



Subjective Vitality as Mediator and Moderator of the Relationship between Life Satisfaction and Subjective Happiness

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Abstract

In this study, the mediator and moderator effects of subjective vitality on the relationship between life satisfaction and subjective happiness were investigated. The participants were 378 university students who completed a questionnaire package that included the Subjective Vitality Scale, the Satisfaction with Life Scale, and the Subjective Happiness Scale. The results of hierarchical regression analysis demonstrated that subjective vitality partially mediated the relationship between life satisfaction and subjective happiness. Hierarchical regression analysis indicated that subjective vitality did not moderate the relationship between life satisfaction and subjective happiness.

Key Words

Life Satisfaction, Mediator, Moderator, Subjective Happiness, Subjective Vitality.

Researches on psychological constructs have a tendency to focus on the possible effects of negative emotions on personal behaviors and interpersonal relationships (Greenglass, 2006). On the other hand, in recent years psychological research has tended to become more interested in positive feelings and the emotions of well-being (Van Hoorn, 2007). According to Seligman and Csikszentmihalyi (2000), positive individual traits and adaptive

constructs, human strengths, and virtues such as subjective happiness, hope, optimism, and courage are very important for improving one's quality of life and preventing psychological problems.

Subjective happiness can be accepted as one of the basic parts of positive psychology (Diener, Lucas, & Oishi, 2002). It is also one of the most important aims of people in Western cultures who want to shape their lives in a way more enjoyable for

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them (Veenhoven, 1994). Happiness can be defined in many ways. According to Aristotle, happiness means “flourishing human living, a kind of living that is active, inclusive of all that has intrinsic value and complete, meaning lacking in nothing that would make it richer or better” (Nussbaum, 2005, p. 171). In psychological literature happiness is defined as a psychological state of well-being, joy, and contentment (Lyubomirsky, 2001; Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006).

Researches have remarked on the importance of subjective processes in happiness. Because of the question of why some people define themselves as happy in spite of personal problems, challenges, disadvantages, distress or lack of any great love or wealth, while others believe that they are unhappy despite having life’s comforts and advantages (Doman, 2010; Lyubomirsky & Lepper, 1999), subjective happiness has been evaluated as a popular concept in positive psychology and viewed as a substantial part of human life (Lyubomirsky, 2001). Additionally subjective happiness as a significant construct related to positive psychological states and well-being can be defined as a subjective assessment of whether one is a happy or an unhappy person (Lyubomirsky & Lepper, 1999).

Studies have demonstrated that subjective happiness is positively related to the self-perceptions of well-being, perceived quality of life (Diener, 2000; Suh, Diener, Oishi, & Triandis, 1998), physical health, social participation (Yoshiakhi et al., 2003), satisfying relationships, positive emotions (Diener & Seligman, 2002), emotional intelligence (Extremera, Duran, & Rey, 2005), feeling more personal control (Larson, 1989), self-esteem (Shimai, Otake, Utsuki, Ikemi, & Lyubomirsky, 2004), and self-enhancing biases (Lee & Im, 2007). On the contrary, subjective happiness has been found to relate negatively to the presence of depressive symptoms (Chaplin, 2006), perceived stress (Piqueras, Kuhne, Vera-Villarrol, Van-Straten, & Cuijpers, 2011) and internet addiction (Akin, 2012).

Life Satisfaction

Previous research has indicated that subjective well-being which can be described as an individual’s experience with the positive qualities in their life, has two distinct constructs. The first one is an emotional component usually characterized by the presence of positive affect and the absence of negative affect (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993; Salama-Younes, 2011;

Suldo & Huebner, 2006). The second construct is a cognitive component related to a high level of life satisfaction or perceived quality of life (Andrews & Withey, 1976).

Suldo and Huebner (2004, p. 180) defined life satisfaction as “a cognitive, global appraisal that people make when considering their contentment with life as a whole or in regard to specific domains of life such as family, environment, friends, and self.” According to Shin and Johnson (1978, p. 478), life satisfaction is “a global assessment of a person’s quality of life according to his chosen criteria.” A person can say he has high life satisfaction when he compares his perceived life standards with a self-imposed standard or set of standards (Pavot & Diener, 1993). Therefore, the perception of satisfaction is related to the comparison of one’s circumstances with an appropriate standard that he wants to reach (Diener et al., 1985).

Studies have demonstrated that life satisfaction is positively related to mood clarity (Extremera, Duran, & Rey, 2009), self-esteem (Shek, 2005), perceived social support (Edwards & Lopez, 2006), parental support (Suldo & Huebner, 2006), marital adjustment (Çelik & Tümkaya, 2012), religious beliefs, optimism (Acun-Kapıkıran, 2012; Türküm, 2005), positive affectation (Busseri, Sadava, & Decourville, 2007), self-compassion (Deniz, Arslan, Özyeşil, & İzmirli, 2012), self-esteem (Taysi, 2000), and openness (Sheldon & Hoon, 2007). On the other hand, there are negative correlations between life satisfaction and maladaptive constructs such as perceived stress, loneliness (Goodwin, Cook, & Yung, 2001), emotional loneliness (Salimi, 2011) submissive attitudes, automatic thoughts, hopelessness (Tümkaya, Çelik, & Aybek, 2011), negative affectation (Deniz et al., 2012), and neurocriticism (Judge, Locke, Durham, & Kluger, 1998).

Subjective Vitality as Mediator and Moderator

The origin of the concept of vitality is based on the self-determination theory (Deci & Ryan, 2000; Ryan & Deci, 2000) and has been defined as “energy that is perceived to emanate from the self” (Ryan & Frederick, 1997, p. 535). A positive feeling of having energy available to the self (Nix, Ryan, Manly, & Decy, 1999) may be seen “as reflecting a person’s being (as) fully functioning and self-realized” (Green-glass, 2006, p. 66).

The concept of vitality is named differently in some other cultures. For example, the Chinese concepts of “chi” and “jing” as the feeling of being full of in-

ternal energy that is the source of life (Jou, 1981; Liao, 1990 as cited in Ryan & Frederick, 1997) can be more or less reached by individuals according to their life styles (Nix et al., 1999). Similarly in Japan, the concept of "Ki" refers to the energy and power that one can use to awake mental and physical health (Ryan & Frederick, 1997). Subjective vitality is the state of feeling alive, of having positive emotions (Greenglass, 2006). It is considered to be an aspect of emotional and physical well-being (Salama-Younes, 2011) and is derived from an internal source (Bostic, Rubio, & Hood, 2000).

Early research demonstrated that subjective vitality is positively related to emotional well-being, social well-being, psychological well-being, and satisfaction with life (e.g., Ryan & Frederick, 1997; Salama-Younes, 2011). Subjective vitality is a "positive feeling of aliveness and energy" (Ryan & Frederick, 1997) and this psychological energy is available to an individual who reflects a psychological and social well-being (Niemic et al., 2006). Stewart, Hays, and Ware (1992) studied the subjective feelings of energy and showed their positive relations to mental health. Moreover, subjective vitality is positively associated with subjective happiness (Akin, 2012). Akin (2012), also demonstrated that subjective vitality partially mediates the relationship between Internet addiction and subjective happiness. Similarly, life satisfaction is positively related to some positive psychological traits like self-efficacy (Suldo & Huebner, 2006), self-esteem, and hope (Gilman & Huebner, 2003). Subjective vitality is negatively related to depressive symptoms and anxiety (Niemic et al., 2006). Similarly, life satisfaction and subjective happiness are negatively related to depressive symptoms (Chaplin, 2006) and anxiety (Gilman & Huebner, 2003). Studies also indicate that psychological well-being, life skills and life satisfaction are respectively the best predictors of subjective vitality (Fini, Kavousian, Begy, & Emami 2010).

Considering the studies demonstrating the relationships of subjective vitality, life satisfaction, and subjective happiness, it seems possible that subjective vitality, which represents a significant indicator of personal well-being (Ryan & Frederick, 1997), may enhance the experiences of life satisfaction and subjective happiness. Thus, the main purpose of this study is to investigate whether subjective vitality plays moderating and/or mediating roles in the relationship between subjective happiness and life satisfaction. In other words, our aim is to find how subjective vitality relates to subjective happiness and life satisfaction. In the mediation model, it was examined whether the

effects of subjective vitality act as a mediator between subjective happiness and life satisfaction. Subjective vitality may also serve a "buffer" role (Frazier, Tix, & Barron, 2004), acting as a moderator to increase the positive effect of subjective happiness on life satisfaction. Hence, in the moderation model of this study, it was predicted that the relationship between the subjective happiness and life satisfaction of those with high subjective vitality would be less compared to those with low subjective vitality.

Method

Participants

The participants consisted of 378 university students [222 (59%) of whom were female, and 156 (41%) of whom were male] enrolled in various undergraduate programs at a mid-size state university in Turkey. Of the participants, 106 (28%) were freshman, 98 (26%) were sophomores, 83 (22%) were juniors, and 91 (24%) were seniors. Their ages ranged from 18 to 24 (20.36 ± 1.5). Convenience sampling, which is a non-probability sampling technique in which participants are selected because of their advantageous accessibility and nearness to the researcher (Bryman, 2004), was used in the selection of participants. For this reason, the results of this study did not make any inference from the population, which led to a decrease in external validity.

Measures

Subjective Happiness Scale (Lyubomirsky & Lepper, 1999): This scale consisted of four items (e.g., I think I am a happy person) and each item was presented on a 7-point Likert (1= very unhappy - 7= very happy) scale. Therefore, a total score ranging from 4 to 28 was possible, with a higher score indicating a higher subjective happiness. The Cronbach alpha coefficient of the scale was .86 and the test-retest reliability coefficient was .72 from its original form. The Turkish adaptation of this scale was performed by Akin and Satıcı (2011). The results of confirmatory factor analysis indicated that the model was well fitted (RMSEA= .000, NFI=.99, CFI=1.00, IFI=1.00, RFI=.98, GFI=1.00, AGFI=.99 and SRMR=.015). The internal consistency reliability coefficient of the scale was found to be .86 and the test-retest reliability coefficient was found to be .73 for Turkish version.

Satisfaction with Life Scale [(SWLS) Diener et al., 1985]: This scale, consisting of five items (e.g., I am satisfied with my life), was of the 7-point Likert

type scale ranging from 1 = strongly disagree to 7 = strongly agree. A total score ranging from 5 to 35 was possible, with a higher score indicating a higher life satisfaction level. The Turkish adaptation of this scale was performed by Durak, Senol-Durak, and Gencoz (2010). They found the internal consistency coefficient to be .81. SWLS was positively correlated with self-esteem, positive affection, perceived social support from family, perceived social support from friends, and perceived social support from significant others. It also found that SWLS was negatively correlated with negative affection and depression. The results of the confirmatory factor analysis indicated that the model was well fitted ($\chi^2/d(f) = 2.026$, $IFI = .994$, $TLI = .987$, $CFI = .994$, $SRMR = .020$, and $RMSEA = .043$).

Subjective Vitality Scale (Ryan & Frederick, 1997): This scale consisted of 7 items (e.g., I nearly always feel awake and alert) and each item's scale ranged from 1 (not at all true) to 7 (very true). The possible range of a score was from 7 to 49 with higher scores indicating a more subjective vitality. Turkish adaptation of this scale was performed by Akin, Satici, Arslan, Akin, and Kayis (2012). The results of confirmatory factor analysis indicated that the model was well fitted ($RMSEA=.047$, $NFI=.99$, $CFI=1.00$, $IFI=1.00$, $RFI=1.00$, $GFI=.99$, and $AGFI=.96$). The Cronbach alpha value of the scale was .84. The corrected item-total correlations of the scale ranged from .48 to .74 for the Turkish version.

Procedure and Data Analysis

Participants voluntarily participated and were not forced to fill out the questionnaires. Completion of the questionnaires was anonymous with a guarantee of confidentiality. They also did not write their names on the instruments. The instruments were administered to the students in a classroom environment. The measures were counterbalanced by administration. All participants were informed by the researchers about the aims of the study before the measures were administered. Participants completed the instruments in approximately 25 minutes.

The Pearson correlation coefficient and hierarchical regression analyses were used to establish the rela-

tionships among these variables. The recommendations from Baron and Kenny's (1986) study were conformed to this study in order to test whether subjective vitality mediated the link between life satisfaction and subjective happiness in the hierarchical regression analyses. In accordance with their recommendations, a significant relationship between the independent variable and the hypothesized mediating variable is firstly required. Secondly, a significant relationship between the hypothesized mediating variable and the dependent variable is required. Thirdly, a significant relationship between the independent variable and the dependent variable is needed. Finally, the coefficient relating the independent variable to the dependent variable must be larger (in absolute value) than the coefficient which relates the independent variable to the dependent variable in the regression model, with both the independent variable and the mediating variable predicting the dependent variable. IBM SPSS Statistics 20 was applied in order to conduct these analyses.

Results

Descriptive Data and Inter-correlations

Table 1 shows the means, descriptive statistics, and inter-correlations of the variables used.

When Table 1 is examined, the correlational analysis revealed significant relationships between the research variables. Subjective happiness was significantly related with subjective vitality and life satisfaction ($r= .58$ and $r= .42$, respectively). Furthermore, subjective vitality was positively relate with life satisfaction ($r=.45$, $p< .01$).

Testing the Mediating Role of Subjective Vitality in the Relationship between Life Satisfaction and Subjective Happiness

In order to test the mediating effects of subjective vitality on the relationships between life satisfaction and subjective happiness, it was first verified that life satisfaction and subjective vitality were positively related ($\beta=.45$, $t= 9.79$, $p<.01$). The results are shown in Table 2.

Table 1.
Descriptive Statistics and Inter-correlations of the Variables

Variables	Subjective happiness	Subjective vitality	Life satisfaction	Mean	SD	Skewness	Kurtosis
Subjective happiness	1.00			19.41	4.05	-.17	.26
Subjective vitality	.58**	1.00		33.89	7.60	-.28	-.11
Life satisfaction	.42**	.45**	1.00	16.36	3.55	-.26	.46

** $p < .01$

Table 2.
Life Satisfaction and Subjective Vitality

Variable	B	SE _B	β	t
Life satisfaction	.96	.09	.45	9.79**

Dependent Variable: Subjective vitality
Note: R²=.20, Adjusted R²=.20 (**p<.01)

Then it was verified that subjective vitality and subjective happiness were positively related (β= .58, t= 13.759, p<.01). These results are presented in Table 3.

Table 3.
Subjective Vitality and Subjective Happiness

Variable	B	SE _B	β	t
Subjective vitality	.31	.02	.58	13.76**

Dependent Variable: Subjective happiness
Note: R²=.19, Adjusted R²=.19 (**p<.01)

Hierarchical regression analysis was used to test the last steps of the mediation procedure. The results of the hierarchical regression analysis propounded that subjective happiness was positively related with life satisfaction (β= .42, t= 9.10, p<.01). Besides, when life satisfaction and subjective vitality were taken together in the regression analysis, the significance of the relationship between life satisfaction and subjective happiness (β= .20, t= 4.48, p<.01) decreased, yet the relationship between life satisfaction and subjective happiness was still significant. Baron and Kenny (1986) remarked that this result states a partial mediation. Thus, it can be said that subjective vitality partially mediates the relationship between life satisfaction and subjective happiness. These results are presented in Table 4.

In addition, the results of the regression analyses which tested the mediation effects of subjective vitality on the relationship between life satisfaction and subjective happiness are presented in Fig. 1. As shown in Fig. 1, the beta weight when life satisfaction was regressed alone on subjective happiness was .42. The beta weight dropped from .42 to .20 when subjective vitality was added into the equation.

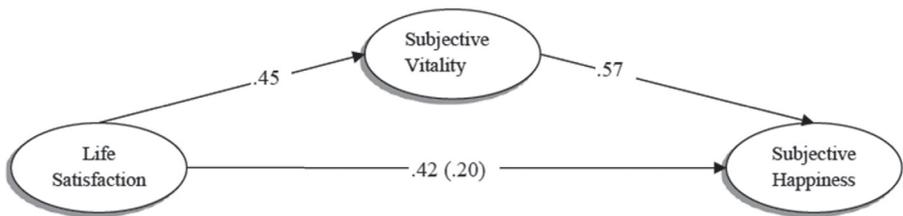


Figure 1.
Examining Whether Subjective Vitality Significantly Mediates the Association of Life Satisfaction and Subjective Happiness

Note. The coefficient in parentheses for all models represents the association of life satisfaction with subjective happiness when subjective vitality is included in the model.

Table 4.
Testing the Mediation Role of Subjective Vitality in the Relationship Between Life Satisfaction and Subjective Happiness

Variable	B	SE _B	β	t
Step 1				
Life satisfaction	.48	.05	.42	9.11**
Step 2				
Life satisfaction	.23	.05	.20	4.49**
Subjective vitality	.26	.02	.49	10.57**

Dependent Variable: subjective happiness
Note: R²=.18, Adjusted R²=.18 (p<.05) for Step 1; R²=.36, ΔR²=.18, Adjusted R²=.36 (p<.05) for Step 2. (**p<.01)

The Sobel z-test (1982) was performed to test the present model. The intention of this test was to confirm 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 so, assures that the verified results are not derived from co-linearity issues. In the present study, the test value was verified to be Z= 7.13343717; p<.01.

Testing the Moderating Role of Subjective Vitality in the Relationship Between Life Satisfaction and Subjective Happiness

Following the steps of the moderating procedure, hierarchical regression procedures were performed as recommended by Baron and Kenny (1986). First a composite score of all variables was created by summing the standardized scores. After, in the hierarchical regression model, the order of entry was as follows. At Step 1 and Step 2, the predictor (life satisfaction) and moderator (subjective vitality) variables were entered sequentially into the regression equations. In Step 3, the interactions of subjective vitality multiplied by global life satisfaction were added. A significant change in R² for the interaction term indicates a significant moderator effect. The results of the final regression model are presented in Table 5.

Table 5.
Testing the Moderating Role of Subjective Vitality in the Relationship Between Life Satisfaction and Subjective Happiness

Variable	B	SE _B	β	R ²	R ² change	F change
Step 1						
Life Satisfaction (LifeS)	.48	.05	.42	.18	.18	82.93**
Step 2						
Subjective vitality (SubjV)	.26	.02	.49	.37	.188	111.72**
Step 3						
LifeS X SubjV	-.01	.01	-.58	.37	.006	3.70

Dependent Variable: Subjective happiness, Note: ** $p < .01$

According to the results of the hierarchical regression analysis, summarized in Table 5, life satisfaction ($\beta = .42, p < .01$) and subjective vitality ($\beta = .48, p < .01$) were significant predictors of subjective happiness. In this model, higher life satisfaction and higher subjective vitality were associated with greater subjective happiness. However, there was no significant interaction between life satisfaction and subjective vitality ($\beta = -.58, p > .05$). These findings indicated that subjective vitality had no moderating effect on the relationship between life satisfaction and subjective happiness.

Discussion

The goals of this study were to examine the mediator and moderator roles of subjective vitality on the relationship between subjective happiness and life satisfaction. In this study, as expected, the results indicated that subjective vitality partially mediated the association between subjective happiness and life satisfaction. In other words, as life satisfaction increases so does subjective happiness increase, and subjective vitality plays a mediating role in this increase. This result is important for several reasons. The study extends what is known about subjective vitality, a relatively new construct, and its mediator effects on subjective happiness and life satisfaction.

Fini et al. (2010) indicated that there is a high correlation between psychological well-being, life satisfaction, and subjective vitality. Although studies have suggested that subjective vitality may affect subjective well-being, satisfaction with life, positive affectation (Ryan & Frederick, 1997), social, emotional and psychological well-being, and subjective happiness positively (Akin, 2012), no research has addressed the factors that might mediate these relationships. In other words, subjective vitality literature is unclear about how subjective vitality increases subjective happiness and life satisfaction. The results of this study are particularly interesting

because it suggested that subjective vitality influences subjective happiness through life satisfaction. Examination of both of these relationships provided insight into what may be needed to increase subjective vitality that is essential to well-being. In addition, subjective vitality is a positive feeling of aliveness and energy (Ryan & Frederick, 1997) and this energy represents psychological and social well-being and enhances the behaviors that promote one's quality of life (Niemeck et al., 2006). Individuals that experience a high level of life satisfaction can be said to possess energy, enthusiasm and aliveness. Thus, it can be pointed out that life satisfaction effects subjective happiness more positively with the help of subjective vitality.

In terms of the role of moderator, the results did not support subjective vitality as a moderator between subjective happiness and life satisfaction. Subjective vitality did not buffer (Frazier et al., 2004) the relationship between subjective happiness and life satisfaction. That is, it can be stated that subjective vitality does not have a preventive function over the subjective happiness and life satisfaction of an individual. Tuzgöl-Dost (2007) observed that perceived academic achievement, perceived economic status, expectation for the future, and religious belief are the significant predictors of life satisfaction in university students. In a study by Gündoğar, Sallar-Gül, Uskun, Demirci, and Keçeci (2007) on university student's, job expectations and satisfaction with education were found to be the strong predictors of life satisfaction. Consistently, Chow (2005) indicated that life satisfaction is markedly related to a higher social economic status and a higher grade point average. Therefore, structures such as religious beliefs, social economic status, and GPA, which predict life satisfaction more in university students, may have a stronger role than subjective vitality.

As expected, the results of the correlation analysis in this study showed that subjective happiness, a state of feeling regarded as pleasure or satisfaction, has a relationship with subjective vitality and life satisfaction. These results are consistent with earlier studies reporting a positive relationship among subjective happiness, life satisfaction (Diener, 2000; Suh et al., 1998), and subjective vitality (Akin, 2012).

This study also has some limitations, one being that since the sample presented here is limited to university students, it restricts the ability to generalize the findings. For that reason, it is also important to investigate the relationship of these variables in other sample groups. Secondly, as co-relational statistics were utilized, no definitive statements can be made about causality. Further studies would be

important for gaining an understanding of directionality. Thirdly, the data in this study regarding subjective vitality, subjective happiness and life satisfaction, were collected through self-reported data. To use different methods such as surveys and/or observations may be helpful in decreasing the limitation of subjectivity of the results.

In conclusion, despite these limitations, there are contributions from this study. The present study investigated the role and effect of subjective vitality as a mediator and moderator between life satisfaction and subjective vitality. The results indicated that subjective vitality plays an important role as a mediator, but not as a moderator, for the relationship between life satisfaction and subjective happiness. In addition, the findings showed that subjective happiness is related to life satisfaction and subjective vitality. Additionally this study presents an empirical framework for researchers by examining the relationships among subjective vitality, life satisfaction and subjective happiness which are positive indicators of mental health. Finally, this study suggests that mental health professionals can recommend subjective vitality improvement programs to help university students increase life satisfaction and subjective happiness.

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