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Research Article

Optimism and Psychological Resilience in relation to Depressive Symptoms in University Students: Examining the Mediating Role of Self-Esteem

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Abstract

This study examined the role of self-esteem as a mediator in the relationships between optimism and psychological resilience on depressive symptoms in university students. A total of 494 undergraduate students, comprising of 253 female and 241 male participated in this study. Participants' ages ranged from 18 to 30 ($M = 20.85$, $SD = 1.57$). Instruments measuring optimism, psychological resilience, self-esteem and depression were administered to university students from different faculties and departments. Application of a structural equation model to the obtained data resulted in a direct relationship between optimism and psychological resilience with symptoms of depression. In addition, it was determined that self-esteem is a full mediator between psychological resilience and depressive symptoms. The mediator role of self-esteem between optimism and depressive symptoms; however, did not reach statistically significant levels. The findings are discussed within the self-esteem, optimism, and resilience in an individual's mental health context.

Keywords

Optimism • Psychological resilience • Self-esteem • Depressive symptoms • Mediation

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The study of depression has been one of the most interesting research topics for many years (e.g., Giltay, Zitman, & Kromhout, 2006; Nolen-Hoeksema, 2000). Approximately 350 million people suffer from depression world-wide (WHO, 2012). Depression is different from short-term emotional reactions caused by daily hardships and usual mood swings. Specifically, long-term and medium or severe depression may cause serious problems, such as low performance and high levels of suffering at work, school and family (WHO, 2012). Depression is a mental illness often seen specifically in university years (e.g., Eisenberg, Gollust, Golberstein, & Hefner, 2007). University students begin a transition into a life increasingly independent from their families in college and have to deal with difficulties, such as lack of family support, academic success, economic hardships, and coping with new responsibilities. Often, students can exhibit depressive symptoms as a result of these challenges (Beck, Taylor, & Robbins, 2003; Eisenberg, et al., 2007). Such individuals typically have severe feelings of incompetence and low life satisfaction (Fuhrer, Rintala, Hart, Clearman, & Young, 1992). Depressive symptoms may cause negative expectations for the future. However, one of the protective properties from negative future expectations seems to be optimism.

Optimism

Optimism refers to the general expectancy that one will experience good outcomes in the future (Scheier & Carver, 1985). In the literature optimism is defined by two important components: “learned optimism” (Peterson & Seligman, 1984) and “dispositional optimism” (Scheier & Carver, 1985). Learned optimism is accepted as a personal trait rather than situational explanatory style. According to this theory optimistic individuals use adaptive attributional style in order to explain adverse events. On the other hand, Scheier and Carver (1985) define optimism as a general belief that good things will happen rather than bad things in the future. Thus, optimism, as a personality trait, reflects good expectations for the future.

Some authorities divide optimism into two aspects: realistic and unrealistic. According to Schneider (2001), all forms of optimism are not beneficial. Being optimistic is not beneficial when the expectations and goals are unrealistic. In unrealistic optimism, although individuals are aware of their limitations they have high positive expectations for the outcomes. For instance, if they have an expectation that they will get high grades from an exam with the help of God and good luck, although they have not studied or have inadequately studied for an exam. However, in realistic optimism, in order to reach the desired outcomes, studying and hoping are necessary. In other words, when enough effort is put in, it is not just a dream to achieve a desired outcome.

Optimistic individuals seem able to solve problems they face more rapidly (Chang & D'Zurilla, 1996). Because optimistic individuals have positive expectations for the future, they experience less anxiety and daily problems (LaMontagne, Hepworth, Salisbury, & Riley, 2003; Trunzo & Pinto, 2003), they experience more positive emotions (Lai et al., 2005) and they have more life satisfaction (Bailey, Eng, Frisch, & Snyder, 2007; Leung, Moneta, & McBride-Chang, 2005). Thus, they suffer less depressive symptoms because they can deal with problems more strongly (Chang, 1998; Puskar et al., 1999). In various studies, optimism has been found to be negatively associated with depressive symptoms (e.g., Cohen, Moor, & Amato, 2001; Steele & Wade 2004). In other words, both optimists and pessimists encounter similar problems in their lives, but optimists seem to overcome these issues more easily; pessimists may simply give up and fall into depression (Seligman, 2007). Therefore, those with high optimism tend to have low levels of depression (Van der Velden et al., 2007; Vickers & Vogeltanz, 2000).

Psychological Resilience

While some people are more resilient when they encounter certain troubles, others may give up more readily when facing problems. Psychological resilience has been the focus of various researchers because it is an interesting subject. Many definitions of psychological resilience exist. For instance, psychological resilience has been defined as the process of successfully adapting faced with difficult or threatening situations (Howard & Johnson, 2000), the skill of adapting to and coping with negativity (Block & Kremen, 1996), the relatively good outcome despite experiencing situations that have been shown to carry significant risk for developing psychopathology (Luthar, Cicchetti, & Becker, 2000) and the resistance of an individual despite the negative effects of difficulties (Gilligan, 2001). According to all these definitions, psychological resilience expresses continuing to live strongly despite the hardships encountered. Psychological resilience includes coping with difficult situations (Dumont & Provost, 1999) psychological adjustment (Ong, Bergeman, Bisconti, & Wallace, 2006), and having life satisfaction (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009). Psychological resilience develops in a large time span. In order to psychological resilience to develop the individual needs to encounter risky or dangerous situations. A strong psychological resilience can protect the individual against physical and mental distress. Since resilience brings about positive physical and psychosocial conditions, it facilitates faster recovery after illness or loss (Felten, 2000; Felten, & Hall, 2001). In other words, resilient people are those who can sustain their normal development despite difficult environmental conditions and difficulties in life. Individuals with psychological resilience confront their problems and rather than avoiding their problems they deal with their problems by providing efficient

and successful solutions (Martin, 2002). Psychological resilience has a potential of preventing the development of psychiatric disorders as depression (Hjemdal, Aune, Reinfjell, Stiles, & Friberg, 2007; Rutter, 1987). Multiple studies found a meaningful negative relation between high psychological resilience and depression (e.g. Roy, Sarchiapone, & Carli, 2007; Vaishnavi, Connor, & Davidson, 2007).

The Current Study

In recent years, mediation analyses have been the most intensively used research methods for examining the relationships between variables (Acun-Kapikıran, 2011; Kapikıran, 2012; Subica, Claypoole, & Wylie, 2012; Zettle, Rains, & Hayes 2011). Structural equation model is recommended for mediation studies. The structural equation model is appropriate to determine the level of relation of a multiple number of variables and the direct and indirect roles among variables (Frazier, Tix, & Barron 2004). In this study, the aim was to determine the mediating role of self-esteem between optimism and psychological resilience, and depressive symptoms. Psychological resilience, optimism, and self-esteem variables as notions of positive psychology complement each other. In other words, individuals with high optimism and resilience have high self-esteem (Bryan, Aikena, & West, 2004; Erarslan, 2014; Lee, Cohen, Edgar, Laizner, & Gagnon, 2006; Lyubomirsky, Tkach, & Dimatteo, 2006; Patton, Artrum, & Creed, 2004). While these variables have depression reducing functions self-esteem is a changeable quality (Block & Robins, 1993), but optimism and psychological resilience are stable qualities (He, Cao, Feng, Guan, & Peng, 2013; Scheier & Carver 1985). The positive relationship between depression and low self-esteem begins in very early years. For instance, Marciano and Kazdin (1994) found a negative relationship between self-esteem and depression among children between the ages of 6 and 13. Many previous studies have examined the direct role of optimism, resilience and self-esteem on depression (e.g. Heinonen, R ykk nen, & Keltikangas-J rvinen, 2005; Lee & Hankin, 2009; Makikangas, Kinnunen, & Feldt, 2004; Milevsky, Schlechter, & Netter, 2007).

In this study, the second predictor variable, which exists within the framework of the model, is psychological resilience. In a review of the available studies on this subject, all studies reported evidence of a negative relationship in which psychological resilience was the predictor of depression (e.g. Adams, Sanders, & Auth, 2004; Aroian & Norris, 2000; Erarslan, 2014; Ryd n, Karlsson, Sullivan, Torgerson, & Taft, 2003). Additionally, significant relationships were found between some of the mediating variables within the scope of the various studies: self-esteem and resilience (Karaimak & Siviş-Çetinkaya, 2011; Veselska et al., 2009), self-esteem and depression (e.g. Christopher & Gilbert, 2010; Wei, Ku, Russell, Mallinckrodt, & Liao, 2008).

According to these results, a negative relationship is expected between optimism and depression, between psychological resilience and depression and between self-esteem and depression. Moreover, these results raise the expectation that self-esteem can be a mediator between optimism and psychological resilience and depression. For example, some studies have demonstrated a positive relationship between self-esteem and optimism and a negative relationship between self-esteem and depression (e.g. Cheng & Furnham, 2003; Eryılmaz & Atak, 2011; Symister & Friend 2003). It was determined that self-esteem had a strong indirect role in the relation between adolescents' acceptance and rejection of parents and depression symptoms (Acun-Kapıkıran, Körükçü, & Kapıkıran, 2014). In various studies related to the mediator role of self-esteem, the powerful role of self-esteem has been emphasized (Acun-Kapıkıran, Körükçü, & Kapıkıran, 2014; Kamkar, Doyle, & Markiewicz, 2012; Kapıkıran, 2013; Koruklu, 2015; Koronczai, 2013; Savi-Çakar, 2014). It is determined that self-esteem and optimism have protective roles over depression symptoms (Ames, Rawana, Gentile, & Morgan, 2015). When optimism and resilience are considered more stable features compared to self-esteem, they may change and fluctuate within the steps of self-esteem's development (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). Thus, the mediator role of the self-esteem variable is worth investigating. It can be seen that there is large amount of literature evidencing in all these studies that self-esteem has a positive relation with optimism and psychological resilience, and a negative relation with depression.

In the light of these studies and theoretical background the current study hypothesizes that (a) there will be a positive correlation between optimism and self-esteem and negative correlation between optimism and depression (b) there will be positive correlation between resilience and self-esteem and negative correlation between psychological resilience and depression (c) there will be a negative correlation between self-esteem and depression. Within the scope of these hypotheses (a) self-esteem will have a mediating role between optimism and depression; (b) self-esteem will have a mediating role between psychological resilience and depression (see Figure 1). In the literature it is reported that self-esteem has an important contribution in decreasing and developing depression. Thus, even though optimism and psychological resilience have an important role in depression development and prevention we hypothesized that self-esteem will contribute more to depression compared to the above mentioned two variables (optimism and psychological resilience). If in the current study the hypothesized mediating role of self-esteem between optimism and psychological resilience is supported, even though optimism and resilience are important factors in preventing and dealing with depression, then there will be evidence that self-esteem has an important contribution to this relation. Consequently, in order to prevent and

deal with depression during college study years intended efforts of increasing self-esteem along optimism and psychological resilience development processes starting from earlier years in life will be very important.

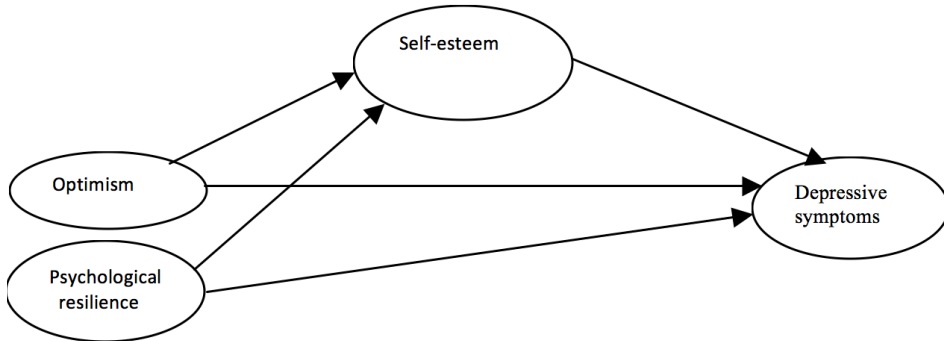


Figure 1. Hypothesized mediated model.

Method

Participants

A total of 494 university students, comprising of 253 female and 241 male participated in this study. Participants' ages ranged from 18 to 30 ($M = 20.85$, $SD = 1.57$). 21% of participants were first year, 29% the second year, 32% the third year and 18% fourth year students. All participants attended a medium sized university situated in the west of Turkey. In order to represent all faculties within the university it was targeted to have equal count of students from each faculty. Moreover, in order to balance the male-female participants faculties with predominantly male and predominantly female students were also included in the sample. Participants were chosen on a voluntary basis from classes whose instructors permitted the administration of the scale in their lectures. Within the study group, 27% of participants were students of the Faculty of Education, 24% attended the Faculty of Engineering, 26% Faculty of Economics and 22% the School of Nursing. 21% of participants were first year, 29% the second year, 32% the third year and 18% were fourth year students.

Measures

Depressive Symptoms. The Brief Symptom Inventory (BSI), developed by Derogatis (1992), is a 53-item self-report scale. The BSI measures the experience

of symptoms in the past seven days including the day the BSI was completed. The instrument is a 5-point scale that can be answered ranging from 0, never, to 4, quite a bit. The BSI also has high internal consistency (Cronbach's Alpha: .71-.85), test-retest reliability, and convergent, discriminant and construct validity (as cited in Şahin & Durak, 1994). The scale was translated and adapted for Turkish adolescents by Şahin and Durak (1994). A five-factor structure of the Turkish scale (anxiety, depression, negative self, somatization, and hostility) was obtained. Moderate and high levels of correlation were obtained between BSI's depression symptoms subscale and anger, anxiety, and social support scale points (Doğan, 2008). The obtained internal consistency reliability for this measure was calculated as: anxiety .85, depression .87, negative self .83, somatization .79, and hostility .73. For the current study, only the depressive symptoms subscale was used.

Optimism. Optimism was measured by means of the Life Orientation Test (LOT), developed by Scheier & Carver (1985). LOT is a self-reporting scale that contains 12 items, 8 of which are used for measuring optimism and 4 of which are used as filling material. Four of the 8 items used for measuring optimism are in a negative direction while the other four present positive constructs. Each expression of the scale is graded over a 5-point scale in which 0 refers to a strong mismatch, while 5 indicates a strong match. Cronbach's alpha coefficient of the scale was calculated as .76. LOT was translated and adapted to Turkish by Aydın and Tezer (1991). The correlations of LOT with Beck Depression Inventory and Physical Symptoms Inventory were -.56 and -.21, respectively. Cronbach's alpha of Turkish LOT was .72, and test-retest reliability, which was measured at intervals of four weeks, was calculated as $r = .77$.

Resiliency. The Ego Resiliency scale that was developed by Block and Kremen (1996) was utilized to quantify psychological resilience. The scale consists of 14 items and it is a Likert-type scale with 4-points ranging from 1 to 4. The Cronbach alpha reliability of the scale reported by Block and Kremen was .76. The Ego Resiliency scale was translated and adapted to Turkish by Kararmak (2007). A three-factor solution for the Turkish the Ego Resiliency scale proved to be a good fit to the data. The Cronbach alpha coefficients for internal consistency reliability were calculated as .66, .63, .67 for the three subscales of Personal Strengths Relating to Recovery; Positive Self-Appraisals and Openness to New experiences respectively. Cronbach's alpha coefficient for all items is calculated as .80. As an evidence of similar scales' validity, correlation tested with another psychological resilience scale was found as .68. A positively directed meaningful relation was found between the scores obtained from both ego resilience scales (Kararmak, 2007).

Self-esteem. The Rosenberg Self-Esteem Scale (RSES) is developed by Rosenberg. It is a 10-item instrument that assesses global self-esteem. Five items of the scale are positive and five items are negative 5 items in the scale require reverse scoring. High scores define high self-esteem. The scale is a 4-point Likert scale type instrument answers ranging from 1 strongly disagree to 4 strongly agree. The scores for the RSES can range from 10 to 40 with higher scores indicating higher levels of self-esteem (see, [Cuhadaroglu, 1986](#)). RSES was translated and adapted to Turkish by [Cuhadaroglu \(1986\)](#). The correlation between the scale and psychiatric interview results was found to be .71 for validity of the RSES-Turkish version. The test-retest reliability was reported as .75.

Procedures

Participants in the present study are university students. Participants were chosen from the 1st, 2nd, 3rd and 4th years of one department from each faculty in order to ensure that each faculty was equally represented. The data collection tools were administered to students in different lessons and students were informed that participation was voluntary. No monetary rewards, grades or points were given to the participants. It took approximately 35 to 40 minutes for the participants to answer the scale's items. The items of scale were completed by 494 university students, but 27 students left 10 % of questions unanswered, so their responses were excluded. The data were analyzed using SPSS 14.0 and LISREL 8.71 software programs.

Results

Correlations and Descriptive Statistics

Correlation analysis was conducted in order to determine the relationships between the research variables. Table 1 shows descriptive statistics for the variables. As seen in Table 1, total scores and sub scales of optimism and psychological resilience, self-esteem and depressive symptoms measurements are correlated. It was found that optimism had a positive relationship with psychological resilience and self-esteem and had a negative relationship with depressive symptoms. There is a positive relationship between psychological resilience and self-esteem and a negative relationship between psychological resilience and depressive symptoms. Moreover, a negative relationship was determined between self-esteem and depressive symptoms.

Table 1

Intercorrelations and Descriptive Statistics of all Variables in the Study

Measure	1	2	3	4	Mean	Ss	α
1. Depressive Symptoms	-	-.37**	-.22**	-.44**	13.91	9.03	.88
2. Optimism		-	.26**	.41**	18.47	4.88	.71
3. Psychological Resilience			-	.32**	38.61	5.30	.72
4. Self Esteem				-	31.98	4.53	.83

Note. N = 494. Depressive symptoms = Depressive Symptoms subscale of the Brief Symptom Inventory; Optimism = Optimism was measured with the Life Orientation Test; Psychological Resilience = Psychological Resilience was measured with the Ego Resiliency scale; Self-esteem = Self Esteem was measured with the Rosenberg Self-Esteem Scale.

** $p < .001$.

Procedure for Mediation Test

The most appropriate method of examining mediation and correlations between many variables is structural equation modeling using a package such as LISREL (Frazier et al., 2004; Jöreskog & Sörbom, 2004). Various procedures were followed, based on the structural equation model, in order to test the hypothesized model in the present study. Firstly, a two-step procedure suggested by Anderson and Gerbing (1988) was followed to test the suggested model. Firstly question items related to the variables were decreased and artificial factors were formed. Then these factors were tested by confirmatory factor analysis. The second step tests the structural relationships among latent constructs. In the first step, a measurement model was tested. Study factors were created in accordance with the procedure suggested by Sass and Smith (2006). A three-step procedure suggested by Holmbeck (1997) was followed in order to test the structural model. As all measurements were continuous, a covariance matrix and maximum possible method were used as inputs to test the measurement and structural models. Four indexes were used to assess the fit values of models: comparative fit index (CFI; .95 or greater), Non-Normed Fit Index (NNFI; .95), standardized root-mean-square residual (SRMR; .08 or less), and root-mean-square error of approximation (RMSEA; .06 or less). Criteria suggested by Hu and Bentler (1999) were taken into consideration. Sequential χ^2 difference tests were used to evaluate changes in fit between the hypothesized model and nested model (Satorra & Bentler, 2001). Moreover, the Sobel test was used to determine the significance of the indirect relationship between the variables and, the indirect effect test was employed to determine the indirect effects of variables.

Table 2
Correlations among 12 Observed Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12
Depressive Symptoms												
1. Depressive Symptoms parcel 1	1	-.68**	.74**	-.30**	-.31**	-.20**	-.24**	-.10*	-.10	-.32**	-.36**	-.35**
2. Depressive Symptoms parcel 2			.67**	-.29**	-.28**	-.23**	-.26**	-.14**	-.10*	-.26**	-.25**	-.30**
3. Depressive Symptoms parcel 3			1	-.29**	-.28**	-.20**	-.29**	-.10*	-.12**	-.30**	-.37**	-.34**
Optimism												
4. Optimism parcel 1				1	.60**	.44**	.25**	.18**	.09*	.33**	.36**	.33**
5. Optimism parcel 2					1	.36**	.28**	.15**	.09*	.21**	.29**	.27**
6. Optimism parcel 3						1	.21**	.15**	.15**	.20**	.20**	.23**
Psychological Resilience												
7. Psychological Resilience parcel 1							1	.48**	.51**	.25**	.31**	.28**
8. Psychological Resilience parcel 2								1	.46**	.20**	.23**	.19**
9. Psychological Resilience parcel 3									1	.20**	.22**	.18**
Self Esteem												
10. Self-Esteem parcel 1										1	.76**	.61**
11. Self-Esteem parcel 2											1	.61**
12. Self-Esteem parcel 3												1

Note. N = 494. Note. * $p < .05$, ** $p < .001$.

Each observed variable was parceled (facets) in order to reduce error rate of variables observed in use of multivariable in the structural equation modeling (SEM). The method of parceling items is used to avoid prediction problems combining with multi-normality of data and from solution problems. Suggested indicators represent latent variables in SEM applications (Sass & Smith, 2006). The use of SEM suggests the use of three or more parcels for each latent variable (Russell, Kahn, Spoth, & Altmaier, 1998). In producing parcels, according to the procedure advised by Hau and Marsh (2004) three parcels were produced from each variable (Depression, Optimism, Psychological resilience and Self-esteem). Three artificial factors were obtained from each variable. The testing of the model of the study was carried through 12 parcels and four latent variables (see, Table 2).

Table 3

Factor Loadings for the Measurement Model

Latent variable and indicator	Unstandardized loading	SE	t	Standardized loading
Depressive Symptoms				
DS1	3.09	0.13	23.16**	.85
DS2	2.43	0.12	19.65**	.76
DS3	2.94	0.13	24.31**	.88
Optimism				
O1	1.76	0.095	18.77**	.84
O2	1.53	0.095	15.91**	.71
O3	0.94	0.083	11.29**	.52
Psychological Resilience				
PR1	1.67	0.100	16.57**	.77
PR2	1.55	0.11	13.83**	.64
PR3	1.28	0.089	14.54**	.67
Self esteem				
SE1	1.31	0.058	22.71**	.85
SE2	1.38	0.058	23.94**	.88
SE3	1.39	0.079	17.72**	.71

Note. N = 494. Depressive Symptoms DS1, DS2, DS3 = the three parcels created from the Depressive Symptoms subscale of the Brief Symptom Inventory; Optimism O1, O2, O3 = the three parcels created from the Life Orientation Test; Psychological Resilience PR1, PR2, PR3 = the three parcels created from the Ego Resiliency scale; Self-Esteem SE1, SE2, SE3 = the three parcels created from the Rosenberg Self-Esteem Scale.

** $p < .001$.

Testing Measurement Variables by Means of Confirmatory Factor Analysis for Mediation Test

A series of 12 variables (parcels) and four latent variables were tested by means of confirmatory factor analysis (CFA) in order to determine whether observed variables (parcels) were compatible with each latent variable. The results showed excellent fit to data $\chi^2(48, N = 494) = 101.91, p < .001$ (CFI = 0.99; NNFI/TLI = 0.98; RMSEA = 0.046, SRMR = 0.043, 90% confidence interval (CI) = .03 to .05). In Table 3, it can be seen that loads for all observed variables were sufficiently high (.72 to .88) and t values were significant. In addition, intercorrelations between parcels were statistically significant (see Table 2).

Testing Structural Model for Mediation Test

A three-step way approach was followed for the mediation test, which was conducted via the SEM (Holmbeck, 1997). Firstly, the method tested the significance level of the direct effect between optimism and depressive symptoms; between psychological resilience and depressive symptoms. At the end of this analysis the indexes of the structural equation modeling reached a good fit level $\chi^2(24, N = 494) = 55.50, p = .001$, CFI = .98; NNFI/TLI = .98; SRMR = .044; RMSEA = .052, 90% CI = .03 to .06. As

expected all hypothesized direct relations of optimism and depression; and psychological resilience and depression were meaningful (see Figure 2). In the second step, after testing the partially mediated structural model (hypothesized model; see Figure 1) in order to determine all direct and indirect effects (optimism, psychological resilience, self-esteem and depressive symptoms), $\chi^2 (48, N = 494) = 101.91, p < .001, CFI = .99; NNFI/TLI = .98; SRMR = .043; RMSEA = .046, 90\% \text{ confidence interval (CI)} = 0.03-0.05$ it was determined that fit indexes reached a good level. Next, the fully mediated structural model was tested in order to determine indirect effects in the absence of direct effects. It was noted that indexes of the structural equation model also reached a good level $\chi^2 (50, N = 494) = 140.73, p < .001, CFI = .98; NNFI/TLI = .98; SRMR = .063; RMSEA = .053, 90\% \text{ CI} = .04 \text{ to } .07$.

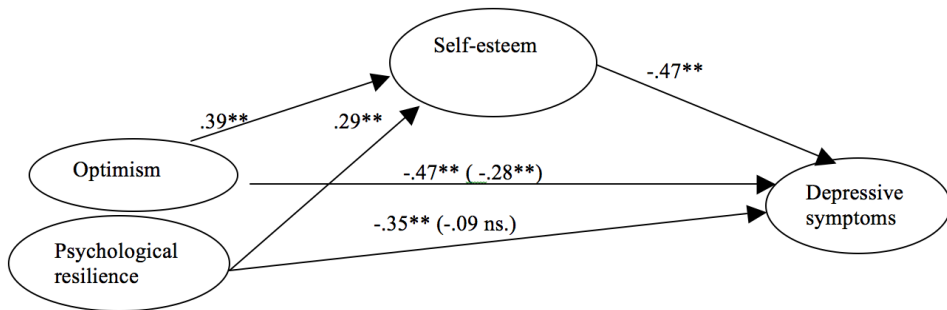


Figure 2. The Final mediated model.

$**p < .001$.

Testing Structural Model’s Significance Levels of Direct and Indirect Effects for Mediation Test

The results of the direct effect model indicated that the direct paths from optimism and depressive symptoms ($\beta = -.47, t = -9.08, p < .001$) and psychological resilience and depressive symptoms ($\beta = -.35, t = -6.66, p < .001$). Next, the fully mediated structural model was tested (the indirect effect without the direct effect) for relationship between optimism and self-esteem ($\beta = .39, t = 7.31, p < .001$), self-esteem and depressive symptoms ($\beta = -.47, t = -9.75$), psychological resilience and self-esteem ($\beta = .29, t = 5.42, p < .001$). Moreover, figure 2 presents all the statistically significant standardized path coefficients between the latent variables optimism and depressive symptoms ($\beta = -.28, t = -4.99, p < .001$), optimism and self-esteem ($\beta = .37, t = 6.89, p < .001$), self-esteem and depressive symptoms ($\beta = -.28, t = -5.05, p < .001$), psychological resilience and self-esteem ($\beta = .28, t = 5.24, p < .001$) and psychological resilience and depressive symptoms ($\beta = -.09, t = -1.64, p = \text{ns.}$). However, when self-esteem is added to the equation, the relationship between

optimism and depressive symptoms fell from $\beta = -.47$ to $-.28$ and the relationship between psychological resilience and depressive symptoms fell from $\beta = -.35$ to $-.09$ (see Figure 2).

Then, to test the difference between the fully mediated and partially mediated models the chi square test was administered. As a result, the chi-square difference test between the hypothesized partially mediated model and the fully mediated model, $\chi^2(2, N = 494) = 38.82, p = .001$ was found significant level difference change. Hence, the hypothesized partially mediated model was selected as the best fit to the data (see Fig. 2). In order to test the indirect effect and the significance of the model the Sobel test was administered (Sobel, 1982). The indirect effect of self-esteem between optimism and depressive symptoms was found to be significant at $-.18 (.39 \times -.47, Z = -6.66, p < .001)$. The indirect effect of self-esteem between psychological resilience and depressive symptoms was found to be significant at $-.14 (.29 \times -.47, Z = -5.20, p < .001)$. In addition, this model accounted for 28% of the variance in self-esteem and 23% of the variance in depressive symptoms. In summary, according to the current study's findings, self-esteem's mediator role levels did not reach meaningful levels between optimism and depression. However, self-esteem reached a fully mediator role between psychological resilience and depression.

Table 4

Fit Indexes for Covariance Structure Analyses

Model	X ²	Df	NNFI	CFI	SRMR	RMSEA	90 % CI	ΔX^2	ΔDf
Measurement model	101.91	48	0.98	0.99	0.04	0.04	0.03-0.05		
Partially model	101.91	48	0.98	0.99	0.04	0.04	0.03-0.05		
Direct role	55.50	24	0.98	0.98	0.04	0.05	0.03-0.06	46.41**	24
Fully model	140.73	50	0.98	0.98	0.06	0.05	0.04-0.0	738.82*	2

Note. N = 494, NNFI = Non-Normed Fit Index, CFI = Comparative Fit Index, SRMR = Standardized Root-Mean-Square Residual, RMSEA = Root-Mean-Square Error of Approximation, CI = Confidence Interval
* $p = .05$, ** $p = .001$.

Discussion

The purpose of this study is to examine, through the use of SEM, whether or not self-esteem is a mediator between psychological resilience, optimism, and depressive symptoms among university students. At the end of SEM used in order to determine direct and indirect effects of self-esteem on the relationships between optimism and psychological resilience and depressive symptoms, it was seen that the model had a good fit indexes. It is expected that optimistic individuals have higher self-esteem because optimism represents an individual's good expectations for the future. Self-esteem is positively affected by good expectations for the future. As a matter of fact, a positive relationship was found between optimism and self-esteem. The studies examining the relationship between optimism and self-esteem in university

students, who were included in this study, also determined a positive relationship (e.g. Bastianello, Pacico, & Hutz, 2014; Bosson, Brown, & Zeigler-Hill, 2003; Myers & Reynolds, 2000). Moreover, a negative relation between optimism and depression is expected. A negative directional relationship has been reported between optimism and depression in many studies (e.g. Devine et al., 2000; Hudson, Elek, & Campbell-Grossman, 2000; Neiss, Stevenson, Legrand, Iacono, & Sedikides 2009). That is to say, depressive symptoms may be seen more frequently in individuals who are not optimistic. According to these findings, the first hypothesis of the current study is supported. The second hypothesis of the current study was that there will be a positive relationship between resilience and self-esteem and negative relationship between psychological resilience and depression. The analysis results showed that there is a meaningful positive relationship between psychological resilience and self-esteem and negative relationship between psychological resilience and depression. Thus, the second hypothesis of the study was also supported.

The result also supported the previous studies (Benetti & Kambouropoulas, 2006; Bonanno, 2004; Dumont & Provost, 1999; Karaimak, 2007; Kaya, 2007). Psychologically resilience is negatively directed predictor on depressive symptoms. Psychologically resilient individuals can more easily cope with depressive symptoms (Hjemdal et al., 2007; Judd et al., 2003; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Accordingly, psychologically resilient individuals experience less depressive symptoms.

As expected, a negative relationship was noted between self-esteem and depressive symptoms. This relationship supported the findings of multiple studies within the literature (e.g. Eskin, Ertekin, Harlak, & Dereboy, 2008; Johnson, 2010; Martyn-Nemeth, Penckofer, Gulanick, Velsor-Friedrich, & Bryant, 2009). The third hypothesis of the current study was supported as well.

However, potentially the most important finding of the present study is to estimate the level to which self-esteem mediates optimism and depressive symptoms. While the direct relationship between optimism with depressive symptoms was found to be at a medium level, this effect was reduced when self-esteem was added to the model. Although the inclusion of self-esteem within the model appeared to weaken the relationship between optimism and depressive symptoms, the relationship was still significant. In other words, self-esteem does not have a mediator role between optimism and depression. The role of self-esteem on decreasing the predictor force of optimism on depression was low. This finding does not elicit that self-esteem is a low level predictor of depression. Hence, one of the most important reasons self-esteem does not have a mediator role between optimism and depression is because

both variables have strong predictor forces on depression. In a study by Fontaine and Jones (1997) studies examining the relationship between optimism and self-esteem with depressive symptoms, found a moderate level negative relationship between both optimism and depression and self-esteem and depression. In a study by Brissette, Scheier, and Carver (2002), optimistic individuals were found to experience low levels of depression.

The relationship between psychological resilience and depressive symptoms was also examined to determine the potential mediator role of self-esteem. Considering the direct relationship between psychological resilience and depressive symptoms, a moderate significant relationship was determined between psychological resilience and depressive symptoms. Then, when self-esteem was included in the relationship, it was seen that the relationship was not at a significant level. In other words, self-esteem is a full mediator between psychological resilience and depressive symptoms. In a study done by Eraslan (2014), it was found that self-esteem had a fully mediated role on the relationship between psychological resilience and depression. On the other hand, various studies have investigated the mediator role of self-esteem on the relation between depression and different variables. For example, in a study by Roberts, Gotlib, and Kassel (1996) adult attachment security and depression were found to be had a mediating role on low self-esteem. In another study, self-esteem was found to partially mediate the relationship between negative events and depression (Auerbach, Abela, Ho, McWhinnie, & Czajkowska, 2010). Kararmak (2007) found that self-esteem has an indirect effect on psychological trait resilience of earthquake survivors.

In conclusion, self-esteem was found to be a full mediator between psychological resilience and depressive symptoms. Self-esteem is seen as the stronger variable in this relationship. Accordingly, self-esteem makes a greater contribution to the relationship between psychological resilience and depressive symptoms. However, self-esteem does not have a mediator role between optimism and depression.

Limitations and Conclusions

This study has certain limitations. The first limitation is that, as it is based on data collected from a certain age group, the findings pertaining to the relationships between the variables cannot be generalized. The second limitation is that, as data were obtained from Turkish university students, the findings cannot be generalized for all university students. Therefore, the present study should be repeated to examine different cultures and different university students. Studies covering different ages and periods should be conducted in order to generalize these findings for different

ages and periods. Additionally, a contribution can be made to the establishment of cause and effect relationships by conducting longitudinal studies with the variables employed in this study.

Despite these limitations, this study makes certain valuable contributions. First, the finding that an inverse relationship between optimism and depressive symptoms, which had been examined among students of different universities in different countries, was also found among university students, can contribute to the generalization of these variables. In addition, a similar relationship emerged between psychological resilience and depressive symptoms. Most importantly, it was found that self-esteem is a mediator variable between resilience and depressive symptoms. This study showed that self-esteem was a full mediator between resilience and depressive symptoms, while it was not a mediator between optimism and depressive symptoms. In other words, self-esteem has a strong indirect role between resilience and depression. According to this finding, even if an individual's psychological resilience is few studies toward increasing the individual's self-esteem will be important in the following years. There is a strong relation between resilience and self-esteem (Eraslan, 2014; Lee & Williams, 2013; Sarıkaya, 2015; Sart, Börkan, Erkman, & Serbest, 2016). Hence, the increase in self-esteem will increase the resilience of an individual. These findings emphasize the importance of psycho-educational programs being prepared toward increasing self-esteem specifically for every age and period. Moreover, the findings also indicate the need of providing psychological counseling services in order to decrease the effects of depression and increase self-esteem. Depending on the level of depression symptoms different interventions may be needed. Consequently, speaking within the context of the findings, while clinical treatment is needed for students with intense depression psycho-education can be provided to individuals with lower depression. When these education programs are repeated within certain intervals the effect may be more lasting. Şahan-Yılmaz and Duy, (2013), identified that the application of the psycho-educational program toward changing irrational beliefs in female college students increased the self-esteem of the students.

On the other hand, a relative feature such as optimism that is acquired in early ages has a strong role on depression. However, self-esteem does not have a strong role on the relation between optimism and depression. In other words, reaching an optimistic attitude occurs significantly independent from self-esteem in an individual. Furthermore, when pessimism is thought as an irrational way of thinking, it is necessary for school counselors to prepare psycho-educational programs aiming to increase learned optimism and decrease irrational beliefs in children and adolescents (Ulusoy & Duy, 2013). When it is considered that part of optimism is learned the

need arises to intervene in earlier years. Another finding of the current study revealed that optimism is a variable that predicts depressive symptoms on average level. Therefore, the high levels of optimism and self-esteem may decrease the symptoms of depression (Chung, Bakas, Plue, & Williams, 2013; Parmaksız & Avşaroğlu, 2012). However, offering psycho-educational programs toward increasing self-esteem, resilience and optimism and counseling services to college students may decrease the depressive symptoms of individuals. According to all these results, it is evident that in order to prevent depression optimism and psychological resilience, self-esteem should be increased. Therefore, psychologists, and psychological counselors should guide parents to develop optimism and psychological resilience, self-esteem in their children's early years.

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