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The effect of perceived stress on life satisfaction : The mediating effect of self-efficacy

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Abstract

Lazarus and Folkman's theory of cognitive appraisal of coping inspired the present study to test a mediation model examining the effects of self-efficacy on the relationship between perceived stress and life satisfaction. A total of 282 Korean undergraduate students participated in the present study. Perceived Stress Scale, the Satisfaction with Life Scale, and the Self Efficacy Scale were used for this study. A series of hierarchical regressions investigated the mediating effect of self-efficacy on the relationship between perceived stress and life satisfaction.

Results indicated that there was a partial mediation effect of self-efficacy on the relation between perceived stress and life satisfaction. The results supported the mediation of secondary cognitive appraisal (i.e., self-efficacy) on the relationship between primary cognitive appraisal (i.e., perceived stress) and life satisfaction among South Korean college students. Implications of the present study and future research suggestions are discussed.

Keywords

Perceived stress; self-efficacy; life satisfaction

I. Introduction

Stress is part of our everyday lives but people tend to experience a higher level of stress during major life changes. Entering college is a stressful time period when a major life transition into adulthood occurs as young adults begin to increase their independence by moving out of their parents' home and becoming more responsible for their own schedule (Darling et al., 2007). The college years are also a time when individuals are exposed to chronic stress related to new life circumstances (Towbes and Cohen, 1996). When stress related to the transition to college life is inadequately managed, individuals may experience adjustment difficulties and as a result, their life satisfaction can be diminished. However, not

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everyone who is exposed to this life transition experiences adjustment difficulties or experiences life dissatisfaction. Many individuals learn to adapt to life transitions successfully while maintaining high levels of life satisfaction despite the increased stress level. What makes those individuals more resilient to stressful life events than others?

Based on a theory of stress and coping developed by Lazarus and Folkman (1984), stress is not simply events that trigger negative emotional responses but it is a two-way process where individuals interact with their environment. In other words, stress can impact individuals' well-being or functioning negatively only when individuals perceive the situation as stressful and their resources are inadequate to handle environmental stimuli (e.g., exam, illness, break-up with a romantic partner, loss of loved one, financial strains; Roddenberry 2007). Lazarus and Folkman (1984) further proposed the concepts of cognitive appraisal (i.e., primary appraisal and secondary appraisal) in order to explain individual differences in coping with stressful life events and its' relation to well-being and functioning of individuals. Primary appraisal is the process in which individuals evaluate situations as threatening, neutral-positive, or not-relevant whereas secondary appraisal is explained as the process in which individuals assess their coping resources in response to the primary in appraisal evaluation (Folkman and Lazarus, 1985). Depending on how individuals perceive the threat level of the environmental stimuli (i.e., primary appraisal), individuals will determine whether their coping resources are adequate or inadequate (i.e., secondary appraisal), and this secondary appraisal will consequently affect individuals' well-being. Therefore, based on Lazarus and Folkman's cognitive appraisal model of coping, the present study examined how perceived stress (i.e., primary appraisal) affected self-efficacy (i.e., secondary appraisal) and, in turn, influenced life satisfaction among South Korean college students.

II. Literature Review

Life satisfaction is defined as a cognitive process in which people evaluate their satisfaction with life by comparing their life situation with a self-imposed set of standards (Coffman and Gilligan, 2003). Previous research demonstrated the association between low levels of life satisfaction and various adjustment difficulties including increased long-term risk for suicide (Choi, 2012; Kiovumaa-Honkanen et al., 2001) and depressive symptoms (Yang and Kim, 2016; Koivumaa-Honkanen et al., 2001). Alternatively, high level of life satisfaction was a significant predictor for a positive adjustment such as college persistence and retention (Bean and Bradley, 1986). These previous studies have primarily focused on the effects of life satisfaction as a predictor on negative and positive life adjustment issues. Recently, the focus has shifted to investigate the factors that affect life satisfaction as an indicator for individuals' well-being (Pavot and Diener, 2008).

Previous studies (Abolghasemi and Varaniyab, 2010; Cho and Kim, 2014; Extremera, Duran, and Rey, 2009; Hamarat et al., 2001; Matheny et al., 2002; Matheny, Roque-Tovar, and Curlette, 2008; Yang and Kim, 2016) suggest that perceived stress was a significant predictor for a low level of life satisfaction. Perceived stress is not merely assessing stressful life events but assessing the degree to which life situation are considered stressful, which is the primary appraisal (Lazarus and Folkman, 1984). According to Lazarus and Folkman, this

primary appraisal (i.e., perceived stress) determines the degree of confidence individuals possessed regarding their ability to cope with stressful situations (i.e., secondary appraisal).

Self-efficacy is not merely the possession of coping skills but a belief regarding one's capability to utilize and execute coping resources to manage stress in changing and challenging situations (Bandura, 1977). Studies investigating the relationship between perceived stress and self-efficacy found that high level of perceived stress is associated with low levels of self-efficacy (Park, Kim, and Jung, 2008; Han, 2005; Torres and Solberg, 2001). Furthermore, several studies (Cho and Kim, 2014; Rayle et al, 2005) indicated that high level of perceived stress predicted low levels of self-efficacy. These results suggested that when individuals perceived their current life situations as highly stressful or threatening, those perceptions may negatively influence their assessment about their own ability to cope with stressful situations. On the contrary, individuals who perceived the same stressful situations as a challenge or opportunity to prove themselves may believe that they can utilize their coping skills more effectively because they are less likely to engage in catastrophizing thinking or anticipate negative outcomes.

In addition to perceived stress, self-efficacy influence on in individuals' well-being. Literature investigating the effects of self-efficacy on positive adjustment outcomes abound. For example, studies found that high levels of self-efficacy predicted positive college adjustment outcomes such as positive college adjustment among South Korean nursing students (Choi and Lee, 2012) and college persistency (Lent, Brown, and Lark, 1984; Torres and Solberg, 2001). Previous studies also demonstrated self-efficacy was positively associated with life satisfaction (Bradley and Corwyn, 2004; Moeini et al., 2008; Tong and Song, 2004; Vecchio et al., 2007).

An increasing number of studies most recently have focused on the mediation effect of self-efficacy between stress and physical and psychological outcomes. For instance, a number of studies (Chan, 2006; Chemers, Hu, and Gracia, 2001; Choi and Lee, 2012; Lee and Yu, 2008; Maciecwski, Prigerson, and Mazure, 2000) demonstrated the mediation of self-efficacy between stress and psychological outcomes including college adjustment and depression. The results of these studies indicated that high stress levels are related to low levels of self-efficacy, and as a result, negatively influence psychological outcomes. Although previous studies resulted in the significant effects of perceived stress and self-efficacy on life satisfaction, no studies have examined the mediating effects of self-efficacy in the relationship between perceived stress and life satisfaction. Thus, the current study utilized the concepts of cognitive appraisal in Lazarus and Folkman's theory of coping in developing the mediation model and aimed to investigate the mediating effect of self-efficacy on the relationship between perceived stress and life satisfaction among South Korean college students. Based on the previous studies mentioned above, it is expected that the relationship between perceived stress and life satisfaction can be explained by including self-efficacy as a mediating variable.

The present study tested a mediation model (Figure 1). Based on Baron and Kenny (1986) method,, it was predicted that: (1) high levels of perceived stress would be associated with low levels of life satisfaction, (2) high levels of perceived stress would be associated with

low levels of self-efficacy, (3) low levels of self-efficacy would be associated with low levels of life satisfaction, (4) the significant relationship between a high level of perceived stress and low level of life satisfaction would disappear when self-efficacy is introduced as a mediator.

III. Method

1. Sample and Procedure

Power analysis for a multiple regression with 12 predictors was conducted in G*power to determine a sufficient sample size using an alpha of .05, a power of .95, and a medium effect size (f^2 = 0. 15) (Faul et al., 2013). Based on the aforementioned assumptions, the desired sample size was 203–222 (with the consideration for 10%–20% of uncompleted surveys). Based on the result of power analysis, a sample of 282 undergraduate students was recruited. Three students did not complete the survey and therefore, total 279 students were included in the main analysis. Participants completed the 15 minute survey and they were recruited from three universities in Korea. Two universities were located in Seoul, which is the capital of South Korea and one university was located in Dae Jeon, which 5th largest metropolitan South Korea. All students were recruited through their instructors during class. 188 (67.4%) of the participants were female and 91 students were male (32.6%). The average age of participants was 20.89 (*SD*=2.54).

2. Measures

1. Demographic variables (i.e., age, gender, years in college, religion, and the location of their schools) were provided by the participants of the survey.

2. Perceived Stress: Stress was measured by the Perceived Stress Scale (PSS; Cohen et al., 1995). This is a 14-item instrument measuring the perception of stress. Participants are asked to select how frequently they experienced each item within the past month on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). A 10-item revised version has been used in studies investigating stress and physical or psychological symptoms among Asian college students. There were 4 reverse-worded items (i.e., 4, 5, 7, 8), and those items (i.e., positive perception of stress) were reversed-coded. Total scores are obtained by summing all ratings of 10 items, with higher scores indicating greater levels of perceived stress. The present study used the Korean version of PSS, which was validated by Park and Seo (2010), and they found two factors for PSS (i.e., negative perception and positive perception). They reported internal consistency of .76 for negative perception and .75 for positive perception with Korean college student population. Cronbach alpha for the current study was .82.

3. Life Satisfaction: Life satisfaction was assessed by the Satisfaction with Life Scale (SWLS; Diener et al., 1985). This scale is a 5-item self-report questionnaire that measures global cognitive judgments of one’s life satisfaction. Items are scored on a 7-point Likert response format ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). This study utilized the

Korean version of SWLS (K-SWLS), which was validated by Lim (2012) for South Korean college students. The Cronbach alpha of the 5-item K-SWLS was .84 (Lim, 2012). For the present study, this scale has demonstrated a Cronbach alpha of .85.

4. Self-Efficacy: Self-efficacy was measured by Self-Efficacy Scale, which M (SD) Stress 18.91 (5.38) Self-Efficacy 76.97 (8.84) Life Satisfaction 22.01 (5.94) was organically developed by Sherer et al. (1982) and translated and utilized for Korean college students by Kim and Cha (1996). This instrument is a 24-item self-report questionnaire on a 5-point Likert scale ranging from 1 *(not at all*) to 5 (*very much*). This scale has demonstrated a Cronbach alpha of .80.

IV. Results

The correlations among the predictor variables, demographic, and the outcome variables are reported in Table 1.

Means and SD for the predictor variables, demographic, and the outcome variables are reported in Table 2. The correlations among predictors, demographic variables, and outcomes were conducted and none of demographic variables were significantly related to perceived stress and life satisfaction. However, self-efficacy was significantly related to gender (r=.155, p<.05), location (r=.202, p<.01), religion (r=.200, p<.01), and age (r=.129, p<.05). These results indicated that participants who were older, male, located in Seoul, and reported their religion as Christian, were more likely to endorse higher levels of self-efficacy. Regarding predictors and an outcome variable, perceived stress was negatively associated with both self-efficacy (r=−.473, p<.01) and life satisfaction (r=−.470, p<.01). Lastly, self-efficacy was positively correlated with life satisfaction (r=.450, p<.01).

Preliminary analyses were conducted to determine if demographic variables (i.e., gender, age, college year, religion, location of schools) were related to life satisfaction. Demographic variables were entered first in the hierarchical regression but were not found to be significant with life satisfaction. Therefore, demographic variables were dropped from the final analyses.

Figure 1 shows the mediation model. In accordance with the Baron and Kenny (1986) method, a series of regression analyses were performed. First, the relationship between perceived stress and life satisfaction was examined. As shown in table 3, in step 1, perceived stress significantly predicted self-efficacy (β= −.473, p<.001). In step 2, perceived stress also significantly predicted life satisfaction (β= −.470, p<.001). In Step 3, the relationship between perceived stress and life satisfaction remained significant when self-efficacy was introduced as a mediator. Results showed that the strength of the relationship between perceived stress and life satisfaction was diminished but remained to be significant in step 3. In conclusion, self-efficacy partially mediated the relationship between perceived stress and life satisfaction. In order to examine the partial mediation further, Sobel test was performed (sobel test statistic = 4.685). This result indicated that the partial mediation was significant (Baron and Kenny, 1986).

V. Discussion and Conclusions

Consistent with previous studies (Chan, 2006; Chemers, Hu, and Garcia, 2001; Choi and Lee, 2012; Lee and Yu, 2008; Maciecwski, Prigerson, and Mazure, 2000) that found the mediating effect of self-efficacy in the relationship between stress and psychological outcomes, self-efficacy played an important role as a mediator between inner cognitive evaluation of stress and life satisfaction in the present study. Lazarus and Folkman (1984) emphasized the reciprocal nature of the person-environment relationship in their cognitive appraisal theory of coping. They focused primarily on individuals' appraisal of their environment and their coping ability as well as how those appraisals impact their reactions to stress. The present study expanded Lazarus and Folkman's theory and investigated the effects of cognitive appraisals on a positive adjustment to stressors such as life satisfaction. The results supported the mediation of secondary cognitive appraisal (i.e., self-efficacy) on the relationship between primary cognitive appraisal (i.e., perceived stress) and life satisfaction among South Korean college students.

Although the finding of the present study supported the mediation model of current study, the mediation effect was only a partial effect. The significant relationship between perceived stress and life satisfaction in the present study remained strong, although the degree of significance was reduced, when self-efficacy was introduced as a mediator. This result may indicate that the cognitively appraising an environmental stimuli as threatening (e.g., perceived stress) remains important in determining whether those stimuli negatively impact life satisfaction. In other words, this data suggests that as an individual perceive their situation as controllable and positively challenging, he/she would become more confident in his/her ability to meet the challenges of the environmental stimuli (e.g. coping ability) and as a result, he/she experiences improved life satisfaction (i.e., in-direct effect) or his/her positive interpretation of current situation would directly lead to enhanced life satisfaction. This result is consistent with the notion of cognitive triad (Beck, 1976) suggesting the negative views individuals have about themselves, environment, and future may result in depression. Therefore, the clinicians can assist individuals to enhance their well-being by challenging their negative views about their own ability to cope with stressful situations in which they are prone to anxiety and depression and focusing on their own strengths and resources.

Although the findings from the present study are intriguing, there are specific limitations that could be enhanced in future studies. First, the participants of the present study were limited to college students who attended classes from universities in South Korea so the result cannot be generalized into a general adult population.

Second, the current finding does not imply causal relationships among perceived stress, self-efficacy, and life satisfaction as the present study was a cross sectional. Longitudinal designs that can address causal relationships among a predictor, a mediator, and an outcome would be helpful in the future to better identify cause and effect relationships between these variables.

Third, even though the present study developed the mediation model based on previous literature and a pre-existing theory of coping, other cognitive appraisal variables that we did not examine in the present study such as perceived social support might play as a mediator in the relationship between perceived stress and life satisfaction. Future research should expand the number of variables examined in order to more fully identify the impact that these variables may have on stress and life satisfaction. Lastly, the result of the current study can also be explained by less variability of self-efficacy variable as the present study included only healthy college students in South Korea. Therefore, further studies should include not only physically healthy adults but also adults with compromised health conditions such as chronic illness.

Despite its limitations, the present study has provided a foundation for further research since it elucidated our understanding of the underlying mechanism of how perceived stress affects life satisfaction by including self-efficacy as a mediator. It indicates that assessing cognitive appraisals about stressful situations and individuals' ability to orchestrate coping resources to address unpredictable and stressful situations is integral in understanding how individuals' perception about their external environment and their internal resources affect their life satisfaction. Clinicians should therefore assess those cognitive appraisals and their contributions to the individuals' wellbeing when assisting individuals who are struggling with high levels of stress. It will also be equally important to provide effective stress management programs or programs that enhance individual well-being that address the complexity of these issues. Enhancing coping skills while increasing an individual's insight into how their cognitive appraisals about external environmental stimuli as well as their perception about their own ability to handle ambiguous and stressful situations can affect their life satisfaction. Previous studies indicated that people with high levels of perceived stress and low self-efficacy tend to utilize emotion-focused coping strategies such as denial and self-blame as they perceive their environmental stimuli as threatening and themselves as helpless to affect that stimuli. This tendency leads to high levels of anxiety, depression, somatic symptoms, and negative well-being (Bandura, 1997; Kavanagh, 1992; O'Leary, 1992; Tarry, 1994). Therapeutic approaches that were found to be effective to reduce negative psychological outcomes such as anxiety and depression can enhance individuals' well-being since those approaches assist individuals to develop a positive primary cognitive appraisal. For example, when individuals interpret stressful life events as benign-positive or challenging, instead of harming or threatening, they are more likely to adapt to stress better since they interpret stressful life events as valuable experiences that will help them better adapt to future situations. Likewise, when people have a positive view about their ability to handle challenging situations, they may consider difficult situations as challenges to be mastered, and this, in turn, leads to healthy adjustment and positive well-being (Karademas and Kalantzi-Azizi, 2004). In future studies, the issues about the differential effects of positive and negative primary cognitive appraisals on individuals' well-being can be investigated further by comparing the differential effects of perceived stress on life satisfaction between people with a positive appraisal (i.e., people views stressful circumstances as challenge) and people with a negative appraisal (i.e., people views stressful situations as harming or threatening).

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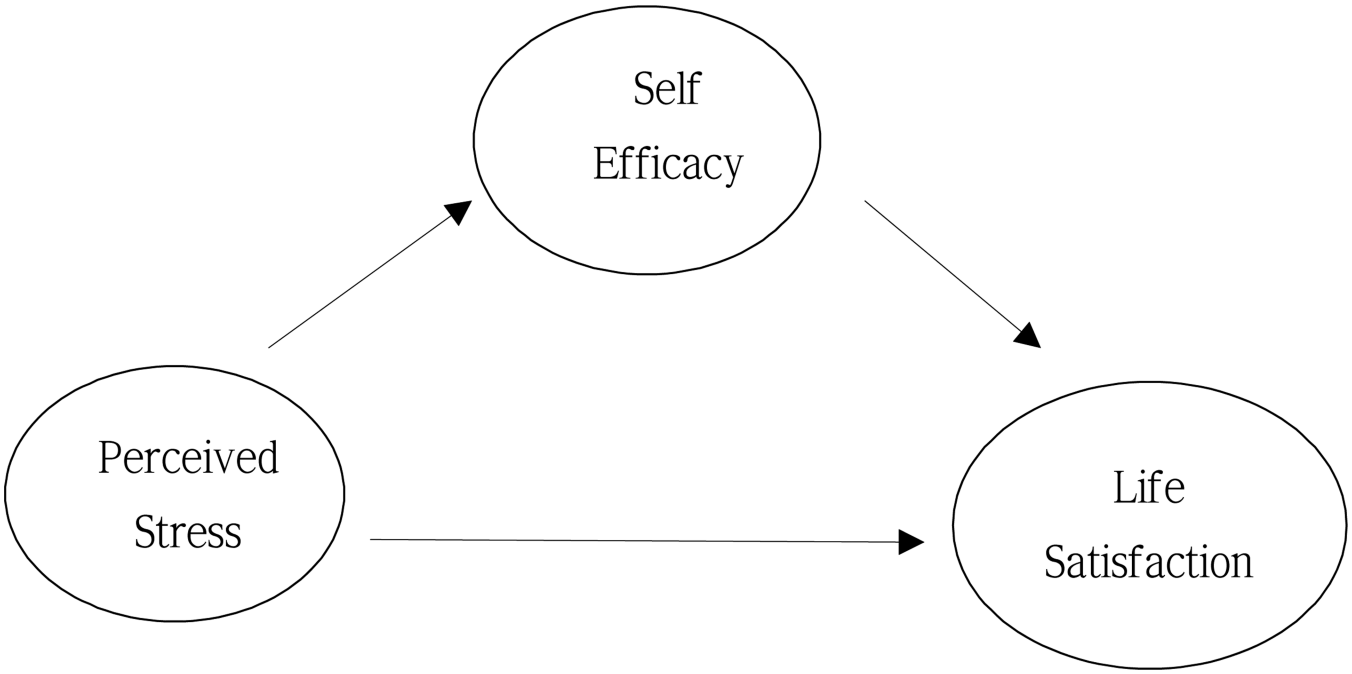

Figure 1.
Mediation model for the present study

Table 1

Correlation among predictors, demographic, and outcome variables (N=279)

	1	2	3	4	5	6	7	8
Stress	1							
Self-Efficacy	−.473**	1						
Life SAT	−.470**	.450**	1					
Gender	−.106	.155*	.015	1				
Location	−.012	.202**	.016	.469**	1			
Religion	−.035	.200**	.097	.147*	.334**	1		
College Year	.013	.077	−.028	−.025	.050	−.186**	1	
Age	.019	.129*	−.045	.184*	.143*	−.072	.727**	1

Note: Gender, Location, Religion were dummy coded. For gender, men = 1, women = 0; For school's location, Seoul = 1, Daejeon = 0; For religion, Christian = 1, Non-Christian = 0.

* p<.05,

** p<.01,

*** p<.001

Table 2

Means and SD for predictors, demographic, and outcome variables (N=279)

	M (SD)	
Stress	18.91 (5.38)	
Self-Efficacy	76.97 (8.84)	
Life Satisfaction	22.01 (5.94)	
Gender	Male	33.1 %
	Female	66.9 %
Location	Seoul	47.1 %
	Dae Jeon	52.9 %
Religion	Christian	41.4 %
	Catholic	9.1 %
	Buddhism	5.7 %
	No religion	43.7 %
College Year	1st year	44.9 %
	2nd year	12.5 %
	3rd year	33.1 %
	4th year	9.5 %
Age	20.90 (2.54)	

Table 3

Summary of Regression Analysis of perceived stress as a predictor and self-efficacy as a mediator on life satisfaction

Step	Predictor	Outcome	β	t	p	R^2
step 1	Stress	Self-E	−.473	−8.677	.000***	.224
step 2	Stress	Life-SAT	−.470	−8.600	.000***	.221
step 3	Stress	Life-SAT	−.331	−5.576	.000***	.287
	Self-E		.293	4.926	.000***	

Note: Self-E = Self-efficacy, Life-SAT = Life Satisfaction.

* p<.05,

** p<.01,

*** p<.001