 and 1.92. Whether there were multiple connections between independent variables or not was examined through Variance Inflation Factor (VIF), tolerance, and correlation values. It was determined that VIF values varied between 1.01 and 1.24, tolerance values ranged from .82 to .99, and correlation values among variables varied between -.39 and .51. These results show that the data set met the required assumptions necessary to run a regression analysis. For categorical variables to be included in the regression model, gender and romantic relationship status variables were identified as dummy variables, and the effects of being female and having a romantic relationship were investigated.

Findings

Table 1 presents the descriptive statistics of the scores obtained from the scales by the students.

Table 1

Descriptive Statistics for the Scores Obtained From Instrument Scales (N=466)

	Min.-Max.	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Positive affect	10.00-50.00	30.58	6.91	-.15	.11
Negative affect	10.00-50.00	24.07	8.29	.54	-.17
Rumination	38.00-140.00	101.45	21.58	-.34	-.42
Mindfulness					
Awareness	25.00-50.00	38.42	5.31	.01	-.33
Acceptance	10.00-45.00	25.62	6.48	-.00	.07

As can be seen in Table 1, the mean score obtained by the students from PANAS positive affect sub-dimension was found as ($M = 30.58$), and the mean score from the negative affect sub-dimension was determined to be ($M = 24.07$). The mean score obtained from the Ruminative

Thought Style Questionnaire was calculated as ($M = 101.45$). Finally, the mean score obtained from the awareness sub-dimension of the Philadelphia Mindfulness Scale was found as ($M = 38.42$), while the mean score for the acceptance sub-dimension was determined as ($M = 25.62$). When the scores obtained from the scales are compared with the minimum and maximum scores, it can be said that the positive affect, awareness and acceptance mean scores of participants were all above the average. The negative affect mean score was close to average. Finally, rumination mean score was quite high.

The results of the Pearson Moments Multiplication Correlation coefficient, which shows the relationships between the variables, are presented in Table 2.

Table 2

Relationships Between Positive and Negative Affect, Rumination, Awareness and Acceptance

	1	2	3	4	5
1. Positive affect	-				
2. Negative affect	-.14*	-			
3. Rumination	-.19*	.51*	-		
4. Awareness	.26*	.03	.06	-	
5. Acceptance	-.04	-.28*	-.39*	-.17*	-

* $p < .01$

As seen in Table 2, there was a negative and statistically significant relationship between students' scores for positive affect and negative affect ($r = -.14, p < .01$) and rumination scores ($r = -.19, p < .01$). A positive and statistically significant relationship was found between positive affect and awareness ($r = .26, p < .01$). However, the relationship between positive affect and acceptance ($r = -.04, p > .05$) was not statistically significant. While the relationship between rumination and awareness was not significant ($r = .03, p > .05$), there was a negative and statistically significant relationship between rumination and acceptance ($r = -.28, p < .01$). Finally, a negative and statistically significant relationship between awareness and acceptance ($r = -.17, p < .01$) was determined.

The results of multiple linear regression analysis regarding the prediction of positive affect through rumination, awareness, acceptance, age, gender, and romantic relationship status are presented in Table 3.

Table 3

Results of Regression Analysis Regarding the Prediction of Positive Affect

	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Constant	21.13	3.61		5.86	.000**
Rumination	-.06	.02	-.19	-3.99	.000**
Awareness	.34	.06	.26	5.89	.000**
Acceptance	-.10	.05	-.09	-1.98	.049*
Age	.29	.06	.20	4.48	.000**
Gender	-1.42	.66	-.10	-2.15	.032*
Romantic Relationship Status	-.05	.61	-.00	-.08	.936

$R = .40$ $R^2 = .16$ Adjusted $R = .15$ $F(6-459) = 14.50$ $p = .000**$

* $p < .05$, ** $p < .001$

As can be seen in Table 3, the multiple linear regression analysis provided a statistically significant model ($F(6-459) = 14.50, p < .001$). Accordingly, rumination, awareness, acceptance, age, gender, and romantic relationship status as a whole accounted for 15% of the variance in positive affect ($R = .40, R^2 = .16, \text{Adjusted } R = .15$). While rumination ($\beta = -.19, p < .05$), awareness ($\beta = .26, p < .05$), acceptance ($\beta = -.09, p < .05$), age ($\beta = .20, p < .05$) and gender ($\beta = .10, p < .05$) variables were significant predictors of positive affect, romantic relationship status (being in a romantic relationship, $\beta = -.00, p > .05$) variable did not significantly predict positive affect. Awareness and age variables caused an increase in positive affect, while rumination, acceptance, and being female led to a decrease in positive affect. According to regression coefficients, being female caused a decrease of -1.42 in positive affect. One unit increase in acceptance scores led to a decrease of -.10 in positive affect, while one unit increase in rumination scores caused a decrease of -.06 in positive affect. On the other hand, one unit increase in awareness scores led to an increase of .34 in positive affect and one unit increase in age caused an increase of .29 in positive affect.

The results of multiple linear regression analysis regarding the prediction of negative affect through rumination, awareness, acceptance, age, gender, and romantic relationship status are presented in Table 4.

Table 4

Results of Regression Analysis Regarding the Prediction of Negative Affect

	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Constant	11.87	3.95		3.00	.003*
Rumination	.19	.02	.49	11.17	.000**
Awareness	-.11	.06	-.07	-1.79	.074
Acceptance	-.14	.06	-.11	-2.56	.011*
Age	.06	.07	.03	.79	.431
Gender	-1.01	.72	-.06	-1.41	.161
Romantic Relationship Status	1.88	.67	.11	2.80	.005*
<i>R = .53 R² = .29 Adjusted R = .28 F(6-459) = 30.48 p = .000**</i>					

* $p < .05$, ** $p < .001$

As can be seen in Table 4, the multiple linear regression analysis provided a statistically significant model ($F(6-459) = 30.48, p < .01$). Accordingly, rumination, awareness, acceptance, age, gender, and romantic relationship status as a whole accounted for 28% of the variance in negative affect ($R = .53, R^2 = .29, \text{Adjusted } R = .28$). While rumination ($\beta = -.49, p < .05$), acceptance ($\beta = -.11, p < .05$) and romantic relationship status (being in a romantic relationship, $\beta = -.11, p < .05$) variables significantly predicted negative affect; awareness ($\beta = -.07, p > .05$), age ($\beta = .03, p > .05$) and gender ($\beta = .06, p > .05$) variables were not significant predictors of negative affect. Rumination and being in a romantic relationship caused negative affect to increase, whereas acceptance had a decreasing effect on negative affect. According to regression coefficients, being in a romantic relationship caused an increase of 1.88 in negative affect. One unit increase in rumination scores led to an increase of .19 in negative affect, while one unit increase in acceptance scores caused a decrease -.14 in negative affect.

Discussion

In this study, positive and negative affect in university students were addressed, and the roles of the variables of rumination, mindfulness, age, gender, and romantic relationship status in predicting the positive and negative affect of university students were investigated. According to the findings, the variables of rumination, mindfulness (awareness and acceptance), age, gender, and romantic relationship status as a whole accounted for 15% of the variance in positive affect and explained 28% of the variance in negative affect in university students.

The findings indicate that the increase in the tendency towards rumination is associated with a decrease in the positive affect and an increase in negative affect of university students. In other words, university students who have a high tendency to think repetitively, recurrently, uncontrollably, and intrusively on the events or problems in the past or future (Brinker & Dozois, 2009; Slavish et al., 2018) are more unlikely to experience enjoyable emotions such as joy, empathy, compassion, determination, and willingness, while they are more stuck in undesirable emotions such as guilt, unhappiness, anxiety, fear, embarrassment, depression, jealousy, and regret. As the tendency to ruminate causes the individual to use depressive cognitive strategies (Nolen-Hoeksema, 1991), university students with high levels of a tendency to ruminate remember their negative experiences more (Lyubomirsky et al., 1999); and therefore, they may experience negative emotions (Vălenaş & Szentagotái, 2014) such as anger, unhappiness (Silk et al., 2003), guilt and embarrassment (Johnson & O'Brien, 2013). The opinions of university students having a high tendency to ruminate about themselves and their lives being mostly negative (Lyubomirsky & Nolen-Hoeksema, 1995) can prevent them from experiencing positive emotions. Moreover, it can be thought that since the ruminative thought style prevents problem-solving skills (Lyubomirsky et al., 1999), university students with a high tendency to ruminate can be incompetent in creating solutions to the problem situations they faced with; and therefore they become estranged from positive emotions.

The findings showed that the awareness sub-dimension of mindfulness was related to the increase in positive affect, but it did not have a significant effect on negative affect. When considered as a whole, increased mindfulness is related to the individual's experiencing positive emotions more (Davidson et al., 2003), and negative emotions less (Ciarrochi et al., 2011; Curtiss et al., 2017). The present findings revealed that the increase in the positive affect of university students was related to the awareness sub-dimension of mindfulness, in other words/which means focusing more on present experiences rather than the events of the past and that might occur in the future (Cardaciotto et al., 2008). Focusing on the present moment can enable the individuals to notice what they have never noticed before, to be curious, to yearn for a meaningful life, and to feel determination and willingness, and therefore can increase positive affect. However, the individuals' noticing their emotions does not directly cause negative affect to increase or decrease. At this point, there may be other variables that play an intermediary role in the effect of awareness on negative affect.

The acceptance sub-dimension of mindfulness was related to the decrease in both positive affect and negative affect. The decrease in the negative affect of university students can be related to their being open to experiences, staying away from being judgmental and having acceptance (Cardaciotto et al., 2008). In other words, university students who can accept their experiences without being judgmental instead of ignoring, denying, or suppressing them can avoid negative emotions. Students who can accept their experiences instead of running away from them can show some effort to fight to get rid of the negative effects of these experiences. As university students who accept their experiences can re-arrange their negative emotions by noticing them more easily

and overcome stress more easily and successfully by using healthier and more adaptive coping skills (Uygur, 2017), they may experience negative affect less. The negative impact of acceptance on positive affect is interesting. This result can be associated with the measurement tool used in the study. When the items included in the acceptance sub-dimension of the Philadelphia Mindfulness Scale were examined, it was seen that all items emphasize negative emotions and thoughts, and there are no items involving positive emotions and thoughts.

Mindfulness provides individuals with the necessary cognitive strategies to struggle against stressful and negative emotional states (Lynn et al., 2006), makes it easier for them to arrange particularly their negative emotional state (Cenkseven-Önder & Utkan, 2018). According to the results of the study, it can be said that the activation of cognitive strategies that enable to struggle against negative emotional states, and the arrangement of negative emotional states are associated with the acceptance sub-dimension of mindfulness rather than the awareness sub-dimension. At this point, an investigation of the role of the awareness and acceptance sub-dimensions of mindfulness in the arrangement of emotions can yield beneficial results.

The findings indicated that the positive affect of university students increased with age, but age did not have an impact on their negative affect. The increase in the positive affect of university students with age can be related to the decrease in developmental challenges. University students who got out of the developmental challenges and emotional turmoil of adolescence can experience positive emotions more. The result regarding the age being ineffective on negative affect is supportive of previous findings (Diener et al., 1999; Schneider, 2018; Yeung et al., 2011). Age differences in positive and negative affect may stem from the ability of emotion regulation (Ortega, 2009; Yeung et al. 2011). Accordingly, the participating students might be similar in terms of their ability to regulate negative emotions. In next studies, investigation of age differences in negative affect based on the ability of emotion regulation can be beneficial. Pinquart (2001) argues that due to the increase in diseases and the losses that the individual experiences, negative emotions increase with aging. In the present study, the ineffectiveness of age on negative affect can be attributed to the fact that the participating students did not have any diseases and did not experience significant losses. However, this interpretation needs verification since no information on the health status of the participants and losses they experienced was collected in this study.

The findings of the study indicated that being female had an impact on the decrease in the positive affect of university students, but it was not effective on negative affect. Many studies have shown that males experience positive emotions more (Topal, 2011), while females experience negative emotions at a higher rate (Thomsen et al., 2003). The reason why females experience positive emotions less can be related to the fact that, as Kuyumcu (2011) expressed, females are subjected to more obstruction and the burden and expectations arising from social gender roles determined for females by the society are higher compared to those for males. Besides, it can be suggested that the way that the participating students were raised may not encourage them to experience positive emotions such as joy, happiness, and curiosity enthusiastically, as a result of which females have difficulty in noticing and expressing the positive emotions they experience. The finding regarding the ineffectiveness of being female on negative affect has also been determined in a recent study (Yüceant et al., 2019).

According to the findings, while romantic relationship status was associated with the increase in the negative affect of university students, it was not effective on positive affect. Previous studies revealed that university students being in a romantic relationship experienced positive emotions more (Berry & Willinham, 1997; Diener & Fujita, 1995). Negative emotions are expected to diminish in young individuals who can establish safe and healthy relationships with a romantic

partner and meet their need for social support and intimacy thanks to the romantic partner (Diener et al., 1999; Du & Wei, 2015). Accordingly, what matters in the decrease in the negative affect of university students might not be having a romantic relationship but being in a healthy and satisfying relationship. The participating students might experience negative emotions more since they are not satisfied with their relationships. However, this thought should be confirmed in the next studies, because no information is available about the nature of the participating students' romantic relationships or whether they were happy with their romantic relationships in this study.

As a result, having a ruminative thought style and being female are important risk factors in terms of the decrease in positive affect, while having a ruminative thought style and being in a romantic relationship are significant risk factors in terms of the increase in negative affect. Furthermore, increased awareness and age contribute to the increase in positive affect, while increased acceptance causes negative affect to decrease. When the overall findings are evaluated, it is seen that independent variables have varying effects on positive and negative affect. In other words, it is not possible to claim that an independent variable that leads to a decrease in positive affect will cause an increase in negative affect at the same level. This situation can be considered as an indicator of the fact that negative and positive emotions are not two extremes located on the same plane, but they are two separate dimensions independent of each other (McCrae & Costa, 1991).

Limitations of the Research and Recommendations for Future Research

This study had various limitations. The first limitation was that the participants of the study consisted of 466 undergraduates studying at a state university in the Aegean Region of Turkey. In future research, it would prove beneficial to include sample groups chosen among undergraduates studying in different regions of Turkey. The second limitation of the study was that there was not a balance regarding the gender distribution of the participants. It is recommended to ensure a balanced distribution in terms of gender. The third limitation was that there were only three demographic variables included in this study. In the next studies, influences of the other demographic variables (e.g. SES, sexual orientation or financial situation) can also be examined. Finally, the present study was designed based only on a quantitative research method. Conducting a research based on the qualitative method could contribute to a better understanding of the issue.

Based on the findings of the study, a few recommendations were developed for the professionals working in the field of psychological counseling. First, seminars on the effect of rumination and mindfulness on the happiness of the individual can be organized in universities. In their psychological interventions toward students who experience positive emotions less and negative emotions more, universities' psychological counseling and guidance services can focus on decreasing ruminative thought style and increasing mindfulness. Especially, developing the awareness dimension of mindfulness in students experiencing positive affect less and the acceptance dimension of mindfulness in students experiencing negative affect more can be emphasized. Psycho-educational projects which aim at decreasing ruminative thought style and increasing mindfulness can be organized. Since being female is related to the decrease in the positive affect, aiming especially at females in the intervention studies to be organized can be useful. Secondly, as the independent variables addressed in the study accounted for 15% of the variance in positive affect and explained 28% of the variance in negative affect, it will contribute to the literature for the researchers to analyze different psychological and demographic variables that may affect positive and negative affect in the future studies. The results of the present study indicate that the changes in positive and negative affect can be related to different dimensions of

mindfulness. More comprehensive studies can be conducted for the subject to be understood better. In this context, it might prove useful to investigate in the future whether variables play an intermediary role in the effect of the awareness sub-dimension of mindfulness on negative affect and that of the acceptance sub-dimension on positive affect. As being in a romantic relationship is associated with the increase in the negative affect of university students, more studies should be carried out to have a better understanding of the relation between romantic relationships and negative affect. In the study, students were only asked if they were in a romantic relationship. In future research, it can be investigated whether the evaluations of the students being in a romantic relationship about the quality of their relationships intermediate the relationship between having a romantic relationship and positive and negative affect. Furthermore, qualitative research can be carried out to understand how being in a romantic relationship increases negative emotions. Finally, policymakers may develop preventive strategies toward female university students in Turkey who have high rumination tendency and low mindfulness.

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