



Role of Perfectionism and Perceived stress on behavioral Procrastination: Mediating Role of Self-Regulation

Roya Danaei^{1*}, Touraj Hashemi²

¹ Master of General Psychology, University of Tabriz, Tabriz, Iran.

² Supervisor, Department of Psychology, University of Tabriz, Tabriz, Iran.

*Corresponding Author

Abstract: Procrastination is a behavioral phenomenon described as delaying the tasks. It causes stress, feeling guilty, and a severe reduction in individual productivity. It also leads to the lack of social approval due to non-commitment to tasks and responsibilities. The objective of this study was to evaluate the role of perfectionism and perceived stress in behavioral procrastination with the mediating role of self-regulation. This research was a fundamental-correlational study. The research population included students of the University of Tabriz in the academic year of 2018-2019, 300 of which were selected by cluster random sampling method. To measure the data, Lee and Mann Procrastination Scale, Multiple Procrastination Scale (MPS), Cohen Perceived Stress Scale, and Self-monitoring Scale were used. The results of data analysis using structural equation modeling method showed that self-regulation could mediate the relationship between perfectionism and perceived stress as well as behavioral procrastination. In this regard, the measured model had desirable fit with the theoretical model. These results had practical implications for reducing procrastination of students. They suggested that personality traits and behavioral skills played a key role in the emergence of procrastination.

Keywords: Perfectionism, Perceived Stress, Behavioral Procrastination and Self-Regulation.

INTRODUCTION

The procrastination is a psychological trait seen in human life and among the various social classes and age groups. This phenomenon is very common in learning environments among learners and is associated with adverse outcomes, including obtaining a low classroom scores. The procrastination is not a new concept and has a long history. Although procrastination brings stress, disorganization, and failure, it might make life more enjoyable. Procrastination is associated with many psychological factors. It has relationship with negative behaviors and negative outcomes such as a drop in academic performance, different forms of anxiety and distress stress, hopelessness, irrational beliefs, and can lead to psychological harm (Collins, Onwuegbuzie & Jiao, 2008). Studies suggested that there are two types of procrastination, including behavioral and decisional ones (Milgeram & Tenne, 2000). In this regard, behavioral procrastination means the delay in the completion of important and major tasks (McCone, Johnson, 1991) and decisional procrastination means a deliberate delay in decision-making within a given time framework (Ferrari, 2000). Studies have indicated that procrastination is not only a time management problem, but also a complex process that includes emotional, cognitive, and behavioral components. Extensive studies have indicated that the rate of problematic academic procrastination among students was at least 70-95% (Steel, 2007) and acute depression has been estimated in 20-30% of students (McCone and Johnson, 1991). There are various theories on procrastination. The behavioral theories explain the procrastination in terms of reinforcement theory, that is, delaying the tasks for an

individual has a greater effect compared to doing it. The psychoanalytic approach views procrastination as a problematic behavior indicating the underlying psychological emotions including one's feelings towards his family. Cognitive approaches also emphasize the role of irrational beliefs and unrealistic expectations in procrastination (Kazemi, Fayazi and Kaveh, 2010).

Studies conducted with regard to procrastination have focused on the relationship between this phenomenon and various psychological factors such as low self-esteem, self-efficacy in self-regulation, mood and personality traits, goal orientations, and weak application of learning skills. It seems that each of these variables are involved in the prediction of procrastination. In addition, the underlying factors of procrastination have been less recognized, and despite growing studies, there is need to expand our knowledge about the causes of procrastination. Hence, procrastination is one of the phenomena which have not been fully recognized by humans (Steel, 2007). Moreover, studies conducted by Dewitt & Schouwenburg (2002) Fritzsche, young & Hidson (2003), Lee (2005) and Midgley & Urdan (2001) showed that procrastination has relationship with negative outcomes, such as delayed doing of tasks, acceleration in preparing yourself for the exam, social anxiety, task avoidance, performance avoidance, low self-regulation, low level of conscientiousness and low success. It also has negative outcomes for mental health. The researchers have referred to various factors as procrastination outcomes. A common belief on the nature of procrastination is that this behavior is rooted in high standards (Flett, Blankestein, Hewitt, & koledin, 1992). One's desire for complete and unreachable standards is a sign of perfectionist beliefs (Burns, 1980). Perfectionism is considered as a personality style, in which individuals make great effort to perform imperfect actions and consider high standards for evaluating the behavior (Flett and Hewitt, 2005). Delay in starting a task can be due to the desire to do it perfectly. This makes the task hard or unpleasant. Thus, such a person considers the doing of the task early and avoids it due to facing with perfectionist standards (Shafran and Mansell, 2001). The results of various studies indicated the relationship between perfectionism and procrastination. The results of the recent research conducted by Sheikhi, Fathabadi and Heydari (2013) showed that people with high scores in perfectionism had high scores in academic procrastination compared to those having low scores in perfectionism. Concerning about mistakes, blaming parents, and doubts about actions are components of perfectionism, which are associated with academic procrastination. Capan (2010) argued that students having a perfectionist personality trait showed higher procrastination in academic affairs. Results of the research conducted by Nasri, Shahrokhi and Damavandi (2013) indicated that perfectionism was a predictor of academic procrastination. In addition, the theory of Lazarus & Folkman stated that procrastination could be considered as an inappropriate strategy for coping with stress, which increased the level of stress, while properly coping with stressors reduced their severity and accumulation of burden of tasks. Any force that removes one's mental or physical stability from the balance state and causes pressure on the person is called stress. Stress occurs when there is a threat to the person. A concept having a threat to a person is defined as the perceived stress. In fact, the results suggested that stressors had the ability to predict procrastination, which was associated with negative evaluation of people about their abilities. In fact, it can be stated that the presence of stressors enhanced the feeling of lack of control over environmental conditions and helplessness, and it should be stated that reduced self-esteem in this case, as many other cases, was the root of many problems. When a student feels disability to overcome the academic problems, he delays his academic tasks (Schwarzer & Diehl, 2000).

In a study conducted by Perrewe et al. (2007), stressors involved in procrastination were identified. Kiura et al. (2008) concluded in their research that with the continuation of stressful conditions, students' emotional exhaustion increased and was manifested as negative self-evaluation and negative self-efficacy and negligence. Studies conducted by Howell & Watson (2007) and Wolters (2003) showed that procrastination was associated with high levels of anxiety and stress. Although the phenomenon of procrastination affected various individual factors, the motivational states of people played a key role in their occurrence. In this regard, the process of self-regulation had a particular importance. Self-regulation is a practice used by people to determine the internal and external signs to determine the time to start, continue, and terminate the actions in line with their goals through internal and external signs. In this

regard, Ellis and Kenus (1979) viewed procrastination as a lack of self-regulation and a behavioral tendency to delay what is necessary to achieve the goal. Self-regulating person is a purposeful person who uses time management techniques, meaningful and directional training, appropriate cognitive and metacognitive strategies, and self-efficacy to achieve the goal in the best way and in line with his abilities and talents (Zimamermane, Bandura & Martinez Pons, 1992). In addition, Howell & Watson (2007) considered procrastination as a disability in self-regulation and referred to the relationship between procrastination and self-regulation. The studies conducted by Howell & Watson (2007) and Wolters (2003) showed that procrastination was associated with a low level of self-regulation. Klassen, Lindsey & Rajani (2007) introduced the key factor in determining the procrastination as one's ability in self-regulating. The results of the studies conducted by Klassen et al. (2007) showed that self-regulation, academic self-efficacy, and self-esteem were predictors of procrastination. Steel (2007) emphasized the role of self-regulation in procrastination. However, other studies conducted in this area showed that self-regulation led to prolonged process of problem solving and procrastination in emergencies through long-term goal setting and comprehensive assessment of the situation (Elliott, 2005).

The phenomenon of procrastination was associated with everyday life of human beings in various forms and has imposed unwanted and irreparable harms and consequences on the people of the society (Kazemi, Fayazi and Kaveh, 2010). The prevalence of this phenomenon is inevitable in all groups and classes of human communities in such a way that it imposes many costs on individuals over the years and affects various areas of human life, including work, education, family and social affairs (Steel, 2007). It has caused numerous disturbances and psychological harms so that their destructive effects on individual and social aspects of life are increasing everyday (Mc Cown & Johnson, 1991). Accordingly, managers and psychologists spend a lot of money each year to reduce the negative effects of this phenomenon on the people of a community (Shafran & Mansell, 2001). Hence, the issue of procrastination has caused increasing stress and discomfort on human beings life, so it accounts for the large part of the educational, and work, family and social problems. Hence, many efforts have been made in recent years to investigate the procrastination phenomenon in order to identify the role of psychological and sociological factors in this regard (Sheikh Eslami, Dortaj, Delawar and Ebrahimi, 2014). As a result, high emphasis has been put on the role of personality traits such as perfectionism and perceived stress. There are numerous contradictory findings about the relationship between these two components and procrastination, that eliminating these contradictions requires new studies. In addition, etiology of procrastination showed that special factors, especially self-regulation, could reduce the level of procrastination and in some cases it would lead to a relative improvement in this behavior (Howell & Watson, 2007). Hence, the self-regulation concept seems to play a mediating role in the relationship between perfectionism and perceived stress and procrastination. As the role of self-regulation as a mediating factor in the relationship between perfectionism and perceived stress and procrastination has not been investigated in previous studies (each variable has been investigated separately), the present study aimed at investigating these variables altogether. Given the theoretical framework and the research literature, the aim of this study was to answer the question of whether self-regulation can mediate the relationship between perfectionism and perceived stress and procrastination or not.

Methodology

Research population, sample and method:

A total of 300 students were selected as research sample through multi-stage cluster sampling method. In this regard, 6 faculties of the University of Tabriz were randomly selected and 2 classes were randomly selected from each faculty. Then, all of the selected students were considered as the final samples. The objectives of the present study were explained to the samples and the questionnaires were provided for them.

Measurement instrument

- A. Lee and Mann Procrastination Scale: General Procrastination Scale (GPS): This scale was developed by Lee in 1986 to examine the behavioral procrastination in 20 items. Each has 5 options ranging from definitely false (zero score) to definitely true (score 4). Hosseini and Khayer (2009) translated this instrument to Persian language and determined its Cronbach alpha coefficient equal to 0.80 and reported a general factor for the whole scale.
- B. Decisional Procrastination Scale (DPS): This scale was developed by Mann (quoted in Sadat Hosseini and Khayer, 2009) in 1982 to measure decisional procrastination and has 5 items. Each items has 5 options ranging from definitely false (zero score) to definitely true (score 4). The validity and reliability of this scale have been reported at a desirable level. Hosseini and Khayer (2009) translated it into Persian language and reported its Cronbach alpha coefficient equal to 0.78 and reported a general factor for the whole scale.
- C. The Multiple Perfectionism Scale (MPS): This scale was developed in 1991 by Flett and Hewitt. It includes 30 items that measure the three dimensions of self-centered perfectionism, other-centered perfectionism, and community-centered perfectionism. Each of the three dimensions is measured by 10 items on a 5-point Likert scale ranging from I strongly agree to I strongly disagree. In their research on a sample of 263 patients, they reported the internal consistency of their scale at the acceptable level, so that it was reported equal to 0.88, 0.74, and 0.81 for dimensions of self-centered perfectionism, other-centered perfectionism, and community-centered perfectionism, respectively. The reliability of this instrument for the dimensions of self-centered perfectionism, other-centered perfectionism, and community-centered perfectionism was found 0.66 0.69 and 0.60, respectively. In the preliminary validation of the Iranian form of this scale on a student sample by Besharat (2002), coefficients of the correlation between the scores of the subjects in two times with four-week interval was obtained 0.88, 0.83, and 0.80, respectively, for self-centered perfectionism, other-centered perfectionism, and community-centered perfectionism. Cronbach's Alpha coefficient and retest reliability coefficient (after one month) were reported as 0.91 and 0.85, respectively. In another study, conducted on 480 students (quoted by Besharat, 2005), Cronbach's alpha coefficient was reported as 0.89, 0.83, and 0.78, respectively, for self-centered perfectionism, other-centered perfectionism, and community-centered perfectionism., indicating high internal consistency of this scale. Correlation coefficients among the scores of 40 students in two times with a four-week interval was reported as 0.84, 0.82, ad 0.80, respectively, for self-centered perfectionism, other-centered perfectionism, and community-centered, indicating a high level of retest reliability of the Iranian form of this scale. Questions 1 to 10 of this scale are related to self-centered perfectionism, questions 11 to 20 are related to other-centered perfectionism, and questions 21 to 30 are related to community-centered perfectionism.
- D. Cohen Perceived Stress Scale: This scale was developed by Cohen et al. in 1983. It has 3, 4, 10 and 14 versions with 14 items used to measure perceived stress in the past month. Cohen et al. (1983) calculated the Cronbach's alpha as 0.84 and 0.86 for this scale. In the studies conducted by Ghorbani et al. (2002), the Cronbach's alpha value in the Iranian sample was calculated as 0.81. In another study conducted by Salehi, the alpha value was reported as 0.75.
- E. Self-monitoring evaluation scale: This test was developed by Mark Schneider in 1974 to evaluate the self-monitoring level of individuals. This test has 25 questions and the subjects must choose one of the options of true or false. According to the internal consistency coefficient, its reliability was reported as 0.66.

Results

The descriptive results of the present study are shown in Table 1.

Table 1- Descriptive indicators of research variables

Group Variable	Male			Female		
	mean	SD	Number of participants	mean	SD	Number of participants
Behavioral procrastination	41.12	14.12	114	38.12	12.11	164
Decisional procrastination	9.21	3.12	114	7.21	3.02	164
General procrastination	50.23	17.24	114	45.33	15.21	164
Self-centered procrastination	30.12	8.15	114	25.12	6.11	164
Community-centered procrastination	28.11	7.21	114	31.18	6.12	164
Other-centered procrastination	24.19	5.11	114	26.85	5.99	164
general procrastination	82.42	20.47	114	83.15	18.21	164
Perceived stress	34.19	9.29	114	28.19	7.63	164
Self-regulation	12.16	4.25	114	10.22	4.12	164

The correlation matrix of the research variables is shown in Table 2.

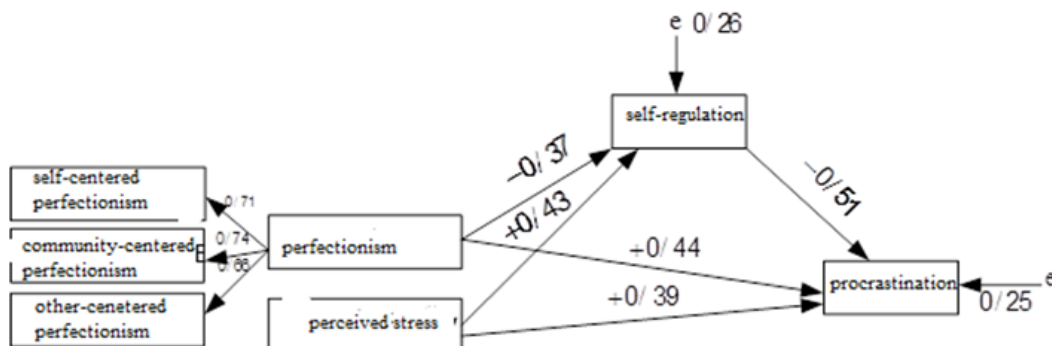
Table 2: Correlation matrix of the studied variables

Variable	1	2	3	4
procrastination	1			
Perfectionism	0.64**	1		
Perceived stress	0.50**	0.36**	1	
Self-regulation	-0.57**	-0.43**	-0.49**	1

**→P<01, *→ P<0.5

Correlation matrix indicated a negative relationship between self-regulation and procrastination, as well as positive relationship between perfectionism and perceived stress and procrastination. Moreover, it showed a negative relationship between perfectionism and perceived stress and self-regulation. In order to investigate the causal relationships between perfectionism and perceived stress and behavioral procrastination with mediating role of self-regulation, path analysis was used. For path analysis of causal relationships among the studied variables, the procrastination variable was defined as the dependent variable, the self-regulating variable was used as the mediating variable, and the perfectionism and perceived stress variables were defined as an independent variable and were included in the data analysis system. The path analysis results are presented in the causal model (1).

A summary of analysis of causal relationship of the studied variables



TLI	NFI	CFI	AGFI	GFI	P	χ^2/df	df	χ^2	MSEA
0.91	0.90	0.91	0.92	0.94	0.001	3	332	196	0.03

Model 1

The contents of the causal model (1) showed that the measured model had desirable fit with the conceptual and theoretical model, since the root mean square error of approximation (RMSEA) was at a desirable (less than 0.05) level and the ratio was also at the desirable level (Less than 5). Additionally, the Goodness of Fit Index (GFI), Adjusted Goodness of fit Index (AGFI), Comparative Fitness Index (CFI), Normal Fit Index (NFI) and Tucker- Lewis Index (TLI) were at desirable levels (0.90 and higher). Therefore, it can be concluded that self-regulation was able to mediate the relationship between perfectionism, perceived stress and procrastination.

In order to study the direct effects, causal path model outputs (1) and the corresponding test (t) were used based on the Table 3.

Table 3: Direct effects of independent variables on procrastination

Independent variable	Dependent variable	Effect value	Estimate error	t	Significance level
procrastination	procrastination	0.44	1.03	5.42	0.0001
Perceived stress	procrastination	+0.39	1.09	4.59	0.001
Self-regulation	procrastination	-0.51	1.02	6.02	0.001
Perfectionism	Self-regulation	-0.37	1.16	-4.16	0.001
Perceived stresss	Self-regulation	0.42	1.06	5.26	0.001

The results of Table 3. showed that perfectionism was able to positively and significantly explain 0.44% of variations in procrastination. Perceived stress was able to positively and significantly explain 39% of variations in procrastination, and self-regulation was able to negatively and significantly explain 51% of the variations in procrastination. Perfectionism was able to negatively and significantly explain 0.37% of the variations in self-regulation, and perceived stress could positively and significantly explain 0.42% of variations in self-regulation. In order to examine the significance of intermediate relationships, Bootstrap test was used whose results are presented in Table (4).

Table 4: mediating effects of self-regulation regarding the relationships between independent and dependent variables

Independent variable	Mediating variable	Dependent variable	Bootstrap test		Bias value	Error estimate	Effect value	Significance value
			Upper border	Lower border				
perfectionism	self-regulation	procrastination	0.2244	0.1652	0.009	0.0014	+0.18	0.001
Perceived stress	self-regulation	procrastination	-0.2742	-0.2251	0.007	0.0011	-0.24	0.001

The results of the above table showed that perfectionism was able to explain 0.18% of variations in procrastination positively and significantly through the mediating role of self-regulation. Perceived stress was also able to explain negatively 24% of variations in self- self-regulation.

Discussion

Given its motivational aspect in life, education, family, social, job affairs and its negative outcomes on people's quality of life and due to its relatively high prevalence, the procrastination is considered as an important phenomenon. Hence, increasing number of studies have been conducted on the factors predicting it and each of them has referred to various psychological variables. The aim of the current study was to evaluate the role of perfectionism and perceived stress in behavioral procrastination with the mediating role of self-regulation. The results of this study showed that self-regulation could mediate the relationship between perfectionism, perceived stress and behavioral procrastination. In addition, the direct effect of perfectionism on the procrastination was statistically significant, meaning that perfectionism was able to plain the variations in procrastination positively, so that by increasing the level of perfectionism, the level of procrastination increased.

The results of this study were consistent with those of the research conducted by Capan (2010), Yoa (2009), Saddler & Sacks (1993) and Borofi (2005), and also Sheikhi, Fathabadi and Heydari (2013), Nasri, Shahrokhi and Damavandi (2013), which reported the self-perfectionism as the most important predictor of procrastination. Moreover, the findings of this study were not consistent with those of research conducted by Allameh and Mehrabi Zadeh Honarmand (2011), because they reported a negative relationship between perfectionism and procrastination. In explaining the results of this research, it can be stated that perfectionists refused to start or complete their tasks since they were not able to meet their and others' expectations, they feared of failure, and they believed that they should be completely decent, competent and intelligent people, which made procrastination in doing their life's tasks. In addition, data analysis showed that perceived stress was able to positively explain the variations in procrastination, meaning that increasing the level of perceived stress increased the level of procrastination. These results were in line with the results of the research conducted by Tan (2008), Perrewe & Hochwarter (2007), Fuschia and Siveis (2006), Tix and Baumeister (1997), Steed, Shanahan & Neufeld (2010) and Sheikhol Eslami, Dortaj, Delawar and Ebrahimi Ghavam (2014). In explaining the relationship between perceived stress and procrastination, it can be stated that those perceiving high stress, due to high restlessness and difficulty in attention, memory, concentration, and decision making, and subsequently influenced by the effects of stress, have increased negative thoughts, and avoid anxious situations. Thus, they feel hopelessness, and they refuse to start or complete their tasks, leading to procrastination.

Data analysis also showed that self-regulation was able to negatively explain procrastination variations, that is, by increasing the self-regulation in people, their procrastination increased, as well. These results were in line with results of the research conducted by Miligram and Tanen (2000), Pintrich (2000), Kandemir (2014), Mogaddas (2003), Schouwenberg (2004) and Wolters (2003), since they reported that people having a high self-regulation, had lower levels of procrastination. In explaining the relationship between self-regulation and procrastination, it can be stated that individuals with self-regulation showed lower levels of procrastination since they had the ability to plan and execute the expected activities in order to achieve the desired goals and they started and completed their tasks. In addition, analysis of data showed that perfectionism could negatively explain variations in self-regulation, so that by increasing the perfectionism in individuals, their self-regulation decreased. In explaining this result, the theory proposed by Yerkes & Dodson (1908) can be referred. They stated that experiencing stress was somewhat beneficial and resulted in improved performance, so the positive relationship between perceived stress and self-regulation followed this rule that as stress of an individual increases, it became a challenge for him and he did his best to plan and manage the goal. It made finally an individual regulate his behaviors in various areas. With regard to the mediating role of self-regulation in the relationship between perceived stress and procrastination, the results showed that the effect of perceived stress through self-regulation on procrastination was significant, meaning that perceived stress affected self-regulation and self-regulation was able to mediate the relationship between perceived stress and procrastination. In explaining this result, the theory of Cobb-Clark (2014) could be highlighted which introduced self-regulation as a term close to self-control. According to cognitive social theory, self-regulation is situation-dependent. Thus, self-regulation is not a general characteristic to be same in all situations, rather it depends on the situation and we experience different levels of it in different situations in such a way that stressful situations affect the individual's self-regulation. The reason is that the stressful situation, restless, and uncertainties cause problems in the accuracy, attention, concentration, and decision making. It makes an individual unable in self-regulation and self-control in his behavior, leading finally procrastination in doing his tasks.

Therefore, perceived stress can affect self-regulation and cause procrastination in the person. Given such a relationship between perceived stress and self-regulation, it can be stated that self-regulation mediates the relationship between perceived stress and procrastination. With regard to the mediating role of self-regulation in the relationship between perfectionism and procrastination, the results showed that the effect of perfectionism through self-regulation on procrastination was significant. Shaffran and Copper argued that self-regulation is affected by an individual's perfectionism, meaning that individuals who

determine high standards are always evaluating their performance and criticizing themselves for the fear of failure. As they consider high standards for their goals, they have continuously negative view toward themselves. Restricting their pleasant activities and the activities directly related to their goals, they focus on their real or perceived mistakes in their performance and they are not able to organize their thoughts and plans to achieve their goals (Shafran, Copper & Fariborn, 2002). Hence, if there is such a relationship between perfectionism and self-regulation, it can be claimed that self-regulation mediates the relationship between perfectionism and procrastination. As the research results showed that perfectionism perceived stress, and self-regulation played a key role in predicting variations in procrastination, it is suggested that the methods of stress management, behavioral self-regulation, motivation, emotions, and processes of attention and perfectionism regulation solutions to be trained for the students to moderate the procrastination. In addition, in order to identify the causal relationships and to clarify the time sequence between the research variables, longitudinal studies are suggested to be conducted. Using self-reporting questionnaire in this study, as other studies, was considered a limitation, which could leave adverse effects on the reliability of the results.

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