تأثیر تربیت در امتحانات از لحاظ علمی، با استفاده از آزمون‌های توانمندی‌های فردی و علمی از طریق آموزش مدیریت زمان

**خلاصه و هدف:** هدف این پژوهش از لحاظ علمی از لحاظ علمی، با استفاده از آزمون‌های توانمندی‌های فردی و علمی از طریق آموزش مدیریت زمان، بررسی اثر این تربیت در امتحانات بود.

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**واژگان کلیدی:** آموزش مدیریت زمان، مؤلفه توانمندی، آموزش مدیریت زمان، مؤلفه توانمندی، آموزش مدیریت زمان، مؤلفه توانمندی.
INTRODUCTION

Time management skill is considered important both in terms of students’ educational learning and reaching their goals (1). Furthermore, it has some benefits for students, including: 1) reduced procrastination; 2) acquiring more control and feeling less stress; 3) accomplishing more tasks; and 4) enjoying leisure time (2). Students who are well aware of time management skills and use them appropriately are more satisfied than students who do not apply these skills efficiently (3). According to Kisa and Ersoy (2005), most of students lack time management skills (4).

The influence of time management on students’ academic achievement depends on their educational levels (5). Adams and Blair (2019) found that students’ perceived control of time was the factor that correlated significantly with cumulative grade point average. On average, it was found that time management behaviors were not significantly different across gender, age, and entry qualification (6). Subramanian (2016) showed that time management positively affects academic achievement, and boys utilize this skill more than girls (7). Dahle, Osman, and Mohamed (2015) found that academic achievement is related to two behavioral dimensions of time management, namely short range planning and long range planning, but time attitude has no effect on students’ educational achievement (8). Indreica, Cazanb, and Trautac (2011) demonstrated that time management training, along with an educational consultant’s guidance, significantly promoted academic performance and, consequently, led to academic achievement (9). Generally, research showed that there is a relationship between students’ time management skills and their academic achievement (1, 5, 7-16), and students who are able to manage their time efficiently may reach the highest levels of academic achievement (11, 17, 18). However, several studies have found that there is no relationship between time management skills and academic achievement (19, 20). In a causal-comparative analysis, by James Swart, Lombard, and Jager (2010) no significant relationship was found between African engineering students' time management skills and their academic achievement. In the current study, the time management protocol was used to examine academic achievement of female students with low socioeconomic status (21).

Resilience is a dynamic concept (22) and it can be learned and strengthened (23). Time management is an important indicator of students’ resilience (24) and alleviates students’ stress substantially, therefore they would not be worried about unfinished homework or tasks and finishing them in due time anymore; however, their resilience would promote and they would accept changes more readily. Resilient students insist on submitting their tasks in due time (25). Kestler, Taasoobshirazi, Johnson, and Jackie (2015) showed that resilient students’ effective time management leads them to higher levels, and resilient students use time management skills more than resilient ones (26). Numerous studies have been conducted on time management and its influence on academic achievement, but there is no integrated research on resilience. Therefore, the current study aimed to examine two following hypotheses: Does time management training influence students’ academic achievement? and Does time management training influence students’ resilience?

METHODS

The statistical population of this study was all female nursing students of Mashhad University of Medical Sciences in 2018-2019 that among them, 60 students were selected by simple random sampling. The participants were 20-23 year-old girls (M = 21.10, SD = 0.44).

Connor-Davidson Resilience Scale (CD-RISC): this scale was developed by Connor and Davidson in 2003 and is applicable for above 15-year-old individuals. It consists of 25 items which are rated on a Likert scale, ranging from 0 (not true at all) to 4 (true nearly all of the time). Respondents’ minimum and maximum scores are 0 and 100, respectively. And the above scores show higher levels of resilience. Connor and Davidson (2003) reported Cronbach’s alpha of 0.89 and the test-retest reliability coefficient with a 4 week interval between measurements was 0.87. Mohamadi (2007) standardized this scale for Iranian people. He tested this scale with 248 subjects and the Cronbach’s alpha measure of internal consistency showed reliability of 0.89 (27). Jokar (2009) confirmed the validity of this scale using factor analysis and reported validity coefficient of 0.73, using Cronbach’s alpha (27). To determine the validity of this scale, first the correlation of each expression with the total score of the category was calculated and then the factor analysis method was used. Calculation of the correlation between each score and the total score except for expression 3, showed coefficients between 0.41 to 0.64. Then scale expressions were factor analyzed by principal components method. Before extracting the factors based on the expression correlation matrix, two KMO indices and Bartlett sphericity test were calculated. The KMO value was 0.87 and the chi-square value in Bartlett test was 28/556, both of which showed the adequacy of evidence for factor analysis. In a study conducted by Samani, Jokar and Sahragard among students, its reliability was reported to be 0.93 and validity (by factor analysis and convergent and divergent validity) was achieved by test makers in different normal and at-risk groups (28). The reliability of this questionnaire in the present study was calculated using Cronbach's alpha and the value of 0.79 was obtained, which is a desirable value.

Academic achievement: The criterion of academic success in this study was the lack of failed history and the average grade point of the last two semesters of the student (more than 15 successful and less than no academic success). The average grade point of two semesters of students was obtained using the student number and with the cooperation of the education unit. It should be noted that students had different numbers of units and studied in different semesters. This study was conducted using a pretest-posttest quasi-experimental with control group design. The statistical population of this study consisted of all female nursing students of Mashhad University of Medical sciences in 2018-2019. At first, one college was selected via convenience sampling, and then two classes were selected from that university. The students were assigned to experimental
(n=15) and control (n=15) groups, randomly. At first, participants completed the resilience scale and pretest scores were calculated. Then, the experimental group attended 10 sixty-minute sessions of time management training (2 times a week); the control group received no intervention. At the end of the training period, both groups recompleted the resilience scale and posttest scores were calculated. The present researchers used Tracy’s (2008) Time Management Training Tools in their time management training program. The materials were mostly presented cooperatively. The researcher presented syllabus and main content of each session simultaneously to all students, and then students went into discussions actively. Each session included reviewing previous topics, direct training via lecturing, group discussions, brainstorming, role-playing, and summing up. The inclusion criteria were studying, volunteering, and being a female nursing student of Mashhad University of Medical Sciences, and the exclusion criterion included more than twice absences from the sessions and being a guest student. The contents of training sessions are outlined in Table 1. Since this was a pretest-posttest quasi-experimental with control group, covariance analysis was used for statistical control of initial differences to examine the effect of time management on academic achievement and resilience. The covariate variable was the initial difference that was measured as a pretest. The collected data were analyzed using SPSS 24.

**RESULTS**

According to the obtained results, the standard deviation and mean age of experimental group were 0.41 and 21.20, and the standard deviation and mean age of control group were 0.53 and 21.45, respectively. The mean ages of experimental and control groups were compared using the independent t-test. Results of the independent t-test showed that, with (P = 0.26), there was no significant difference between ages of two groups (p > 0.05).

In order to answer the research questions, we used the multivariate covariance analysis. The results of homogeneity of regression slope of academic achievement and resilience pretest and posttest in experimental and control groups showed that both groups have similar slopes. The F value and statistical significance of academic achievement and resilience were (F(2,24)=0.68, P≤0.54) and (F(2,24)=1.17, P≤0.12), respectively. The results of Levene's test, which examined the homogeneity of variance of dependent variables in experimental and control groups, showed that the variances of academic achievement (F(1,28)=0.05, P=0.81) and resilience (F(1,28)=1.75, P≤0.19) were equal in these groups. Furthermore, the results of Box's test of covariance matrices of dependent variables in experimental and control groups showed that their covariance matrices are equal (Box M=1.89, F=0.58, P≤0.62). The results of the multivariate covariance analysis showed that there is a significant difference between experimental and control groups in terms of academic achievement and resilience; that is, the effect of time management training on the linear combination of academic achievement and resilience is significant (Wilk's Lambda=0.14, F(2,25)=78.12, P<0.01). Table 2 shows that, after controlling for pretest effects, there is a significant difference between experimental and control groups in terms of academic achievement (F=35.13, P=0.01, partial ETA square=0.57) and resilience (F=104.91, P>0.01, partial ETA square=0.80). The

**Table 1. The outline of time management training sessions (Tracy, 2008)**

<table>
<thead>
<tr>
<th>Session</th>
<th>Objective</th>
<th>Content</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Building initial relationship</td>
<td>Introducing students to each other; presenting the terms of participating in the program; expressing goals of the training course, including concept of time and its importance, benefits of managing time</td>
<td>Lectures Cooperative</td>
</tr>
<tr>
<td>2</td>
<td>Introducing capabilities and procrastination</td>
<td>Reviewing individual’s cognitive errors and capabilities; procrastination and time wasting; reviewing negative outcomes of ignoring time during daily activities</td>
<td>Discussions Brainstorming</td>
</tr>
<tr>
<td>3</td>
<td>Introducing time wasting and planning</td>
<td>Reviewing the agents of wasting time; introducing methods of saving time and appropriate use of daily, weekly and monthly work schedules</td>
<td>Brainstorming Discussions</td>
</tr>
<tr>
<td>4</td>
<td>Introducing the importance of goals and their properties</td>
<td>Determining goals of daily activities and the properties of a good and progressive goal</td>
<td>Brainstorming Cooperative</td>
</tr>
<tr>
<td>5, 6</td>
<td>Introducing the necessity of goal prioritizing in planning</td>
<td>Prioritizing goals, tasks and activities and appropriate planning for performing them (learning how to prepare a checklist of activities); planning daily, weekly and monthly activities</td>
<td>Debating Role playing Explaining</td>
</tr>
<tr>
<td>7</td>
<td>Introducing various methods of coping with time wasting</td>
<td>Reviewing various methods of coping with time wasting and disturbing thoughts</td>
<td>Brainstorming Debating</td>
</tr>
<tr>
<td>8</td>
<td>Introducing various methods of coping with unnecessary tasks</td>
<td>Practicing the skill of saying no in the face of unnecessary demands and tasks</td>
<td>Role playing Cooperative</td>
</tr>
<tr>
<td>9</td>
<td>Introducing positive thinking</td>
<td>Producing positive self-talk and self-concept about one's own capabilities and getting to know talents and capabilities of successful people</td>
<td>Role playing Cooperative</td>
</tr>
<tr>
<td>10</td>
<td>Reviewing all sessions and assessment</td>
<td>Reviewing and summing up; asking for participants' feedbacks</td>
<td>Cooperative Lectures</td>
</tr>
</tbody>
</table>
adjusted means of academic achievement in experimental and control groups were 17.25 and 16.88, and the adjusted means of resilience in experimental and control groups were 59.20 and 55.79, respectively. Based on the results of the covariance analysis and the adjusted means, and considering the research limitations, it can be said that time management training has been effective in enhancing academic achievement and resilience among students.

**DISCUSSION**

The present study aimed to examine the effectiveness of time management training on nursing students' academic achievement and their resilience. In short, time management training is effective in students' academic success and resilience. Students who know time management methods, use these methods, and regulate their time in a more appropriate way, show more desirable academic performance and resilience than students who lack these abilities.

The present researchers found that time management training affects academic achievement positively. Some studies have shown that poor time management leads to lower academic performance (24,29). Kelly (2003) believed that people with higher time management scores may also have better scores on job satisfaction and life satisfaction, and achieve more academic achievements (26). In line with our study, several studies have demonstrated the relationship between time management and academic performance (1, 5, 7-16, 30-32). These studies have shown that time management correlates with students' academic achievement, and improving time management-related functions may increase students' academic achievement. Besides, these findings are inconsistent with findings (19, 20, 21) of those who showed that there is no relationship between time and academic achievement. In considering the mechanism of action of time management, it can be seen that when time management skills promote, students make more effort, which leads to their academic performance improvement. A probable explanation for this finding is that when time management skills promote, students make more effort, which would definitely lead to better educational performance and outcome, and this would improve their grade point average. The positive effect of time management on academic achievement can be explained indirectly, as well. As researchers have shown, the positive effect of time management on individuals' physical and psychological health may decrease their psychosomatic problems, stress and work-related psychological pressures, and may consequently lead to physical and psychological health improvement, which promotes performance in different aspects of individuals' life and particularly students' educational performance (33).

The second finding of our study was about time management training which may increase students' resilience. This finding is in line with (26;34;35) studies. There is a mutual relationship between resilience and time management. Students with higher levels of resilience skills, use time management and planning skills more and make less academic procrastination. Because of the high correlation of resilience with positive features, such as self-esteem, they act according to their abilities in relation to the given task and persist on completing it; however, if they fail, they replan and organize their time in a different way. Also, one of the factors that may promote students' resilience is using time management techniques and skills. Students' stress and anxiety mostly result from their low resilience level. This result from lack of time management skill and other appropriate skills for coping with emotions. Students who use time management strategies show more perseverance and optimism for completing their tasks in due time. They show determination in the face of external and unplanned factors, have control on their environments, and have higher self-esteem due to in-time task completion. In other words, resilience-related characteristics, such as discipline, optimism, problem solving skills and intelligence, help students cope with various and important life issues which enable them to consider unpleasant events as learning opportunities.

According to the results of the present study, it seems that when facing academic challenges and issues related to education, the use of time management ability plays an important role in diagnosing failures of students and provides them with a broader insight. Therefore, the results of the present study can justify the officials in paying more attention to the time management variable in educational planning. This research had several limitations. First, mean of grade point average was not considered an appropriate criterion for assessing academic failure or success. Students might show academic achievement or underachievement during a certain semester due to different reasons. Second, only female students were included in the current study. Possible differences between girls and boys make it impossible to generalize these findings to all students with certainty. Furthermore, this study was limited to a specific
age range (20-23 year-old girls), which questions whether its results are generalizable to all age ranges. Third, the college and participants were selected from one city and culture, which may not represent all cities or cultures. The present findings provided some applied implications for educational counselors, students and professors. First, all educational counselors and psychologists should know how to plan and manage time appropriately, so that they can guide students and encourage them to apply time management techniques in the next stages. They can hold weekly or monthly meetings with each student, monitor their schedules, and check whether they are progressing. Second, time management training pack (including goal-setting, determining priorities and tasks, controlling activities, and self-evaluation) should be provided and delivered to colleges for students’ use. Third, different courses or training workshops should be held for students at the beginning of the academic year. These courses may introduce students to the concepts of goal, planning and time management, as well as reduce their uncertainties; furthermore, they may show them how time management affects their academic achievement.

Ethical considerations
Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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