Investigation of the predictor role of self-controlling in academic motivation in high school students: A cross-sectional study

Tayyebeh Kord-Ahmadi[1], Biuok Tajeri[2], Tahmoores Aghajani[1]

1 Department of Psychology, Islamic Azad University, Shahr-e-Qods Branch, Tehran, Iran
2 Department of Psychology, Islamic Azad University, Karaj Branch, Karaj, Iran

Abstract

Original Article

BACKGROUND: The research background shows that self-controlling is a predictor of motivation and academic achievement in adolescence. Despite the importance of self-controlling in predicting academic motivation, no study has been conducted in Iranian society. This study was conducted to investigate the predictor role of self-controlling in adolescent academic motivation.

METHODS: This cross-sectional study was conducted during October 2016 to June 2017 in Tehran, Iran. 201 participants from high school students in Tehran were selected using purposive sampling method and were entered into the research process after obtaining informed consent. Data were collected using demographic checklist, structured clinical interview, Snyder's Self-Monitoring Inventory, and Harter's Motivation Scale, and were analyzed by multivariate multiple regression and hierarchical linear regression in SPSS software.

RESULTS: Data analysis showed that self-control index positively and significantly predicted academic motivation in high school girl students (P < 0.01, β = 0.198).

CONCLUSION: The results of this study, in line with the research background, indicate the predictor role of self-control in adolescent academic motivation. These findings could have clinical applications in designing new educational horizons.

KEYWORDS: Self-Controlling; Academic Success; Self-Monitoring

Citation: Kord-Ahmadi T, Tajeri B, Aghajani T. **Investigation of the predictor role of self-controlling in academic motivation in high school students: A cross-sectional study.** Chron Dis J 2023; 11(2): 76-80.

Introduction

The process of transition from childhood to adolescence is difficult and challenging. The teenager quickly develops physical and sexual maturity, and the family, culture, and society ask him/her to be independent. He/she communicates new relationships with peers and adults, and acquires the readiness and skills necessary for a job and social life. In addition to accepting and adapting to all these changes, the teenager has to gain a coherent identity and a specific response to these difficult and old questions, "who am I?" and "what do I want from my life?" that it will take several years for this process and for answering these questions. According to Erikson, the most important developmental task that teenagers are facing in this direction is the formation of a lasting impression of identity.[1] Self-control skills are one of the abilities that develop in the early years of life and have a significant impact on individual behavioral skills.[2] Self-control is the ability to control oneself, in terms of having mastery over one's desires and appetites. Those who are self-controlled can temper what they want,

Corresponding Author:
Tayyebeh Kord-Ahmadi; Department of Psychology, Islamic Azad University, Shahr-e-Qods Branch, Tehran, Iran
Email: kordahmadit@gmail.com

to ensure that they do not over- or under-indulge. The ability to control the expression of feelings, especially negative emotions, develops in the early years of life and is of particular importance in revealing appropriate and adaptive social behavior. Self-control is defined in psychology with interpretations such as personal control, internal control, and conscience. Self-control is defined as the ability to follow a reasonable request, modify the behavior in accordance with the situation, and delay the satisfaction of a request within the socially accepted framework. The basis of self-control is the ability of the individual to volitionally control the inner and outer processes. In clinical psychology, self-control is associated with optimal therapeutic outcomes, and interventions that improve self-control are of high value.[2] Research findings show that self-control is a predictor of motivation and academic achievement in adolescence. Self-control is the predictor of all outputs leading to academic achievement, including less absenteeism, less negligence, increased study time, and reduced television viewing time in students.[3] Although academic motivation is considered as an important factor in academic achievement, educational systems can also be mutually supportive of academic motivation. Findings of the study by Yardimci et al. showed that the educational system could increase academic motivation in students and facilitate the obtaining of learning skills.[4] Findings of Li et al. showed that planning new methods of learning self-regulation could predict academic achievement in students.[5]

Research background shows that there is a significant relationship between self-control and academic motivation. The results of Stork et al. show that self-control index plays a significant role in predicting academic behavior.[6] Moreover, Ng-Knight et al. showed that self-control was directly related to the academic achievement index.[7] Further, learning self-regulation skills, including self-control, plays an important role in academic achievement.

Despite the studies conducted in the field of academic motivation, no study has been yet done on the relation between self-control and academic motivation in Iranian society. Regarding the importance of academic motivation and its role in academic achievement and the existence of research gap in this area, the present study was conducted to investigate the predictor role of self-control in the academic motivation of adolescent girls.

Methods

The present study was the second part of a cross-sectional study. The data of this study were collected during October 2016 to June 2017. Among female high school students in Tehran, Iran, 201 participants were estimated using Green's formula and were selected using purposive sampling method and entered into the study process after the confirmation of inclusion criteria and obtaining informed consent from parents and children.

Inclusion criteria were: 1) age range of 15-18 years, 2) normal academic performance based on educational background, 3) residence in Tehran and the suburbs with standard deviation (SD) of thirty square kilometers from the center, and 4) obtaining informed consent from the participants and at least one of the parents. Exclusion criteria were as follows: 1) lack of natural intelligence, 2) diagnosis of acute psychiatric disorder based on the Structured Clinical Interview for Diagnostic and Strucatured Clinical Interview Diagnostic (SCID) and Statistical Manual of Mental (DSM)-5, 3) identification of any personality disorder, and 4) abnormal academic performance assuming three SDs from average. Data were collected using demographic checklist, SCID, Snyder's Self-Monitoring Inventory, and Harter's Motivation Scale. The data were collected at a time interval and analyzed through the hierarchical multi-variable regression analysis in the

software environment of SPSS (version 21, IBM Corporation, Armonk, NY, USA). The significance level was considered to be 0.05. All stages of the study were performed after obtaining written consent from the participants and parents and based on the latest version of the Declaration of Helsinki (DoH).

Demographic checklist: This checklist was developed and used by the researcher to collect personal information such as students' age and parental education.[8]

SCID-4: It is a clinical interview that is used to diagnose dysfunctions of axis 1 based on DSM-IV.[9,10] The reliability coefficient between evaluators for SCID is reported to be 0.60.[11] The diagnostic agreement of this tool was favorable for Persian language for most of the specific and general diagnosis with reliability greater than 0.60. The Kappa coefficient for all of the current diagnoses and life expectancy diagnosis was 0.52 and 0.55, respectively.[12]

Snyder's Self-Monitoring Scale: This questionnaire was designed by Snyder aimed at evaluating the self-control index. This tool contains 25 items in the two options (correct and false). The reliability of this questionnaire was estimated to be 0.65 using Cronbach's alpha.

Harter's Motivation Scale: This questionnaire was designed by Harter aimed at assessing student's academic motivation. This tool has 33 items based on a 5-point Likert scale. The reliability of this questionnaire was estimated to be 0.76 using Cronbach's alpha.

Results

Data analysis was done using hierarchical multi-variable regression analysis. The pre-assumptions of the parametric tests were examined before the statistical test was selected. The results of Kolmogorov-Smirnov (K-S) test showed that the distribution of the participants' scores was normal ($P > 0.05$). Moreover, the linear relationship assumption between variables was assessed through the analysis of variance (ANOVA) test and this pre-assumption was confirmed ($P < 0.01$). The coefficient of tolerance and variance inflation of the research variables was greater than 0.1 and less than 10, which indicates that the variables of research are not collinear. The assumption of the independence of errors was evaluated using the Durbin-Watson (DW) Index. Ultimately, the histogram and box-plot curves showed that information related to any of the participants was not outlier. Regarding the findings, the use of hierarchical multi-variable regression analysis was possible.

The age distribution of the students was 16.51 with a deviation of 0.86 and the mean and SD of the students' grade was 18.22 ± 1.32. Demographic findings showed that in terms of mother's education status index, 61 (30.3%) of the participants had diploma, 23 people (11.4%) had associate degree, 69 people (34.3%) had BSc degree, 40 people (19.9%) had MSc degree, and 8 people (4%) had PhD. In terms of distribution of father's education status, 56 (27.9%) of the participants had diploma, 15 people (7.5%) had associate degree, 65 people (32.3%) had BSc degree, 39 people (19.4%) had MSc degree, and 26 people (12.9%) had PhD.

The self-control variable that entered into the prediction of academic motivation equation in the first stage predicted it at a significance level of 0.01 [$P < 0.01$, $F_{(199.1)} = 15.661$]. Squared multiple correlation analysis showed that the value of multiple correlation coefficients (R^2) was 0.073. This indicates that the self-control variable has explained 7.3% of the variance of academic motivation in high school girl students. Regression coefficient between self-control and academic motivation was positive and significant at 0.01 ($P < 0.01$, $\beta = 0.198$). Self-control positively and significantly predicted academic motivation in high school girl students.

Discussion

This study was conducted to investigate the

predictor role of self-control in adolescent's academic motivation. The findings indicated that self-control index positively and significantly predicted academic motivation in adolescent high school girls. In consistence with our findings, the results of Duckworth and Seligman showed that self-control was a predictor of motivation and academic achievement in adolescence.[3] In addition, self-control is the predictor of all the outcomes leading to academic achievement, including less absenteeism, less negligence, increased study time, and reduced television watching time in students.[3,4] In line with the findings of the present study, the results of Stork et al. showed that self-control index played a significant role in predicting academic behavior.[6] Besides, similsr to our findings, Ng-Knight et al. showed that self-control had a direct relation with the academic achievement index.[7] In a wider context, learning self-regulation skills, including self-control, plays an important role in academic achievement. In this regard, the findings of the study by Li et al. showed that planning new methods of self-regulation learning could predict academic achievement in students.[5] Martin et al. related the motivation of academic achievement to that dimension of the motivation that is called internal motivation, by which the person perceives him/herself as having the necessary competence and self-control.[13] Self-control refers to controlling a person's behaviors, feelings, and instincts, despite the incitement to act. A child or adolescent with self-control takes time to think about choices and possible outcomes and then chooses the best. The self-control term refers to the implementation of self-observation, self-evaluation, and self-supporting methods.[3,13] The purpose of self-observation is to maintain active attention to the occurrence of specific thoughts and behaviors. Since attention is the main author of self-observation, one can conclude that the function of attention and self-reliance have an effective and mutually beneficial effect on one another.[14] A person must be able to increase self-control skills to increase mental effort.[15] Self-evaluating relates to judgment about the level or quality of behavior that changes to some of the existing criteria or standards. Self-supporting refers to the implementation of self-reinforcement by the person, if there is a specific criterion for behavior.[16]

Although academic motivation is considered as an important factor in academic achievement, educational systems can also be mutually supportive of academic motivation.[17] The findings of the study by Yardimci et al. showed that the educational system could increase academic motivation in students and facilitate the obtaining of learning skills.[4] The findings of this study could have clinical applications in designing new educational horizons in education.[15,18,19]

This study had some limitations in the implementation process. Due to the limited sample in high school girls' group in Tehran, it is not possible to generalize the results to other groups. It is suggested that in future studies, along with the paper and pen tool, biologic evaluations should be used to evaluate the indices.

Conclusion

This study was a cross-sectional study that was conducted to investigate the predictor role of self-control in adolescent educational motivation. The findings indicated that self-control index positively and significantly predicted academic motivation in adolescent high school girls. These findings could have clinical applications in the perspective of education in the future.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

participated in this study and helped to facilitate the research process.

Financials support and sponsorship

There is no financial support and sponsorship.

References

1. Monacis L, de Palo V, Sinatra M, Berzonsky MD. The Revised Identity Style Inventory: Factor structure and validity in Italian speaking students. Front Psychol. 2016; 7: 883.
2. Friese M, Frankenbach J, Job V, Loschelder DD. Does self-control training improve self-control? A meta-analysis. Perspect Psychol Sci. 2017; 12(6): 1077-99.
3. Duckworth AL, Seligman MEP. The science and practice of self-control. Perspect Psychol Sci. 2017; 12(5): 715-8.
4. Yardimci F, Bektas M, Ozkutuk N, Muslu GK, Gerceker GO, Basbakkal Z. A study of the relationship between the study process, motivation resources, and motivation problems of nursing students in different educational systems. Nurse Educ Today. 2017; 48: 13-8.
5. Li J, Ye H, Tang Y, Zhou Z, Hu X. what are the effects of self-regulation phases and strategies for Chinese students? A meta-analysis of two decades research of the association between self-regulation and academic performance. Front Psychol. 2018; 9: 2434.
6. Stork MJ, Graham JD, Bray SR, Martin Ginis KA. Using self-reported and objective measures of self-control to predict exercise and academic behaviors among first-year university students. J Health Psychol. 2017; 22(8): 1056-66.
7. Ng-Knight T, Shelton KH, Frederickson N, McManus IC, Rice F. Maternal depressive symptoms and adolescent academic attainment: Testing pathways via parenting and self-control. J Adolesc. 2018; 62: 61-9.
8. Pirnia B, Mansour S, Najafi E, Reyhani R. Effectiveness of well being therapy on symptoms of anxiety, stress and depression in men on therapeutic-community. Community Health Journal. 2016; 10(4): 47-56.
9. Pirnia B, Pirnia K, Aghajanpoor M, Mardan F, Zahiroddin A. Relationship between function of hypothalamic-pituitary-adrenal axis and executive functions in chronic methamphetamine users: A cross-sectional study. Asian J Psychiatr. 2018; 35: 113-4.
10. Pirnia B, Pirnia K, Mohammadpour S, Malekanmehr P, Soleimani A, Mahmoodi Z, et al. The effectiveness of acupuncture on HPA functional in depressed patients under methadone maintenance treatment, a randomized double-blind sham-controlled trial. Asian J Psychiatr. 2018; 36: 62-3.
11. First MB, Spitzer RL, Gibbon M, Williams JB. Structured clinical interview for DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition. New York, NY: New York State Psychiatric Institute; 2001.
12. Sharifi V, Assadi SM, Mohammadi MR, Amini H, Kaviani H, Semnani Y, et al. A Persian translation of the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition: Psychometric properties. Compr Psychiatry. 2009; 50(1): 86-91.
13. Martin RD, Kennett DJ, Hopewell NM. Examining the importance of academic-specific self-compassion in the academic self-control model. J Soc Psychol. 2019; 159(6): 676-91.
14. Ozoemena EL, Agbaje OS, Ogundu L, Ononuju AH, Umoke PCI, Iweama CN, et al. Psychological distress, burnout, and coping strategies among Nigerian primary school teachers: a school-based cross-sectional study. BMC Public Health. 2021; 21(1): 2327.
15. Rieger S, Gollner R, Spengler M, Trautwein U, Nagengast B, Roberts BW. The persistence of students' academic effort: The unique and combined effects of conscientiousness and individual interest. Learn Instr. 2022; 80: 101613.
16. Suleman D, Khattak A, Hussain I. Occupational stress: Associated factors, related symptoms, and coping strategies among secondary school-heads. Pakistan Journal of Psychological Research. 2021; 36(4): 529-53.
17. Godawa G, Gurba E, Senejko A. Adaptations by Polish secondary school students to Covid-19 restrictions imposed on education participation. Issues Educ Res. 2021; 31(3): 782-99.
18. Van den Broeck A, Howard JL, Van Vaerenbergh Y, Leroy H, Gagne M. Beyond intrinsic and extrinsic motivation: A meta-analysis on self-determination theory's multidimensional conceptualization of work motivation. Organ Psychol Rev. 2021; 11(3): 240-73.
19. Jorgensen Olsen TM, Mehus I. Students' performance in physical education: The role of differential achievement goals and self-regulated learning. Educ Sci. 2022; 12(2): 142.