

Examining the Relationship between Self-rumination and Happiness: The Mediating and Moderating Role of Subjective Vitality*

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ABSTRACT

The basic purpose of this study is to examine the mediating and moderating role of subjective vitality in relationship between rumination and subjective happiness. The participants were 420 university students. In this research, the Self-rumination Scale-SRS, the Subjective Vitality Scale and the Short Form of Oxford Happiness Questionnaire were used. The relationships between rumination, subjective vitality, and happiness were examined using correlation analysis and hierarchical regression analysis. In correlation analysis, happiness and subjective vitality were found negatively related to self-rumination. On the other hand, happiness had positive relation with subjective vitality. Hierarchical regression analysis showed that rumination levels in a decrease of subjective vitality on an unhappy person whereas enhances in subjective vitality leads to happiness; however, rumination also produces unhappiness. Results were debated in the light of the related literature.

Keywords

rumination; happiness; subjective vitality

Introduction

In this paper, I start by explaining the concepts of rumination, subjective vitality and happiness, and continue with the presentation of the hypotheses of this research in relation to the study aim. Next, I present the methods of the study followed by the results. In the final section, I discuss the study findings in association with related literature.

Rumination

Rumination was firstly adverted theoretically in the Response Styles Theory (RST) by (Nolen-Hoeksema, 1991); she defined rumination as a manner of reaction to distress that involves continually and inactively focusing on indications of distress and on the probable conditions and results of these indications (Nolen-Hoeksema, 2008, p. 400). Rumination does not cause active problem solving to change conditions surrounding these indications. Watkins and Nolen-Hoeksema's (2014) theoretical work has proposed that unresolved goals produce rumination but also that pathological rumination is a mental habit- an automatic cognitive response conditioned to triggering stimuli such as low mood and what's more rumination deteriorates and sustains depression. Similarly, Watkins (2015) remarked that rumination is a major psychological risk factor for depression, and, hence, as a treatment target.

There are different forms of the ruminative thinking such as reflective and brooding rumination. Reflective thinking has adaptive construction, because it is a facility for problem solving. In other words, it can be a key for achievement. On the other hand, brooding thinking has maladaptive construction because it comprises repetitive unrealized beliefs (Treyner, Gonzalez & Nolen-Hoeksema, 2003). Reflective coping is related to the decrease in negative mood in the long process; however, the brooding coping both in the present and in the long process associated with the increase in negative mood (Armey et al., 2009; Treyner, Gonzalez & Nolen-Hoeksema, 2003).

Rumination is named in Self-focused Attention Theory (SFAT) as self-. Self-focused attention has been defined as "an awareness of self-referent, internally generated information that stands in contrast to an awareness of externally generated information derived through sensory receptors" (Ingram, 1990, p. 156). In this context, self-rumination is asserted as a threat for stability of self (Mori & Tanno, 2015). Self-rumination, in addition to rumination, includes negative beliefs of self, such as guiltiness, inferiority, indecency (Sarıçam, 2014). That is to say, people who have high self-rumination levels put the blame on self for negative circumstances, and then they feel as abject, wicked, hopelessness and etc. Previous studies indicated relationships between self-rumination and maladaptive constructions such as major depression (Mori & Tanno, 2015; Takano & Tanno, 2009), anxiety (Vassilopoulos, 2008), unhappiness (Elliott & Coker, 2008), low self-esteem (Joireman, Parrot, & Hammersla, 2002), and dysfunctional interpersonal relations (Lyubomirsky & Nolen-Hoeksema, 1995).

Subjective vitality

Subjective well-being focuses on developing as a person. It has two basic units: Psychological well-being (including feeling and thinking) and physical well-being (including vitality) (Sarıçam, 2015). The focus of the current study is on subjective vitality. Nix et al. (1999) defined subjective vitality as the positive feeling of having energy available to the self, is a phenomenologically salient and dynamic state. Subjective vitality is a determinant of mental positive energy (Fini, Kavousian, Beigy, & Emami, 2010), and it is necessary to bestir oneself willingly (Deci, 2001; Ryan & Frederick, 1997). In this view, subjective vitality is not only physical power but also psychological power to take action voluntarily. Subjective vitality reflects 'a sense of psychological and physical energy that is available to the self for life pursuits' (Ryan et al. 2008, p. 161). Subjective vitality differs from positive psychological constructs such as happiness, life satisfaction etc. happiness, life satisfaction. Although happiness has emotional ingredient, subjective vitality has physical and psy-

chological structures. Moreover, subjective vitality includes internal motivations, while happiness and life satisfaction depends on external stimulus.

Previous studies reported positive relationships between subjective vitality and constructions of positive psychology such as emotional well-being, social well-being, psychological well-being, self-esteem, perceived physical ability, self-actualization, positive affectivity, extraversion, conscientiousness, and physical self-presentation confidence (Fini et al., 2010; Ryan & Frederick, 1997), satisfaction with life (Ryan & Frederick, 1997; Salama-Younes, 2011; Uysal, S.A. Satici, B. Satici, & Akin, 2014), subjective happiness (Uysal, Satici, & Akin, 2013; Uysal et al., 2014), positive mental health (Salama-Younes, 2011), self-efficacy (Sarıçam, 2015) and authenticity (Göçet Tekin & Satici, 2014). On the other hand, subjective vitality was negatively associated with burnout (Sarıçam, 2015), psychological distress (Ryan & Frederick, 1997), depressive symptoms (Niemic, Lynch, Vansteenkiste et al. 2006) anxiety, negative affectivity, neuroticism, somatic distress, physical symptoms, physical pain, and external locus of control (Ryan & Frederick, 1997), internet addiction (Akin, 2012), Facebook® addiction (Uysal et al., 2013).

Happiness

What exactly is happiness? or How we can be happy? These questions have been interested by researchers for years. Therefore, there are various perspectives about the sources and determinants of happiness. In sociological view, Veenhoven (1991) defined happiness as “the degree to which an individual evaluates the overall quality of his life-as-a-whole positively”. In this view, he compared happiness to life satisfaction. In economic view, happiness is an outcome of welfare (Chekola, 2007; Feldman, 2008; Sacks, Stevenson, & Wolfers, 2010). In this view, happiness is associated with income. In philosophical view, Jeremy Bentham and Immanuel Kant stated that happiness is an output of morality. According to John Stuart Mill, happiness is a sense of high pleasure. St. Augustine declared happiness as a gift of God (Kenny, 2006).

Finally, in psychological view especially positive psychology, happiness is an emotion combined with other positive emotions, resulting in subjective well-being (Lyubomirsky, Sheldon, & Schkade, 2005). Also, Diener (2000) remarked that happiness is a positive emotion in subjective well-being. Seligman and fellow psychologist such as Edward B. Royzman categorized speculations of happiness into three approaches: (1) hedonism, which aspects happiness as experiencing positive subjective feelings; (2) desire approach, which aspects happiness as fulfilling subjective desires; and (3) objective list approach, which aspects happiness as achieving items from some objective list of worthwhile pursuits or things (Dolan & Metcalfe, 2012; Gable & Haidt, 2005).

Generally, it has been demonstrated that the higher happiness is associated with some positive psychological variables such as self-esteem (Lyubomirsky, Tkach, & Dimatteo, 2006), life satisfaction (Peterson, Park, & Seligman, 2005), hope (Sarıçam, 2015), forgiveness (Maltby, Day, & Barber, 2005), meaningfulness in life (García-Alandete, 2015; Kleftaras & Psarra, 2012; Sirgy & Wu, 2009), flourishing (Keyes, 2014). However, depression (Malekiha, Abedi, & Baghban, 2012), anxiety (Baroun, 2006), neuroticism (Brebner, Donaldson, Kirby, & Ward, 1995), intolerance of uncertainty (Sarıçam, 2014), perceived stress (Omidi, Akbari, & Mahdian, 2011) and other negative psychological variables decline happiness level. Furthermore happiness is related to some sociological elements such as income (Dluhosch, Horgos, & Zimmermann, 2014; Easterlin, (2001), gender (Easterlin, 2003, Yang, 2008), aging (Easterlin, 2003; Steverink, Westerhof, Bode, & Dittmann-Kohli, 2001), social disaster (Uchida, Takahashi, & Kawahara, 2014) and welfare (Sumner, 1996).

Present study

This study intends to examine the mediating and moderating role of subjective vitality between self-rumination and happiness. It sets out the inventive idea that ruminative thinking or beliefs may sometimes induce abnormal psychological problems such as depression, anxiety, worry, and therefore the rela-

tionship between subjective vitality and happiness would be mediated or moderated by rumination. There is remarkable research clarity in this area except for a few research studies (e.g., Wells, 1995). Previous studies have examined the relationship between rumination and psychological disorders such as depression (Abela & Hankin, 2011; Nolen-Hoeksema & Harrell, 2002; Watkins et al., 2007; Teismann et al., 2014), anxiety (Dar & Iqbal, 2015; Nolen-Hoeksema, 2000; Rood, Roelofs, Bogels, & Alloy, 2010; Verstraeten Bijttebier, Vasey, & Raes, 2011), worry (Dar & Iqbal, 2015; Watkins, Moulds, & Mackintosh, 2005; Watkins, 2004), uncertainty (Ward, Lyubomirsky, Sousa, & Nolen-Hoeksema, 2003), sadness and dysphoria (Conway, Mendelson, Giannopoulos, Csank, & Holm, 2004), neuroticism (Bagby & Parker, 2001), bulimia (Nolen-Hoeksema, Stice, Wade, & Bohon, 2007), alcoholism (Caselli et al., 2010; Spada & Wells, 2005; Spada, Zandvoort, & Wells, 2007), obsessive-compulsive symptoms (Dar & Iqbal, 2015; Wahl, Ertle, Bohne, Zurowski, & Kordon, 2011), post-traumatic stress disorder (Michael, Halligan, Clark, & Ehlers, 2007), hallucination-proneness (Jones & Fernyhough, 2007). However, the issue of how subjective vitality mediates between self-rumination and happiness has not been tested. There are no studies about links between these three variables.

The aim of this research is to examine the mediating role of subjective vitality between self-rumination and happiness. Based on above literature, the following hypothesis is developed for this study:

Hypothesis 1. Self-rumination will be negatively associated with subjective vitality.

Hypothesis 2. Subjective vitality will be positively associated with happiness.

Hypothesis 3. Self-rumination will decrease subjective vitality and this falling will affect negatively on happiness. This model is represented schematically in Figure 1.

Method

Participants

The current research was carried out with a sample of 440 university students, 230 of whom (52.27%) were females, 210 (47.73%) who were male students from different grade levels enrolled in different faculties of the Dumlupinar University in Turkey. The faculties of these students were Faculty of Education (n =148), Faculty of Fine Arts (n = 120), Faculty of Arts and Sciences (n = 56), and School of Physical Education and Sports (n = 116). Convenient sampling method was used, because all students take in pedagogical education course. Their ages ranged from 18 to 34 years with a mean age of 22.32 years.

Instruments

The Self-rumination Scale. Original form of Self-rumination Scale that was developed by Elliot and Coker (2008), it is a self-report measure of self-rumination levels. Scoring of the measure is based on a 6-point degrees type scale regarding the frequency with which the behavior of interest is exhibited where 1 = strongly disagree,

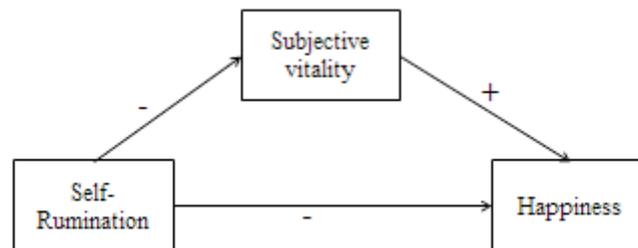


Figure 1. Hypothesized model of the relationships between self-rumination, subjective vitality and happiness.

Source: own work

6 = strongly disagree. Higher scores, therefore, indicate greater self-rumination (range = 1–60). It was adapted to Turkish culture by Sariçam and Akin (2015). Results confirmatory factor analyses demonstrated that 10 items yielded one factor as original form and that the one-dimensional model was well fit ($\chi^2 = 53.97$, $df = 31$, $p = 0.006$, RMSEA = 0.051, CFI = 0.99, GFI = 0.96, IFI = 0.99, NFI = 0.97, SRMR = 0.039). Factor loadings ranged from 0.44 to 0.78. Cronbach alpha internal consistency coefficient was found as 0.86. In the concurrent validity significant relationships ($r = 0.65$) were found between the Self-rumination Scale and Self-reflection Scale. Test retest reliability coefficient was 0.76. Corrected item-total correlations ranged from 0.35 to 0.69. In this study, Cronbach alpha internal consistency coefficient was found as 0.87.

Subjective Vitality Scale-SVS (Ryan & Frederick, 1997). SVS is a short instrument to measure vitality. A 7-point Likert scale was used ranging from “not at all” to (1) “very true” (7). The possible range of a score was from 7 to 49 with higher scores showing a more subjective vitality. Uysal, Sariçam, and Akin (2014) adapted to Turkish. Results confirmatory factor analyses demonstrated that 7 items yielded one-factor, as original form and that the one-dimensional model was well fit ($\chi^2 / df = 1.73$, RMSEA = 0.047, AGFI = 0.96, CFI = 1.00, GFI = 0.99, IFI = 1.00, NFI = 0.99, RFI = 0.97, and SRMR = 0.023). Factor loadings ranged from 0.29 to 0.86. In the concurrent validity significant positive relationship was found between subjective vitality and subjective happiness. Cronbach Alfa internal consistency coefficient was found as 0.84 for scale. Moreover, test-retest reliability coefficient was 0.79 and corrected item-total correlations ranged from 0.48 to 0.74. In this study, Cronbach alpha internal consistency coefficient was found as 0.87.

Short Form of the Oxford Happiness Questionnaire. Happiness was measured by using the Short Form of Oxford Happiness Questionnaire (Hills & Argyle, 2002). Doğan and Akinci Çötök (2011) had done Turkish adaptation of this scale. The scale consists of eight items (e.g., I am well

satisfied about everything in my life), and each item was presented on a seven-point Likert scale (1 = strongly disagree, 6 = strongly agree). The total scores ranged from 8 to 48, with a higher score indicating higher happiness. The goodness of fit index values of the model were [$\chi^2 / df = 2.77$, $p = 0.49$ AGFI = 0.97 NFI = 0.92, CFI = 0.95, IFI = 0.95; GFI = 0.93, RMSEA = 0.074, SRMR = 0.044]. The OHQ-SF’s internal consistency coefficient and test-retest reliability coefficient were determined to be 0.74 and 0.85, respectively. In this study, Cronbach alpha internal consistency coefficient was found as 0.83.

Procedure

Permission for participation of the students was obtained from managing course. Students participated in the research voluntarily. Prior to the administration of the scales, all participants were declared about aims of the research. Participants completed the scales in approximately 25 minutes. Relationships between three variables (self-rumination, subjective vitality, and happiness) were tested using the Pearson Product Moment Correlation Coefficient and hierarchical regression analysis at 0.01 probability level, because data provided criteria of normality. Hierarchical regression analysis was utilized in addition to checking out the relationship between rumination and happiness. These checks were examined via mediation and moderation analysis.

Results

Inter-correlations and Descriptive Data

Table 1 shows the inter-correlations of the variables, means, standard deviations, and internal consistency coefficients of the variables used.

Table 1 show that there are significant correlations between self-rumination, subjective vitality, and happiness. Subjective vitality ($r = -0.56$) and happiness ($r = -0.57$) related negatively to rumination. Moreover, subjective vitality ($r = 0.72$) was found positively associated with happiness.

TABLE 1
Descriptive statistics, alphas, and inter correlations of the variables

Variables	1	2	3	Mean	SD	Skewness	Kurtosis
1. Self-rumination	1			39.82	11.15	-0.23	-0.58
2. Subjective vitality	-0.56**	1		21.11	9.05	0.46	0.25
3. Happiness	-0.57**	0.72**	1	19.36	9.32	0.49	0.51

** $p < 0.01$.

Source: own work

Testing the Mediating Role of Subjective Vitality in the Relation between Self-rumination and Happiness

The mediation model presents a clarification for how, or why, two variables are related, where an interceding or mediating variable, M, is hypothesized to be mediate in the relationship between an independent variable, X, and a conclusion, Y (MacKinnon, 2008) (See Figure 2).

First step of the mediation formula, it was proved that self-rumination and happiness (de-

pendent variable) were negatively related ($\beta = -0.57, t = 14.47, p < 0.001$). The results are shown in Table 2.

Following the steps of the mediation formula, second, it was proved that self-rumination and subjective vitality (dependent variable) were negatively related ($\beta = -0.45, t = 14.07, p < 0.001$). The results are shown in Table 3.

Then it was proved that subjective vitality and subjective happiness were positively related ($\beta = 0.72, t = 21.52, p < 0.01$). These results are shown in Table 4.

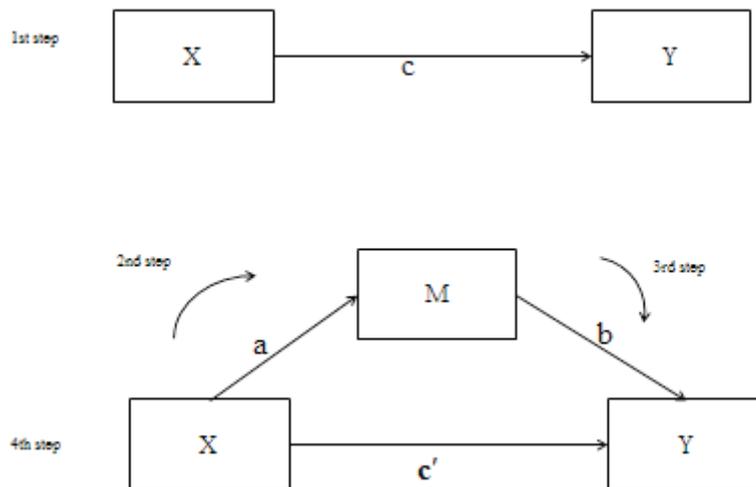


Figure 2. Research design and procedure for the single-mediator model (MacKinnon, 2008)

Note. X = the independent variable, Y = the dependent variable, and M = the mediating variable. The mediation model dissociates the total effect of X on Y (c), into two parts: the indirect effect of X on Y, counted by ab (the product of a and b), and the direct effect of X on Y with the effect of the mediator removed, counted by c' . $c = ab + c'$

Source: own work

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Table 2
Self-rumination and happiness

Variables	Unstandardized Coefficients		Standardized Coefficients		R	R ²	F
	B	SE _B	β	t			
Self-rumination	-0.47	0.033	-0.57	-14.47*	0.57	0.32	209.27*

**p* < 0.001.

Source: own work

Table 3
Self-rumination and subjective vitality

Variables	Unstandardized Coefficients		Standardized Coefficients		R	R ²	F
	B	SE _B	β	t			
Subjective vitality	-0.45	0.032	-0.56	14.07*	0.56	0.31	198.03*

**p* < 0.001.

Source: own work

Table 4
Subjective vitality and happiness

Variables	Unstandardized Coefficients		Standardized Coefficients		R	R ²	F
	B	SE _B	β	t			
Subjective vitality	0.74	0.034	0.72	21.52*	0.72	0.51	463.03*

**p* < 0.001.

Source: own work

For the last of the mediation formula, hierarchical regression analysis was applied to assess which variables were the best predictors of happiness. Table 5 showed the results of multiple regression analysis where the independent variables were self-rumination and subjective vitality scores; and the dependent variable was happiness. Self-rumination entered the equation first, accounting for 32% of the variance in predicting happiness. Subjective vitality entered on the second step accounting for an additional 23% of the variance. This means that self-rumination and subjective vitality explain 55% of the variance in predicting happiness. The standardized beta coefficients indicated the relative influence of the variables in the last model with self-rumination and subjective vitality statistically

significantly related to happiness, and subjective vitality was strongest predictor of happiness.

The outcomes of the hierarchical regression analysis demonstrated that self-rumination was negatively associated with happiness ($\beta = -0.57, t = -14.47, p = 0.000$). However, when self-rumination and subjective vitality were taken together in the regression analysis, the significance of the relationship between self-rumination and happiness ($\beta = -0.24, t = 6.37, p = 0.000$) decreased, yet the relationship between self-rumination and happiness was significant. According to Kenny, Korchmaros, and Bolger (2003), this result indicated a partial mediation. Hence, it can be asserted that subjective vitality partially explains the relation between self-rumination and happiness.

Table 5
 Mediation of subjective vitality in relation between self-rumination and happiness: Hierarchical regression analysis with dependent variable happiness

Variables	Unstandardized Coefficients		Standardized Coefficients		R	R ²	F
	B	SE _B	β	t			
Step1 Self-rumination	-0.47	0.033	-0.57	-14.47*	0.57	0.32	209.27*
Step2 Self-rumination	-0.20	0.032	-0.24	-6.37*	0.74	0.55	272.70*
Subjective vitality	0.60	0.040	0.58	15.09*			

*p < 0.001.

Source: own work

Moreover, the findings of the hierarchical regression analysis which tested the mediation effects of subjective vitality in link between self-rumination and happiness are showed in Figure 3. As presented in Figure 3, the beta weight when self-rumination was predicted alone on happiness was -0.57. The beta weight dropped from -0.57 to -0.24 when subjective vitality was added into the equation.

The present model was tested using the Sobel z test. The purpose of this test is to verify whether a mediator carries the influence of an interdependent variable to a dependent variable. The Sobel z test is characterized as being a restrictive test, and as such, assures that the verified results are not derived from collinearity issues. In the current study, the test value verified was $Z = 11.81153803$; $p = 0.000$.

Moderator Role of Subjective Vitality in the Link between Rumination and Happiness

The moderation model tests whether the prediction of a dependent variable, Y, from an independent variable, X, differs across levels of a third variable, Z (See Figure 4). Moderator variables affect the strength and/or direction of the relation between a predictor and an outcome: enhancing, reducing, or changing the influence of the predictor (Aiken & West, 1991).

Following the steps of the moderating procedure, hierarchical regression procedures were implemented as suggested by Hayes (2013) and Jose (2013). At Step 1 and Step 2, the predictor (self-rumination) and moderator (subjective vitality)

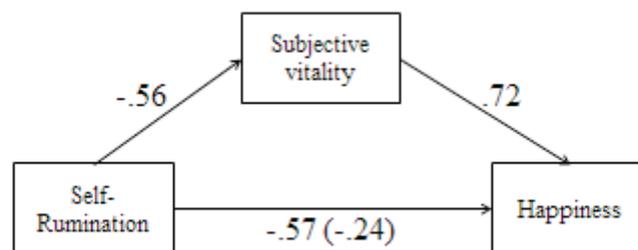


Figure 3. Mediator role of subjective vitality in the link between self-rumination and happiness

Source: own work

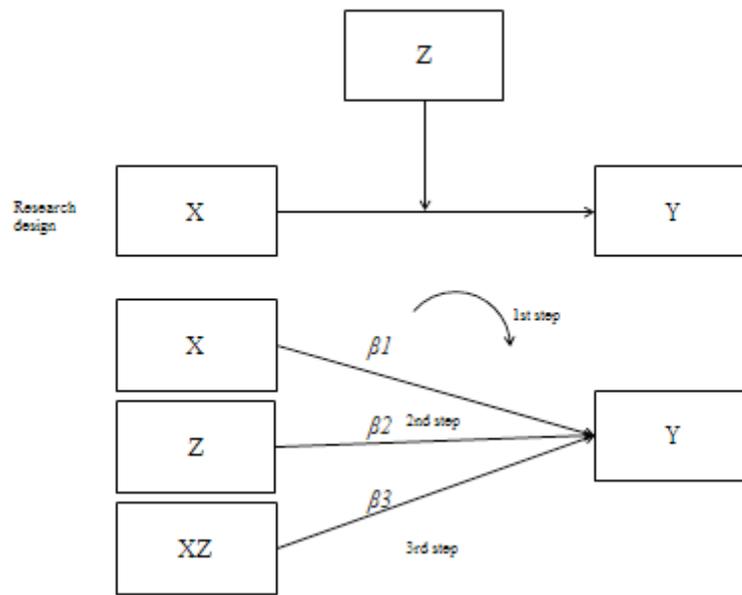


Figure 4. Research design and procedure of the moderation model.

Note. X = the independent variable, Y = the dependent variable, Z = the moderator variable, XZ = the product of X and the moderator variable, β_1 = the effect of X on Y, β_2 = the effect of Z on Y, and β_3 = the effect of XZ on Y.

Source: own work

variables were put consecutively into the regression equations. In Step 3, the interactions of subjective vitality multiplied by self-rumination were added. A significant changing in R^2 for the coaction term points a significant moderator effect. The results of the final regression model are showed in Table 6.

According to the results of the hierarchical regression analysis, summarized in Table 6, self-rumination ($\beta = -0.57, p < 0.01$) and subjective vitality ($\beta = 0.72, p < 0.01$) were significant predictors of happiness. In this model, lower self-rumination and higher subjective vitality were related to greater happiness. Moreover, there was statistical significant link between self-rumination and subjective vitality, because R^2 explain 11% of the variance in predicting happiness ($\beta = 0.11, p < 0.05$). These findings remarked that subjective vitality had moderating effect on the link between self-rumination and happiness.

Discussion

In this study, mediation and moderation model with self-rumination and subjective vitality was tested in

order to explain happiness among university students. Findings assure that there are relationships among self-rumination, subjective vitality and happiness. Based on mediation and moderation procedure, it was concluded that happiness is decreased as a result of self-rumination; self-rumination have decreased level of subjective vitality, and a lower level of subjective vitality causes unhappiness.

In first hypothesis, self-rumination will have predicted negatively to subjective vitality. In the current study, the negative relation between rumination and subjective vitality was found. No other studies have examined the relation between self-rumination and subjective vitality directly. However, Bez et al. (2013) suggested that obsessive compulsive symptoms decrease quality of life. Aydin (1997) mentioned that negative automatic thoughts induce illness. Harrington and Loffredo (2010) stressed the negative relation between rumination and autonomy. Similarly, Metin (2011) enunciated that rumination has negative effect on authenticity. Moreover, authentic living is associated with subjective vitality (Göçet Tekin & Satici,

2014). Therefore, and based on the results of the present study, it seems that if people can enhance their subjective vitality, their self-rumination levels may decrease, or vice versa.

In second hypothesis, subjective vitality will have positively related to happiness. As these studies have indicated, subjective vitality is positively pertinent to emotional well-being, social well-being, psychological well-being (Ryan & Frederick, 1997; Salama-Younes, 2011). Moreover, in previous research there are direct positive link between subjective vitality and subjective happiness (Uysal et al., 2014; Uysal et al., 2013). In present study, subjective vitality has positive link with happiness. Thence, the findings are consistent with the previous studies mentioned above.

In final hypothesis, self-rumination will have decreased subjective vitality and this reduction will have affected negatively on happiness. Brown and Ryan (2003) claimed that mindfulness increases psychological well-being. Elliot and Coker (2008), Tsai, Chang, Sanna, & Herringshaw (2011) revealed that the relationship between rumination and happiness, but no study adverted why rumination affect happiness. Therefore, this study's results are important. The current study addressed the mediating and moderating role of subjective vitality on the relationship between self-rumination and happiness. In other words, subjective vitality not only helps people feel more happiness, but it helps them cope with self-rumination more effectively.

This study has some limitations which should be considered when interpreting the results. First, the sampling procedure is not random; it is the convenient sample. Thus, the generalizability of the results is limited. The second limitation is related to the participants, because the sample presented here is limited to university students in Education Faculty.

In conclusion, this research reports that rumination occurs to a drop of subjective vitality on an unhappy person, besides decrease in subjective vitality leads to unhappiness; therefore, rumination also takes unhappiness. Students high in rumination are more likely to experience low subjective vitality and happiness. That is why, progressing study would

further my understanding of the major predictors of happiness, without neglecting that more research is needed to examine the premises of the rumination and subjective vitality.

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