Effects of Time Management Training on the Academic Achievement of Female High School Students

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Abstract

Background: Time management skill learning and identification are very effective in the study process, and can reduce the adolescents' waste of time and help them increase the academic achievement. The present study aimed to determine the effect of time management skill on the academic achievement of female students.
Methods: This interventional study was a randomized controlled field trial. The statistical population consisted of all 2785 female second-grade high school students in 2017-2018 covered by health centers of Gorgan, Iran. Forty eligible students were selected and allocated into intervention and control groups. In the intervention group, a group counseling session of time management training was held for 6 hours in two days. A month after intervention, all students completed the questionnaire, and the students' grade point average (GPA) of the first and second semesters were extracted in 2017-2018. To compare the academic achievement we used the Mann-Witny U test, paired t-test, and Wilcoxon test in SPSS-16.
Results: The mean of the GPA of students in control group before and after intervention were 17.95±1.47 and 17.86±1.67, respectively (P=0.43). The GPA in the intervention group was 17.61±0.84 before intervention and showed an increase to 17.75±1.08 after the time management skill training; but the increase was not statistically significant (P=0.43). The results indicated a statistical significant difference in mean scores of 2 subscales; short-term planning and time attitude in the intervention group in comparison with the control group.
Conclusion: Despite the fact that time management skill training did not lead to the academic achievement in students, it could improve the short-term planning. Since the follow-up of the present study was short-term, it needs time to improve planning and affecting the academic achievement. It is suggested to examine this assumption in longitudinal and long-term studies.

Introduction

Academic failure occurs for students at most high schools, as some of them drop out. The researchers consider the students' puberty and engagement with puberty issues and problems, including social inconsistencies as reasons for their failure (1). In recent decades, when the women's education levels are equal to men, the women's academic achievement and success have been also taken into consideration (2). Women's education in the present era is not limited to a particular society and nation and has affected all societies. It has many consequences for society, structure and function of family, such as social participation, familial relationships, fertility, raising children, and the couple's feeling about the family life (2). Women need to have a sense of merit in order to engage in behaviors required for organization or family, and the merit can be obtained from formal training or education (3).

Time management is an important issue that everyone can benefit from it before running activities over time. Time management includes planning, organizing and controlling skills. Shafii (2018) argues that the time management is the process of determining needs and selecting goals to achieve those needs and setting priorities and planning tasks in order to achieve goals (4). Briddell (1986) describes the time management as clarifying needs and demands, ordering them based on priorities and allocating necessary time and resources to them (5). Time management is a personal discipline by which the humans can achieve what they want (6). Due to the time management learning, the individuals lose their energy and obtain higher self-esteem. Through time management skill learning, the individuals feel that they can control their environment and destiny (7). The goal of time management is to lead a set of scheduled goals to creativity and innovation in the workplace in order to upgrade life, reduce cost and lost opportunities, prevent the unemployment, reduce errors, and reach a proper rest time (8).

The researchers have argued that the time management strategies are important cognitive dimensions of self-regulated learning that can lead to the academic achievement (8). Terry (2002) found positive relationships between time management, self-regulation, self-efficacy (9) and stress reduction (10).

It seems that students continue studying without a clear purpose, and most of them have no strong motivation for continuation of study and are faced with the use of low educational opportunities. Among the academic years, the tenth grade of high school is significantly important. During this year, a great number of students adapt to conditions of the new grade due to the passage from a grade to another and entry to the higher education, but they still have no necessary experience to overcome problems of the education grade. Furthermore, the selection of field of study, which affects their academic future, is also the source of stress for students. In the present study, the researchers decided to teach time management skills to students at this critical grade, change their attitude towards the time, and take effective step to increase their academic performance through teaching basics of goal-setting, planning and using the optimal conditions of study.

Methods

This interventional study was a two-group randomized controlled field trial with a pretest-posttest design. The statistical population consisted of all 2785 female second-grade high school students in Gorgan, Iran during the academic year of 2017-2018. The research sample also included single female students who were studying for the first time in the 10th grade of high school in a public school of Gorgan and were willing to cooperate in the study. To determine the sample size, we utilized the study by Gharamaleki et al. (11) who had studied the effectiveness of time management skill training on students' procrastination. According to the mean scores of procrastination in the intervention and control groups (83.46±10.6 and 94.83±10.86 respectively) at the confidence level of 0.95 and 90% test power, 20 samples selected for each group. The sample loss was not considered in the study due to the existence of only a session in the study.

$$n = \frac{(s_1^2 + s_2^2)(z_{1-\frac{\alpha}{2}} + z_{1-\beta})2}{(x_1 - x_2)^2}$$

Using the Iran Health Information System, 442 female second-year high school students in the tenth grade were selected from two centers which represented the

entire population of Gorgan, and then 147 students were selected using the systematic random sampling

During a telephone call with students' parents and explaining the reason for holding the group session and the aim of study, the parents were asked to visit the health centers to complete the questionnaire. Ultimately, 82 out of 147 students visited health centers to respond to the questionnaires. The consent forms were also given to them. After completing and collecting the questionnaires, the scores were determined for each students. Then 40 out of 82 students were selected according to the lowest scores. Inclusion criteria included studying in a public school of Gorgan and being single. Based on the random method, 20 students were allocated in the intervention group and 20 in the control group. Blinding was not performed in the study. Students in intervention group were encouraged not to give any information about the content of training classes to the students in control group (11).

Data was gather using questionnaire including demographic and educational information (field of study, father's education level, mother's education level, father's job, mother's job, and family's income; the grade point average, which was the students' average score in transcript of records) and the Briton and Tesser time management questionnaire (1991). The time management questionnaire including 18 questions and three subscales; the short-term planning (items 1-7), the preferred time for order (time attitude) (items 8-13), and long-term planning (items 14-18) (12). The Persian version of questionnaire was adopted by Jahansir et al. (2008), and its validity was confirmed. The reliability of questionnaire was confirmed using the Cronbach's alpha (α=0.85) (13). Answers were on a Likert scale including always (score 5), often (score 4), sometimes (score 3), rarely (score 2), and never (score 1). Scoring in questions 8, 10, 11, 13, and 16 was reversed. The range of scores was from 18 to 90. A higher score on each of subscales and the whole questionnaire indicate better performance in time management (14).

The skill training sessions were conducted as group training by the researcher at 6 hours and two days in two health centers of Gorgan (15). Therefore, the intervention group was divided into two smaller 10-individual groups; and group sessions of time management training were held for groups (16). Table 1 presents titles of the group sessions.

Table 1. Titles of sessions of time management skills training

Session	
1	Group members' familiarization with each other and stating the purpose of classes
2	An introduction to the importance of life skills and the need to learn them
3	An introduction to time management and its benefits
4	Identifying cognitive errors that lead to procrastination and waste of time
5	Time-wasting factors
6	Methods for improving time management skills
7	Planning and prioritizing activities and goals to improve the time quality
8	Time management tools and techniques
9	Reviews and obtain feedback

The sessions were based on the brainstorming. The intervention group was asked not to share the information received with people outside the group. A time was assigned to problems with individual nature after the end of group sessions; and 3 individuals were referred to the counselor. A month after the end of skill training sessions, time management skills were measured in samples of two research groups by self-report using the Briton-Tesser tools, and the scores were recorded (12). At the end of academic year, the second term point average of two groups of high school was obtained and compared with the first grade point average, and finally, the effect of time management skills on academic achievement (subtracting the grade point average of two times) was measured. SPSS Statistics for Windows, version x.0 (SPSS Inc., Chicago, Ill., USA). Normality of quantitative variables were assessed using Shapiro-Wilk test. To compare the academic achievement scores in intervention and control groups after the intervention, the independent t-test was used in the case of normal data distribution and similarity of scores at the beginning of study; and Mann-Whitney test was used in lack of data normality. The paired t-test was used to compare scores before and after the academic achievement in each group, otherwise the Wilcoxon test was used. The significance level of study was considered to be 0.05.

Results

Results indicated that 29 students (72.5%) were studying in humanities, 8 (20%) in natural sciences, and 3 (7.5%) in other fields of study. Most of mothers also held high school diploma (55%) and were housewives (80%) and most of fathers were under high school diploma (40%) and self-employed (55%). The results indicated that 80% of students in the control group and 50% in the intervention group were living in families with income levels higher than ten million Rials.

. The comparison of students' academic achievement before intervention in the intervention and control groups indicated that students' GPA was greater in the control group before the intervention than the intervention group (Table 2), but the difference was not statistically significant. The mean score of students' academic achievement in the control group in the second term was higher than the intervention group. The results also indicated that the students' GPA in the

control group decreased in the second term compared to the first term, but the decrease was not statistically significant; and the students' GPA in the intervention group increased slightly in the second term compared to the first term. However, the increase was not statistically significant.

Table 2. Comparison of academic achievement scores in intervention and control groups before and after intervention

Groups	Before (Mean±SD)	After (Mean±SD)	P-value
Control	17.95±1.47	17.86±1.67	0.437
Intervention	17.61±0.84	17.75±1.08	0.364

Table 3. Comparison of mean score of time management in control and intervention groups before and after time management skill training

Groups	Before (Mean±SD)	After (Mean±SD)	P-value
Control	52.4±1.32	53.25±3.87	0.265
Intervention	52.2±4.51	66.2±2.12	<0.001
P-value	0.865	<0.001	

The results indicated the statistical significant difference (P<0.001) between the intervention and control groups in total time management scores (Table 3).The effects of short-term planning of two groups were evaluated before and after the intervention. The results indicated a significant statistical difference between the intervention and control groups in mean scores of short-term planning at a level of P<0.001. The results of comparing mean scores of time attitude in both control and intervention groups before and after the intervention also indicated a statistical significant difference at a level of P<0.001. Furthermore, results of long-term planning scores in the intervention and control groups before and after the intervention also indicated a statistical difference between control and intervention groups in terms of long-term planning scores (P=0.029) (Table 4).

Table 4. Comparison of mean scores of time management subscales in control and intervention groups before and after time management skill training

Subscales	Group	Before (Mean±SD)	After (Mean±SD)	P-Value[*]
Short-term planning	Control	19.9±1.16	20.1±2.13	0.691
	Intervention	19.55±2.10	29.25±1.18	<0.001
	P-Value[**]	0.801	<0.001	
Time attitude	Control	17.65±0.32	17.65±1.12	>0.99
	Intervention	17.75±1.07	20.65±3.14	<0.001
	P-Value[**]	0.721	<0.001	
long-term planning	Control	14.85±0.72	15.5±2.21	0.024
	Intervention	14.9±1.04	16.3±1.32	0.034
	P-Value[**]	0.812	0.029	

* P value for before-after comparisons, ** P value for between groups comparisons

Discussion

The present study was conducted to determine the effect of time management skill training on the academic achievement of female second-term students in the tenth grade in Gorgan during 2017-2018. According to results, unlike the control group, the students' GPAof the intervention group in the second term were slightly higher than the first term, but statistically, teaching time management skills had no significant impact on the students' academic performance (mean scores). Results of the present research were consistent with findings by Sobral et al. (2017) (19), Doustian et al. (2014) (20), Bruce et al. (2017) (21) and Ahanchian et al. (2013) (22). In the studies, time management had no significant effect on the academic achievement. Perhaps, it was due to the fact that the time management was a skill that became effective due to the continuous training and changing the students' behaviors and attitudes; and the changes cannot be evaluated only once. Furthermore, Alsalem et al. (2017) examined the effect of time management to increase self-efficacy beliefs and academic achievement and concluded that time management had a significant effect on the students' academic achievement (23). The effect of time management on students' academic performance was a result of study in Sobral et al. (2017), so that individuals with higher ability of time management also had significant academic achievement (19). Mackenzie and Schwartz (2001) found a correlation between time management and stress reduction, thus increasing the academic achievement (24). Aoun et al. (2017) also conducted a research on effect of time management on academic scores (achievement) in students. The researchers' findings indicated that time management scores were positively correlated with academic achievement (12). Guangas et al. (2018) examined the students' time management and its correlation with academic scores and concluded that high time management had a positive relationship with high academic scores (25). According to other studies, the time management had a positive impact on the academic achievement because it decreased stress and also increased the academic achievement in students. Perhaps, different sample sizes were the main

reasons for difference between results of the present research and the researchers' studies. Since the follow-up of the present study was short-term, there was a need for time after improvement of planning until its effect on the academic achievement, but it was not taken into consideration in the present study.

Findings of the present study also indicated that a statistical significant difference between total mean scores of time management in control group and experimental groups; hence, the intervention improved time management in intervention samples. Consistent with the above findings, Alsalem et al. (2017) studied the effect of intervention on increasing the self-efficacy beliefs and academic achievement and concluded that the intervention improved time management (23). Sobral et al. (2017) found that training was effective in increasing time management in samples (19). Aoun et al. (2017) also acknowledged the role of intervention in improving time management skills (12). Their results were consistent with the present research.

The present study indicated that there was a statistical significant difference in the mean scores of short-term planning in control and experimental groups. Consistent with results of the hypothesis, Aoun et al. (2017) mentioned that the short-term planning was an effective way to manage time because programs led to rapid changes and were more flexible (12). Therefore, students were interested in planning to study before final exams. They did short-term and intensive planning for success in exams, despite high volume of lessons and were usually successful in this regard. Findings of the present study confirmed the above description (26).

Results of the present study also indicated that there was a statistical significant difference between two groups in the mean scores of time attitude in two groups. Jahanseyr et al. also indicated that the time attitude score in the intervention group was higher than the control group (13), and it was consistent with findings of the present study. Furthermore, changing attitudes and beliefs cause positive impact on individuals and their performance. By changing the attitude, time management will become easier and short-term and long-term planning will be better. When practices are performed at right time, they will make the individuals happy and satisfied, and decrease their stress and anxiety (12).

Data of the present study indicated that there was no statistical significant difference between two groups in long-term planning in both intervention and control groups. Confirming these findings, Aoun et al. (2017) found no positive relationship between the intervention and long-term planning (12). Since the long-term planning does not lead to fast and tangible changes, students do not use this component in their study planning, but experts suggest that students should look at their goals more open, and achieve them by long-term planning (23).

Conclusion

Findings indicated that time management training for students in the intervention group significantly caused a difference in students' academic achievement in the intervention group in comparison with the control group, but the students' higher point average in the intervention group and lower students' point average in the control group at a later stage after the time management intervention indicated the importance of time management in increasing the students' grade point average.

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Ethical statement:

This study was approved by ethics committee of the Golestan University of Medical Sciences.

Conflict of interest:

The authors declared no conflict of interest.

Author contributions

Conceptualization: Asieh Sadat Baniaghil/ Maryam Eksir, methodology, analysis, research review: Asieh Sadat Baniaghil/ Maryam Eksir/ Nasser Behnampour. Whiting- review and editing: Asieh Sadat Baniaghil/ Maryam Eksir/ Nasser Behnampour.

References

1. Wenglinsky H. The link between teacher classroom practices and student academic performance. *EPAA*. 2002; 10:12. [View at publisher] [DOI] [Google Scholar]
2. Thompson, Jane. Learning liberation: Women's response to men's education. Vol. 14. Taylor & Francis, 2017: 207 [Google Scholar]
3. Hughes, Mary; Kennedy, Mary. New Futures: changing women's education. *Taylor & Francis*, 2017: 163.
4. Shafii M, Dehghanpour F, Akbari R, Kamali Ardakani M, Baghian N, Dehghani Tafti A. The Relationship between Time Management and the Academic Achievement Motivation in Students: A Case Study among the Students of the Public Health School in Yazd Shahid Sadoughi University of Medical Sciences in 2016. *Manage Strat Health Syst*. 2018 ;3(2):135-43. [View at publisher] [DOI] [Google Scholar]
5. Rakhshan M, Rostami K, Setoodegan E, Eslami J. The relationship between leadership style and time management in senior and middle nursing managers. *Latinoamericana de Hipertensión*. 2019;14(1):26-31.[View at publisher] [DOI] [Google Scholar]
6. Kouzes JM, Posner BZ. Credibility: *How leaders gain and lose it, why people demand it. 2, editor: John* Wiley & Sons; 2011. 272 p.
7. Razali S, Rusiman M, Gan W, Arbin N, editors. The impact of time management on students' academic achievement. *JPCS*: Conference Series; 2018: IOP Publishing.
8. Al-Zoubi M. The Effect of the Time Management Art on Academic Achievement among High School Students in Jordan. *Journal of Education and Practice*. 2016;7(5):158-67. [View at publisher] [DOI] [Google Scholar]
9. Terry KS, P The effects of online time management practices on self-regulated learning and academic self-efficacy [PhD]: University Libraries, Virginia Polytechnic Institute and State University; 2002.
10. Zhu J, Mostafavi A. Discovering complexity and emergent properties in project systems: A new approach to understanding project performance. *International Journal Of Project Management*. 2017;35(1):1-12. [View at publisher] [DOI] [Google Scholar]
11. Sobhi-Gharamaleki N, Rajabi S. Efficacy of life skills training on increase of mental health and self-esteem of the students. *Procedia-Social and Behavioral Sciences.* 2010;5:1818-22. [View at publisher] [DOI] [Google Scholar]
12. Aeon B, Aguinis H. It's about time: New perspectives and insights on time management. *Acad Manag Perspect*. 2017;31(4):309-30. [View at publisher] [DOI] [Google Scholar]
13. Jahansir K, Salehzadeh K, Vesaghi H, Mousafifar E. A study of the effect of time management on academic achievement of students of Islamic Azad University Maragheh branch. *Curriculum Planning Knowledge & Research In Educational Sciences*. 2008;21(16):97-114. [View at publisher] [DOI] [Google Scholar]
14. Sohrabi Z, Ghovati F, Mirhosseini F, Hosseini F. The relationship between achievement motivation and time management and academic achievement Undergraduate Medical University of Medical Sciences. *Razi Journal of Medical Sciences*. 2016;23(150):35-45. [persian] [View at publisher] [DOI] [Google Scholar]
15. Khodam H, Kolagari S. Impact of workshop training of Time management skills on its application by head nurses. *IJNR*. 2009;4(13):63-9. [View at publisher] [DOI] [Google Scholar]
16. Shafiabadi A. Group counsultation group dynamics. 1 ed. Tehran: Roshd; 2014.
17. Tracy B. Time power: A proven system for getting more done in less time than you ever thought possible: Amacom Books; March 28, 2007. 109-30 p. [View at publisher] [Google Scholar]
18. Fata L, Mohammad khani SK, M. Practical guide of life skills training workshops. *Tehran: Danhze Pub*; 2006. 208 p.
19. Sobral F, Furtado L, Islam G. The pathways that make new public employees committed: A dual-process model triggered by newcomer learning. *Journal of Public Administration Research and Theory*. 2017;27(4):692-709. [View at publisher] [DOI] [Google Scholar]
20. Doostian Y, Fattahi S, Goudini AA, Azami Y, Massah O, Daneshmand R. The Effectiveness of Self-regulation in Students' Academic Achievement Motivation. *PCP*. 2014;2(4):237–46.[persian] [View at publisher] [DOI] [Google Scholar]
21. Burrus J, Jackson T, Holtzman S, Roberts RD. Teaching high school students to manage time: The development of an intervention. *Improving Schools*. 2017;20(2):101-12. [View at publisher] [DOI] [Google Scholar]
22. Ahanchian M, Lotfi fatemi S. The relationship between time management skills and academic achievement in anesthesiology and operating room students. *Military Caring Sciences*. 2015;2:96-105.[persian] [View at publisher] [DOI] [Google Scholar]
23. Alsalem WSY, Alamodi LA, Hazazi ATM, Shibah AM, Jabri SA, Albosruor ZA. The effect of time management on academic performance among students of Jazan University. *Egypt J Hosp Med*. 2017;69(8):3042-9. [View at publisher] [DOI] [Google Scholar]
24. McKenzie K, Schweitzer R. Who succeeds at university? Factors predicting academic performance in first year Australian university students. *Higher Education Research & Development*. 2001 1;20(1):21-33. [View at publisher] [DOI] [Google Scholar]
25. Goings R, Shi Q. Black Male Degree Attainment: Do Expectations and Aspirations in High School Make a Difference?. *A Journal on Black Men*. 2018;6(2):1-20.DOI: 10.2979/spectrum.6.2.01[View at publisher] [DOI] [Google Scholar]
26. Heydari R, Razavi M, Saidi E. The Relationship between Study and Time Management Approaches with Academic Achievement in High School Students in Taybad City [MSc]: Islamic Azad University Taybad Branch; 2018.
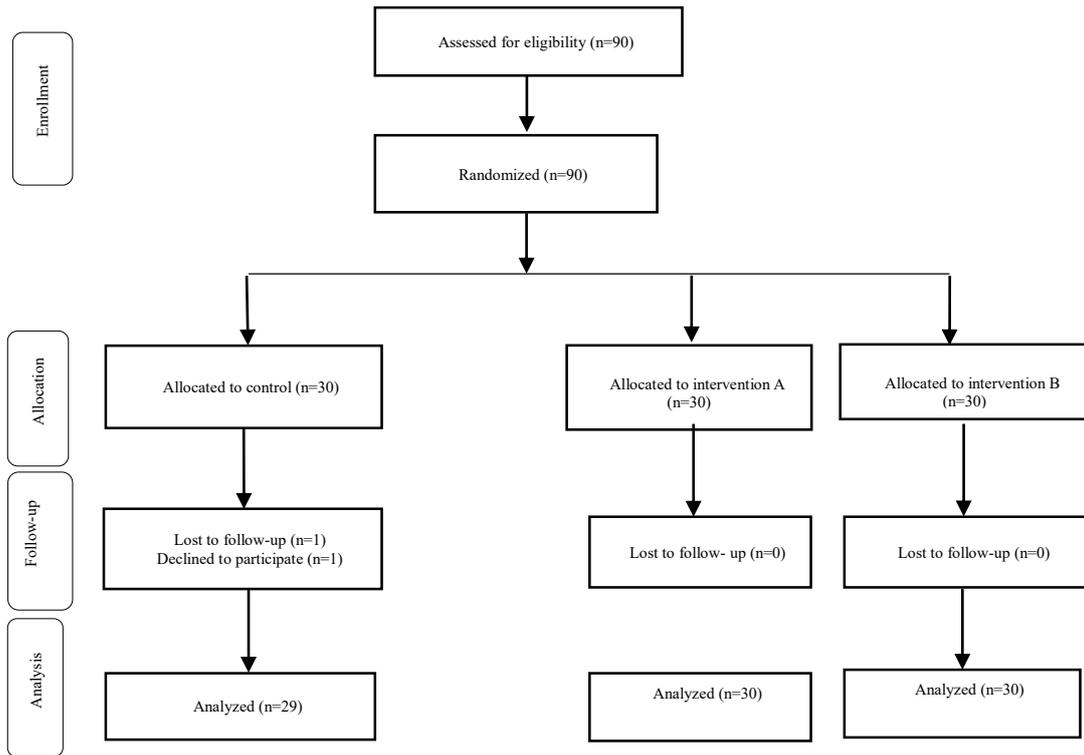
Figure 1. Flowchart of the process of participants' allocation and analysis