

The Mediating Role of Academic Self-Regulation in the Relationship between Parenting Dimensions and Academic Procrastination

Malahat Amani^{1*}, PhD;  Mohamad Mahdi Arbabi², MSc

¹Department of Psychology, University of Bojnord, Bojnord, Iran

²Department of Education, North Khorasan, Iran

*Corresponding author: Malahat Amani, PhD; Department of Psychology, University of Bojnord, Bojnord, Iran. Tel: +98-9143580277; Email: m.amani@ub.ac.ir, malahat_amani@yahoo.com

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Abstract

Background: Academic procrastination can be influenced by personality and family factors. The purpose of this study was to investigate the mediating role of academic self-regulation in the relationship between parenting dimensions and academic procrastination among elementary students.

Methods: The method used in this study was correlation. The statistical population included all male students from the second period of elementary school in Garmeh city, Iran. Through cluster sampling, we selected a number of 278 male students. Data collection instruments were Academic Procrastination Scale, Academic Self-Regulation Questionnaire, and Parenting Style Scale. We finally analyzed the data via structural equation modeling.

Results: The results showed that paternal responsiveness ($r=-0.29$), paternal demandingness ($r=-0.34$), maternal responsiveness ($r=-0.24$), and maternal demandingness ($r=-0.34$) significantly correlated with academic procrastination ($P<0.0001$). Furthermore, paternal responsiveness ($r=0.28$), paternal demandingness ($r=0.25$), maternal responsiveness ($r=0.30$), and maternal demandingness ($r=0.28$) were significantly associated with academic self-regulation ($P<0.0001$). Academic self-regulation also had a relationship with academic procrastination ($r=-0.24$, $P<0.0001$). The results of structural equation modeling showed that academic self-regulation had a mediating role in the association between parenting dimensions and academic procrastination ($RMSEA=0.037$).

Conclusions: Parents with appropriate control and responsiveness promote the academic self-regulation of their children and prevent academic procrastination.

Keywords: Academic self-regulation, Parenting, Academic procrastination

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1. Introduction

Academic procrastination refers to students' tendency to postpone academic activities, which is more often than not accompanied by anxiety (1). Studies have shown that 40 to 95% of procrastination occurs in academic environments (2). In Iran, the rate of academic procrastination was reported to range from 61% to 70% (3). Although some studies did not examine gender differences (1, 4), some investigated the effect of gender on academic procrastination (5, 6), in which males had a high level of procrastination (5, 7).

Academic procrastination negatively impacts the process of learning, participation in classroom activities, performance in exams, and the overall academic performance (1). Procrastination ensues depression, feelings of guilt, anxiety, neuroticism, irrational thoughts, deceiving others, and low self-confidence (8, 9).

Psychological and environmental factors affect

academic procrastination (10). Family plays a major role in procrastination (11) since it shapes appropriate habits and motivates children to succeed in academic performance (12).

Each family uses a particular practice to raise the children in individual and social settings. These practices, called parenting styles, are influenced by cultural, social, political, and economic factors (13). Parenting styles differ in two dimensions: I) parental responsiveness, referring to the extent to which the parents respond to their children's needs and II) parental demandingness, which refers to the expectations the parents have for their children and the responsibility of children (14). Based on the different aspects of parenting, four parenting styles have been proposed, namely authoritative, authoritarian, negligent, and permissive. In an authoritative style, the parents have a high level of both demandingness and responsiveness and explain the basic principles of their rules and limitations. In an authoritarian style, parents have a high level of demandingness and a low level of

responsiveness. In this style, the parents apply certain rules, which they expect the children to obey without any explanations. Permissive parents have a high level of responsiveness and a low level of demandingness. They disregard the behavior of their children, have less control over their children's behavior, and encourage their children to explain their feelings and motives. In the negligent style, parents have a low level of both demandingness and responsiveness. They are not engaged in raising their children and do not seem to care for them (15).

Several studies have provided evidence for the role of parenting styles in the development of procrastination. Burk and Yuen (16) believed that procrastination occurred more in families who doubt their children's ability to succeed and progress. Ferrari and Olivette (17) held that parents who had a high standard for progress raised negligent children. Moreover, a high level of expectation on the part of the parents was correlated with procrastination.

Studies showed that authoritarian, overprotective style positively correlated with procrastination while an authoritative style had a negative correlation with procrastination behaviors (4, 7, 18, 19). Some research showed that the permissive style was related to procrastination (20) while others did not report a significant correlation between these two variables (21, 22). Some studies reported a positive correlation between negligent style and academic procrastination in students because they do not receive guidance from their parents (19).

Regarding other aspects of parenting, acceptance-involvement and autonomy-granting were negatively correlated with academic procrastination (23). Chen (24) showed that parental trust had a negative relationship with higher levels of procrastination whereas paternal alienation positively correlated with procrastination.

Over the recent years, academic procrastination has been considered as a defect in self-regulation and the disability to control thoughts and emotions, to determine the purpose, to use monitoring strategies on learning; and this deficiency in self-regulation leads to reliance on external factors for motivation (9, 16-26). Indeed, because individuals with a high level of self-regulation are aware of their thoughts, beliefs, and intellectual processes, they can analyze better conditions and probably less show procrastination in their decisions (27).

In academic self-regulation, learners independently guide their efforts instead of relying on their teachers, parents, and other academic agents. In other words, to enhance learning, a learner has an active participation in behavioral, motivational, cognitive, and metacognitive processes (28).

Studies on the relationship between self-regulation and procrastination have ambiguous and double-sided results because they investigate different components of self-regulation and procrastination. For instance, some studies confirmed the significant relationship between self-efficacy components and procrastination (9, 25, 26). Some studies showed a significant association between motivation and procrastination (26, 29). The components of assistance in learning and metacognition had the most significant role in explaining academic procrastination (30). In another study, self-regulation components such as internal and external valuation towards purpose, ability of organizing, meta-cognitive strategies, time management and study environment, and self-regulating efforts significantly predicted academic procrastination (31). Park and Sperling (26) showed that the components of "test anxiety" and "external goals" correlated positively with procrastination while other components, namely self-efficacy, metacognition, time management and study environment, self-regulating efforts, and internal goals had a significant negative correlation with procrastination.

Studies have shown that parenting styles are among the most important predictive factors for self-regulation in students, meaning families with an authoritative parenting style had self-regulated children whereas authoritarian and permissive parents had less self-regulated or non-self-regulated children (32). Piotrowski and colleagues (33) reported that parents reinforcing a sense of autonomy had children with stronger self-regulation skills while parents with perfect control had children with a low level of self-regulatory skills. In addition, parents with no proper control more likely had children with defects in self-regulation. Another study suggested that parenting components of warmth, structure, and autonomy support had a positive relationship with better impulse control while components of rejection, chaos, and coercion correlated with weak impulse control (34).

Although many studies have been published on the relationships among parenting, self-regulation, and academic procrastination, few studies have examined the inter-relationship of all three variables

simultaneously. In a study, individuals with better self-regulation and higher levels of supportive parenting had lower levels of procrastination (34). Yip and Leung (18) found that the authoritative parenting style had an impact on learning self-regulation and academic procrastination. Qing-song and colleagues (7) observed that achievement motivation partly mediated the relationship between parental rejection, warmth, and academic procrastination. Chen (24) revealed that self-worth mediated the relationship between parental attachment and procrastination.

Given the negative relationship between academic self-regulation and academic procrastination and the positive relationship between parenting dimensions and academic self-regulation, the present study sought to investigate the role of academic self-regulation strategies in the correlation between different parenting dimensions and academic procrastination in the students of primary school (Figure 1).

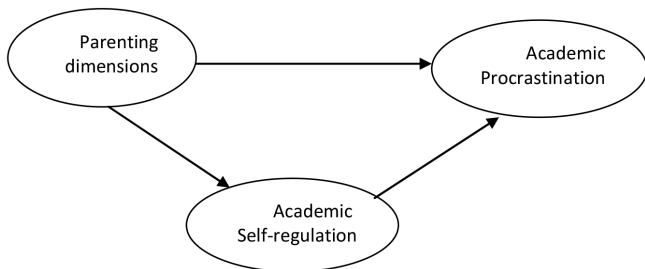


Figure 1: The figure shows the conceptual model of the study.

2. Methods

This was a correlational study in which we aimed to investigate the mediating role of academic self-regulation strategies in the relationship between parenting dimensions and academic procrastination.

The statistical population of the present study comprised all the male students of the second period of elementary school in Garmeh city, Iran. According to the Education Organization of the city of Garmeh, 589 male students were registered in the second period of elementary in the academic year of 2017-2018. Using the Cochran formula, the sample size was estimated at 232; with a dropping probability, the sample size increased to 300; cluster sampling was used to randomly select a school. To observe the ethical considerations, the participants signed an informed consent form. The questionnaires were completed anonymously by the participants. The questionnaires of 278 participants were returned. We analyzed the data using Pearson's correlation

coefficient and structural equation modeling by the use of SPSS software version 21 and AMOS version 21.

Instruments

Parenting Style Scale: Abdul Gafoor and Kurukkan (35) developed this scale to measure the perceived parenting style. This scale has four dimensions, namely mother's responsiveness and control and father's responsiveness and control. It consists of 38 items based on a 5-point Likert scale (always true=5, almost true=4, sometimes true and sometimes false=3, almost false=2, always false=1). The reliability coefficients obtained for responsiveness and control were 0.80 and 0.76, respectively. The reliability of test-retest after a one-week interval was 0.81 for responsiveness and 0.83 for control (35). In this study, we translated the questionnaire, matched it with the back-translation, and obtained a Cronbach's alpha reliability of 0.78 for the preliminary study.

Procrastination Academic Scale (PASS): Solomon and Rothblum (36) developed this scale to measure academic procrastination. This scale comprises 27 items that examine the components of preparation for exams, preparation for tasks, and preparation for class projects. The items are answered based on a 4-point Likert scale (rarely=1, sometimes=2, usually=3, always=4). Cronbach's alpha was 0.79 for the whole scale, 0.85 regarding preparation for exams, 0.86 for preparation for tasks and 0.89 for preparation concerning class projects. In Iran, one study reported a Cronbach's alpha coefficient of 0.71 for this scale (37). The reliability of this scale was 0.70 in this study.

Academic Self-Regulation Questionnaire (ASR-Q): Sevari and Arabzade (38) designed this questionnaire. ASRQ has 30 items to measure memory, targeting, self-evaluation, assistance, responsibility, and organizational strategies. It is responded according to a 6-point Likert scale (never=1, rarely=2, sometimes=3, often=4, usually=5, always=6). Sevari and Arabzade (38) obtained a Cronbach's alpha of 0.87, 0.74, 0.75, 0.83, 0.71, 0.72, and 0.76 for the whole questionnaire, memory, targeting, self-evaluation, assistance, responsibility, and organizational strategies, respectively. In this study, the reliability of this questionnaire obtained using Cronbach's alpha of 0.78.

3. Results

The age of participants ranged from 9 to 13. 171 students were 9 to 11 years old, and 107 students were

12 to 13 years old. Of the total participants, 83 (30%) students were in the fourth grade, 101 (36.5%) students were in grade five, and 94 (33.5%) students were sixth graders.

Table 1 shows the descriptive findings, including mean, standard deviation, and Pearson's correlation coefficients.

As shown in table 1, among the components of academic procrastination, preparation for tasks significantly correlated with all of the parenting dimensions and academic self-regulation strategies while preparation for projects correlated with some academic self-regulation strategies (targeting and self-evaluation), and preparation for exams did have a relationship with most of the parenting dimensions and academic self-regulation strategies.

Results of comparative fitness indexes regarding the present model showed that CFI, TLI, IFI, RFI, and NFI were 0.99, 0.98, 0.99, 0.94, and 0.97, respectively, placing these indexes in the acceptable range (1 to 0.90). The absolute fitness indexes, AGFI and GFI, were 0.94 and 0.97, showing an acceptable range (1 to 0.95). Also, the results showed that χ^2 , χ^2/df , and p were 49.63, 1.37, and 0.06, respectively. The rate of RMSEA was 0.037, indicating the goodness of fitness model. Therefore, the presented model confirmed the mediating role of academic self-regulation in the relationship between parenting and academic procrastination.

Based on the standardized direct effects, Table 2 shows that the strongest paths were parenting to procrastination and parenting to self-regulation, respectively.

Given the lack of a significant relationship between preparation for exam and other variables, this component was omitted from the model. Figure 2 shows that parenting dimensions directly and indirectly affected academic procrastination through academic self-regulation.

4. Discussion

The purpose of this study was to investigate the relationship between perceived parenting dimensions and students' academic procrastination through academic self-regulation. This study showed that parenting dimensions, namely perceived demanding and responsiveness correlated negatively with academic procrastination. Structural

Table 1: Descriptive indexes of studied variables

	Mean±SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Academic procrastination															
1.Tasks	9.98±2.084	1													
2.Exams	14.05±2.89	0.01	1												
3.Projects	11.77±4.06	0.30**	0.12*	1											
4.Total	35.80±3.73	0.62**	0.42**	0.77**	1										
Academic Self-regulation strategies															
5.Memory	19.64±4.40	-0.18**	-0.11	-0.09	-0.02	1									
6.Targeting	11.53±3.83	-0.18**	-0.002	-0.14*	-0.10	0.41**	1								
7.Self-evaluation	27.47±4.56	-0.31**	-0.09	-0.15*	-0.16**	0.45**	0.36**	1							
8.Assistance	28.28±4.71	-0.23**	-0.003	-0.10	-0.13*	0.41**	0.25**	0.35**	1						
9.Responsibility	17.01±4.59	-0.27**	0.14*	-0.12	-0.09	0.46**	0.44**	0.32**	0.44**	1					
10.Organization	27.82±5.54	-0.18**	-0.01	-0.08	-0.10	0.39**	0.39**	0.28**	0.57**	0.51**	1				
11.Total	131.75±19.69	-0.31**	-0.02	-0.16**	-0.24*	0.72**	0.64**	0.64**	0.72**	0.75**	0.76**	1			
Parenting Dimensions															
12.PR	87.27±18.12	-0.19**	-0.06	-0.29**	-0.29**	0.28**	0.20**	0.10	0.17**	0.19**	0.26**	0.28**	1		
13.PD	88.21±17.97	-0.20**	-0.17**	-0.24**	-0.34**	0.23**	0.16**	0.14*	0.18**	0.12	0.21**	0.25**	0.85**	1	
14.MR	91.63±15.29	-0.12*	-0.04	-0.23**	0.24**	0.33**	0.10	0.05	0.22**	0.18**	0.36**	0.30**	0.71**	0.61**	1
15.MD	94.03±14.13	-0.19**	-0.09	-0.31**	-0.34**	0.29**	0.06	0.07	0.26**	0.13*	0.32**	0.28**	0.69**	0.71**	0.84**

Table 2: Direct and total effects of paths

Paths	Standardized Direct Effects	t value	S.E	Total Effect
Parenting to self-regulation	0.38**	4.95	0.02	0.38
Parenting to procrastination	-0.39**	-3.64	0.008	-0.51
Self-regulation to procrastination	-0.31**	-2.74	0.03	-0.31
Self-regulation to organization	0.68**	9.12	0.09	0.68
Self-regulation to responsibility	0.71**	9.28	0.09	0.71
Self-regulation to assistance	0.62**	9.73	0.08	0.62
Self-regulation to self-evaluation	0.44**	6.44	0.08	0.44
Self-regulation to targeting	0.64**	8.48	0.08	0.64
Self-regulation to memory	0.65**	8.82	0.09	0.65
Procrastination to tasks	0.52**	4.12	0.39	0.52
Procrastination to projects	0.54**	4.48	0.41	0.54
Parenting to Paternal responsiveness	0.87**	8.12	0.09	0.87
Parenting to Paternal demandingness	0.73**	14.07	0.059	0.73
Parenting to Maternal responsiveness	0.81**	7.95	0.09	0.81
Parenting to Maternal demandingness	0.98**	8.68	0.09	0.98

**Coefficients is significant at the 0.01 level (2-tailed).

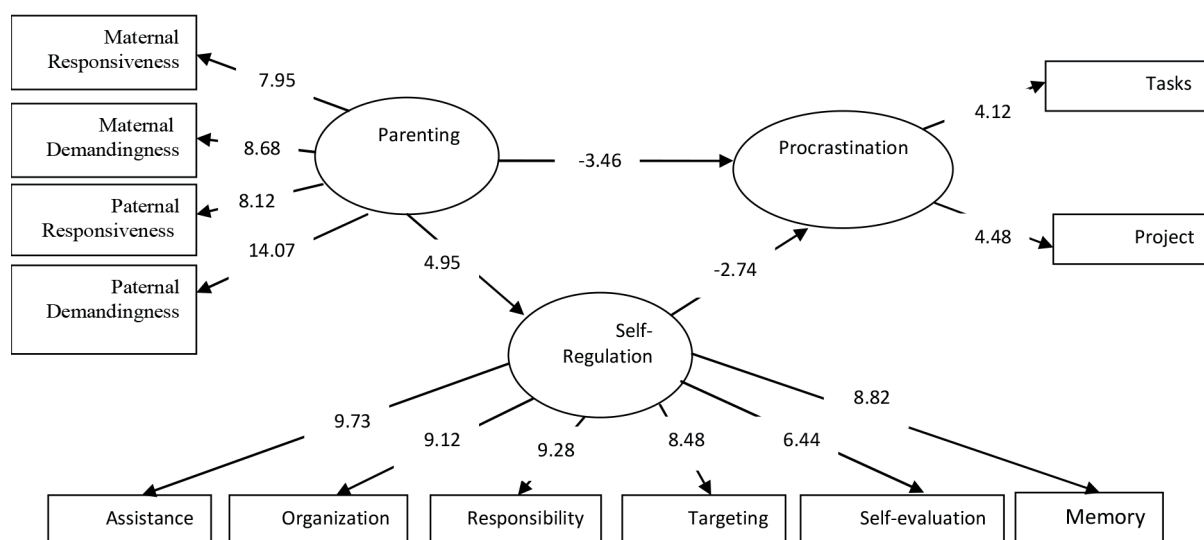


Figure 2: The figure shows the presented model of inter-relationship of academic self-regulation, parenting, and procrastination.

equation modeling analysis showed that perceived parenting dimensions had a negative impact on academic procrastination, meaning a higher level of demandingness and responsiveness reduces academic procrastination, which is consistent with several studies (4, 7, 18, 19) while inconsistent with certain others: for instance, Zakeri and colleagues (23) and Hong and colleagues (39) reported that strictness-supervision did not correlate with procrastination. Ferrari and co-workers (40) and Rothblum and colleagues (1) showed that parental control was positively associated with procrastination. In this study, the participants were the students of elementary school who need to over monitor on doing tasks while in other studies, the sample was the high school and college students; their need for over-controlled independence lead to disobedience and turbulence.

In fact, a high level of both demandingness and responsiveness prevents the academic procrastination of students. These two dimensions are higher in authoritative parenting involving close interaction, acceptable and adaptive control, and appropriate independence of children. Therefore, because authoritative parents give freedom and control over their children, they have fewer reasons for procrastination. Permissive parents are generally affectionate and accepting; they exert little control over the behavior of their children and allow them to make their own decisions. Even authoritarian styles with a high control had a negative correlation with procrastination. Regarding elementary students, it seems that both responsiveness and demandingness are considered as the factor of parents' attention and can reinforce doing homework of the school.

The results of this study showed that academic self-regulation was negatively correlated with academic procrastination, and structural modeling analysis showed that academic self-regulation affected students' procrastination. In other words, a higher level of self-regulated strategies reduces academic procrastination, a finding in line with several studies (9, 25, 26, 30, 31, 39). In explaining this finding, it can be said that at the time of doing homework assignments, self-regulated students show a high level of achievement motivation. They try to succeed, enjoy challenging activities, use learning strategies, and set special goals. In fact, awareness of one's thoughts, beliefs, and processes can result in better analyses of different situations and take appropriate behavior and probably less be involved in procrastination (27). Procrastinating individuals are unable to prioritize their goals or tasks; they focus on ineffective and unnecessary tasks, in turn increasing person's anxiety for doing homework.

The present study showed that the memory strategy had a negative correlation with the procrastination of doing homework assignments. This dimension is related to positive beliefs about cognitive abilities and memory performance. People with positive beliefs about their cognitive efficacy believe in their ability to start or complete their assignments. This increases the positive motivational effects for commencing and continuing the assignments, which ultimately reduces the procrastination (41).

Furthermore, there was a negative correlation between targeting and procrastination. The target orientation leads to self-regulated behavior in the academic fields while students who follow performance goals focus on the evaluation of their ability and procrastinate doing their homework assignments (42). Formulating intrinsic goals increases students' enthusiasm about their goals because they independently set their goals in line with their interests and expectations, thereby showing less academic procrastination.

The results showed that self-evaluation correlated with students' academic procrastination. It seems that the components of metacognitive and resource management strategies are more important than cognitive strategies strategy in learning. In fact, metacognitive strategies guide individuals to apply cognitive strategies and backgrounds to achieve the goal. Defect in metacognition makes individuals unable to monitor their work while individuals with a higher level of metacognition become masters in learning;

using these strategies results in academic success, self-efficacy, increased motivation, and self-regulation (43).

Concerning the negative correlation of assistance and procrastination, it can be explained that asking for the assistance of a knowledgeable classmate or teacher is the most important strategy for preventing academic failure. Assistance has advantages such as solving academic problems, actively engaging in the classroom, and increasing student's motivation for learning.

The findings further showed a negative correlation between the responsibility strategy and procrastination in the preparation for the exam and doing tasks. Steel (9) believed that the concept of procrastination significantly overlaps with responsibility. Attributing failures to external factors such as bad teachers, chance, or stable internal factors such as mental ability is the main factor in non-motivation, leading to reduced activity and procrastination. However, evaluating behaviors and accepting responsibility for success can help such students understand that lack of effort has led them to failure. Therefore, responsibility reduces academic procrastination by increasing the academic motivation.

Regarding the negative correlation between organizational strategy and procrastination, it can be suggested that the latter is associated with poor organization and a low motivation level (9). Individuals with high motivation opt for more difficult goals and often savor their endeavors in achieving those goals (44), preventing procrastination.

Finally, the present study showed that parenting dimensions through self-regulation influenced students' academic procrastination, which is consistent with several studies (7, 18, 24, 34).

This finding suggests that parents who explain their expectations to their children and instruct them to determine goals, plan, verify, evaluate and request help of others. Their children have a higher level of self-regulation and likely less involve procrastination. It seems that parents' appropriate behavior with the children makes them self-regulated; conversely, an unbalanced and disproportionate behavior makes them dependent or disobedient. Children learn to set goals, plan, monitor, and control their performance by observing their parents' performance. Self-regulated learners are spontaneous, independent, and use actively metacognitive and cognitive strategies when doing their tasks; these individuals have the proper learning

goals and perseverance necessary to achieve their goals, thereby preventing procrastination.

In addition, studies have confirmed that parent involvement in school activities is higher in authoritative parents compared with non-authoritative ones. According to an adaptation of the expectancy-value theory of motivation, Pintrich and de Groot (45) suggested that parent involvement increases children's intrinsic motivation in academic tasks through parents' support of children's capability beliefs (expectancy). This might help children perceive the tasks as valuable, useful, important, and obtainable, reducing academic procrastination.

The present research had some limitations. First, the results of this study are limited to boy students of the second-period elementary school in the city of Garmeh, Iran. Therefore, the generalization of the results should be done with caution. It is recommended that a similar study be conducted on female students and adolescents. The second limitation of the present study is related to the inherent aspect of its design, namely the correlation method. The third limitation is that the instruments were self-reported, hence there may be the possible bias in the responses. Therefore, using tasks, other reported scale, and experimental methods in future studies are recommended.

5. Conclusions

Structural equation modeling analysis in this study indicated that the dimensions of parenting, namely perceived demandingness and responsiveness through self-regulation, influenced students' academic procrastination. Parents who control their children have high expectations for their children in academic performance, satisfy their physical and mental needs, raise independent and self-reliant children who independently guide their own efforts instead of relying on teachers, parents, and other academic agents. Therefore, it is necessary to train parents on the proper parenting style to raise self-regulated children who do not procrastinate.

Ethical Approval: The Ethics Committee of the University of Bojnord approved this study (Code: 131709). Also, to observe the ethical considerations, the participants signed an informed consent form

Conflict of Interest

The authors declared no conflict of interest.

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