Effectiveness of Online Reality Therapy on Exam Anxiety and Academic Procrastination of Male High School Students: A Quasi-experimental Study

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ABSTRACT

Background: Procrastination is considered as an obstacle to academic progress because it reduces the quality and quantity of academic success by increasing stress and negative consequences in the academic life of students. This study aimed to determine the effectiveness of reality therapy on exam anxiety and academic procrastination among male high school students.

Methods: The current research is a quasi-experimental study with a pre-test-post-test and follow-up design. The statistical population of the current research is all high school male students in Sari city (Academic year 2021-2022), and the participants were selected using simple random allocation sampling method. 2 high schools were randomly selected from each district. The participants of this research included 40 male students who were allocated to two groups of experiment and control (20 in each group), using the simple random sampling. The experimental group received online reality therapy during 8 one-and-a-half-hour sessions, and the control group were placed on the waiting list. After the end of the treatment period, both groups were subjected to a post-test and a follow-up test. Friedman's test anxiety questionnaires and Solomon's academic procrastination were used to collect data. The data were analyzed through analysis of variance test with repeated measures using SPSS-25 software.

Results: The results showed that mean±SD reality therapy significantly reduced the mean exam anxiety (46.96±7.65 vs. 21.54±4.50; P=0.001) and procrastination (51.30±6.16 vs. 93.82±9.93; P=0.001) was effective for the students' academic performance, and the changes made were stable until the follow-up period.

Conclusion: Based on the findings of the research, it can be concluded that reality therapy is effective in reducing exam anxiety and academic procrastination of students, so it can be used as an effective method the to reduce exam anxiety and academic procrastination of high school students.

Keywords: Distance, Education, Reality therapy, Test anxiety, Procrastination, Male

Introduction

Undoubtedly, one of the basic factors that bring significant changes in the life of the present human being at the individual and social level is education and learning (1). Increasing the quality of education and removing the obstacles in this path has been considered as one of the basic goals in most societies and educational systems. Exam anxiety is a pervasive issue related to health, reaction, or emotional state (2), which disrupts a person's performance before and during the exam and reduces academic progress and student's success (3). This phenomenon has a high prevalence among students (both sexes and all ages) (4, 5) and can affect their psychological well-being (6). Findings regarding 10- 19-year old students (more than 7000) indicated that test anxiety was related to a wide range of family, social, psychological, and academic factors (7). Some also believe that low academic performance predicts high exam anxiety in students (8). It can be said that there is an inverse and significant relationship between anxiety and academic performance; that is, academic performance decreases with increasing anxiety, and it does not increase with decreasing anxiety (9). A meta-analyses also showed that exam anxiety had a negative relationship with academic progress, self-concept, and self-efficacy, and a positive correlation with emotional problems such as anxiety (social and pervasive) and depression. Therefore, addressing this psycho-social and educational issue can have a major impact on increasing the students' academic and psychological progress (10).

Among other factors related to students' academic performance, which is closely related to exam anxiety, is academic procrastination (11). Classical studies also show that students who experience a high level of anxiety in academic situations (2),this academic anxiety appears in the form of procrastination, i.e. deliberately postponing academic assignments, despite being aware of its negative consequences (12). According to research findings, procrastination is associated with a decrease in academic performance (13), life satisfaction (14), and psychological well-being (15) in learners. Therefore, some believe that procrastination is a type of self-regulation that aims to moderate negative emotions, and that exam anxiety may also be in this spectrum (16). Nevertheless, Steele believes that procrastination is not always a stable consequence of test anxiety (17).

Despite the differences of opinion regarding the mutual effects of anxiety and procrastination, the consequences and harmful correlates of these structures are not hidden from anyone. Therefore, several studies have addressed the intervention in procrastination and exam anxiety (10). A review of the theoretical and research literature shows that most of the studies conducted on exam anxiety and procrastination are descriptive and the experimental researches have been accompanied by contradictory findings and many problems (18). Based on research findings, most studies that target procrastination and exam anxiety are focused on cognitive and behavioral approaches, the effectiveness of which has been questioned in a number of studies (18).

One of the interventions whose effectiveness has been noticed in recent decades on a wide range of emotional and academic problems, especially in students, is reality therapy. According to choice theory, which is the basis of reality therapy, five needs, i.e., "the needs for survival, for power, for love and belonging, for usefulness, and for freedom, are known as the motivating forces of humans. The inability to achieve any of them can contribute to the occurrence of psychological distress (19). Considering that reality therapy has a specific process in changing behavior and has a special emphasis on responsibility and personal commitment; it also considers the person responsible for all his behavioral components (performance, thinking, feeling and physiology). (19, 20). Then, it may be an effective intervention in motivating students and increasing their academic progress. The findings indicate that online reality therapy is effective in reducing feelings of anxiety and psychological distress (21),

perceived stress and experiential avoidance (22) and increasing academic achievement, therefore, it can be expected that reality therapy can be effective in students' academic procrastination and exam anxiety. One of the basic principles of reality therapy is emphasis on personal responsibility and the motivational aspect, which has received less attention in procrastination interventions (18). A review of studies also show that reality therapy has been effective in reducing academic procrastination (23, 24) and unpleasant emotions such as anxiety, depression and stress (25, 26). However, most of the studies were conducted on the university student's population, and less research has studied procrastination and test anxiety among high school students, despite the fact that based on the theoretical and research literature, procrastination and anxiety may have mutual effects. Also, emotional, educational and educational challenges during adolescence become more emotional than any other educational stage; as a result, intervention in the aforementioned structures becomes necessary. Also, given that reality therapy is a relatively new approach compared to other approaches, (19), determining its effectiveness requires several studies; Therefore, the present research aimed to determine the effectiveness of reality therapy on academic procrastination and exam anxiety; the research question to be answered is whether reality therapy is effective on academic procrastination and exam anxiety of secondary school students.

Methods

The current research was a quasi-experimental study with a pre-test-post-test and follow-up design. The research population was all male second grade high school students in academic year 2021-2022 in Sari city; 40 of them were selected using simple random allocation sampling method. The participants' selection process was as follows: two boy's secondary schools were randomly selected from the districts of Sari city, and then of the total of 2 schools, 6 classes were selected as the final cluster.

Among the selected classes, 78 students scored above the average. Then, the selected questionnaires were numbered from 1 to 78. Finally, 40 students were randomly selected from among the numbers; then, the selected sample was assigned to two experimental and control groups using a random number table. In the next stage, the aims of the research were explained to the participants and a written consent was obtained and the pre-test was done. Then, the experimental group received reality therapy intervention for 8 sessions of one and a half hours, and 20 students of the control group were placed on the waiting list. After the end of the training sessions, both groups completed the post-test and the follow-up test after two months. The total participants sample size (27) was also estimated based on G*Power statistical software with mean±SD for the experiment group 61.28±5.58 and the control group 47.14±2.54, with a significance level of 0.05, and number of two groups (n=20) (28). The age range of 15-18 years, male gender, willingness to participate in the research, with at least one parent, written informed consent to participate in the study, and lack of an acute mental and physical illness were the inclusion criteria of this research. Also, the exclusion criteria included receiving psychological intervention at the same time as conducting the research, undergoing drug therapy at the same time as the intervention or within a month before the intervention, not having consent to continue the treatment, having individual problems during the intervention, and being absent in more than two sessions in the interventions.

In order to collect the data, some demographic items in the form of a researcher-made questionnaire and two standard questionnaires were used, as explained in the following section.

The Following Tools Were Used to Collect Data

1. Exam Anxiety Questionnaire: Friedman and Bendas-Jacob's Exam Anxiety Questionnaire was designed and developed to measure the test anxiety of teenagers (29).

This questionnaire has 23 questions, which are graded based on 4 degrees of Likert spectrum as completely disagree (0), disagree (1), agree (2), and completely agree (3) (29). The examination of psychometric indicators in Iran also showed that the validity of the test was confirmed with Cronbach's alpha coefficient of 0.91 for the entire scale, and its validity was confirmed using factor analysis, which was not less than 0.30 for any of the items (30). Cronbach's alpha coefficient for the whole scale in the present study was 0.78, which indicates the psychometric adequacy of the tool for local studies. Furthermore, in the present study content validity ratio (CVR=0.69) and content validity index (CVI=0.83) were in a reasonable range.

2. Academic procrastination questionnaire: This 27-item questionnaire was created by Solomon and Rothblum with the aim of measuring academic procrastination; it includes 3 subscales of preparing assignments, exams, and preparing a half-year report. Items are scored on a 5-point Likert scale from 1 (never) to 5 (always). The reliability of the test in Solomon and Bloom's

research was reported as 0.64, and the internal correlation was 0.84, using Cronbach's alpha method (31). Also, the reliability of the tool in Iran was confirmed using factor analysis and Cronbach's alpha method (0.91) (32). In Mortazavi et al.'s study, content validity index (CVI=0.8) and content validity ratio (CVR=0.6) were in the acceptable range (33). It should be noted that the Cronbach's alpha coefficient for the entire scale in the present study was 0.81. Also, our findings indicated that the content validity ratio (CVR=0.77) and content validity index CVI=0.81) were in an acceptable range.

Inclusion Criteria and Exclusion Criteria

Inclusion criteria were: a) Willingness to participate in the study); b) lack of suffering from mental disorders or drug use, etc.

Exclusion criteria included: a) absence in more than one intervention session; b) simultaneous participation in other intervention programs

The reality therapy training program consists of 8 sessions and each session lasts for an hour and a half, two sessions a week;

Table 1: Summary of reality therapy sessions

Sessions	Content of Sessions
The first session	Familiarizing the members with each other and familiarizing them with the expectations, criteria and how to participate in the group and perform the pre-test.
The second session	Familiarization of members with the concept of reality therapy and a brief explanation about the background of reality therapy and emotional involvement with group members.
The third session	Teaching choice theory and fundamental concepts of reality therapy.
The fourth session	Knowing the basic human needs, cataloging the basic needs of the members with their own efforts and the help of counseling and examining the importance of meeting these needs and explaining the basic needs and their comprehensive definition and the importance of the balance of the five needs and its impact on the human psyche.
The fifth session	In this meeting, the members are asked to give a summary of the previous meeting and ask questions that may have arisen, and others are asked to be active in the group by answering or making statements.
The sixth session	Preparing plans and programs, helping clients through useful and practical plans to transform unsuccessful behavior into successful behavior, concluding a contract, not blaming and examining work obstacles.
The seventh session	Creating a sense of responsibility to satisfy the needs by using concrete examples, familiarizing the members with the way of commitment towards carrying out and implementing the plans and plans, the beginning of the meeting is the same as the previous meetings.
The eighth session	Summarizing the material presented and performing the post-test.

based on Glaser's opinion (34), it is as follows.

As seen in Table 1, a summary of reality therapy sessions based on Glasser's model (33, 34) is presented. Then, the data were analyzed using t-test, ANOVA and the analysis of variance test with repeated measures, and t. SPSS-25 software was used to analyze the data.

Results

The results of the analysis of 40 students with a mean age of 16.68+2.38 indicated that most of them were studying in the 11th grade. Moreover, examination of the socio-economic status of the participants of the two groups also showed that most of them were in the middle class and higher. Also, age comparison indicated that there was no significant difference in the age variable in the two groups, and the age condition of both groups was homogeneous (t=0.52; P=0.60). Also, the descriptive indices of the variables are reported in Table 2.

After the descriptive findings and before the inferential analysis, the presuppositions of the test were examined. First, the normality of the data was confirmed by the Shapiro-Wilk test

(P>0.05); then, with the aim of determining the homogeneity of the variances, Levin's test was used. According to the significant level of exam anxiety (P=0.185) and academic procrastination (P=0.279), the assumption of homogeneity of variances was confirmed. According to the results obtained from the homogeneity of variance test (Mauchly's test of sphericity) for exam anxiety and academic procrastination, the values of 0.961 and 0.932, respectively, were not significant (0.311 and 0.212). Therefore, the variance-covariance homogeneity was confirmed. Therefore, the analysis of variance test with repeated measures was suitable, the results of which are presented in Table 2 to compare the two groups.

The results of variance test with repeated measures showed the f value calculated for the effect of intra-group stages (pre-test, post-test and follow-up) at the 0.01 level for exam anxiety (F=17.35; P=0.001) and procrastination (F=30.64; P=0.001) was significant. It means that there were significant changes in at least one of the stages from the pre-test to the follow-up. Also, according to the results of the test, it can be said that there was a significant

Table 2: Mean±SD of pre-test to follow-up scores for research variables

Variable	Phase	Reality therapy Mean±SD	Control group Mean±SD	Between groups P
Exam anxiety within-group	Pre-test	21.04±4.56	21.17±4.43	0.001
	Post-test	46.96±7.65	21.54±4.50	
	Follow-up	47.14±7.69	21.64±4.55	
		0.001	0.091	
Academic procrastination within-group	Pre-test	94.03±9.87	93.51±9.65	0.001
	Post-test	51.30±6.16	93.82±9.39	
	Follow-up	51.19±6.10	93.67±9.36	
		0.001	0.169	

Table 3: Summary of Bonferroni post hoc test results to determine the difference between the pre-test, post-test, and follow-up

Variable	Evaluation (I)	Evaluation (J)	Mean difference (I_J)	Standard error	P
Exam anxiety	Pre-test	Post-test	16.435	2.768	0.001
	Pre-test	Follow up	16.178	2.864	0.015
	Post-test-	Follow up	0.522	0.422	1.00
Academic procrastination	Pre-test	Post-test	27.657	5.320	0.001
	Pre-test	Follow up	27.435	5.657	0.013
	Post-test-	Follow up	0.758	0.397	1.00

I: Evaluation 1; J: Evaluation 2

difference between the levels of the group factor in exam anxiety (F_14.21; P=0.001) and procrastination (F_27.81; P=0.01). That is, the intervention of reality therapy was effective in reducing exam anxiety and procrastination, which was compared in pairs with the aim of clarifying the changes. Also, within-group comparisons using the ANOVA test showed that, unlike the control group, there was a significant difference in exam anxiety (P=0.001) and academic procrastination (P=0.001) in the experimental group.

The results of Table 3 show that there was a significant difference between the test anxiety scores (P=0.001; I-J=16.43) and academic procrastination (P=0.001; I-J=27.65) from the pre-test to the post-test. While the changes made from post-test to follow-up were not significant (P=1.00), the changes made were stable until the follow-up period.

Discussion

The present study was conducted with the aim of determining the effectiveness of reality therapy training on exam anxiety and academic procrastination of second-grade male students. The results of the analysis showed that the intervention was effective in reducing exam anxiety and academic procrastination of students and the changes made were permanent until the follow-up stage.

Based on the first finding of the research, it was found that reality therapy can significantly reduce exam anxiety in the participants. The review of the research background shows that the present finding is implicitly in line with those of the studies of Krispenz et al. (11), Asli azad et al. (21), Asli azad et al. (2021b), Abdulaziz (35) and Moradizadeh et al. (36). Given that exam anxiety is known as a part of negative emotions, it can be said that this finding is in line with the research of Moradizadeh et al. (36) who confirmed the effectiveness of reality therapy in academic stress. Khaleghi et al. (37), also confirm the effectiveness of reality therapy on social anxiety of high school students. On the other hand, Wager's studies also show that the effectiveness of reality therapy has been

confirmed in some positive structures such as academic vitality and self-efficacy (38). In explaining the first finding of the research, we can refer to the main core of reality therapy. That is, responsibility was focused, which means that this approach considers the cause of experiencing unpleasant emotions such as anxiety and stress to be the irresponsibility of people, rather than anxiety (19). Therefore, by using into this approach, one accepts that all (or at least part) of the test anxiety one experiences is due to irresponsibility, which may be in the lack of planning or postponing the heavy load of academic assignments until the end of the semester. Also, teaching some effective problem solving methods along with reviewing previous effective and ineffective methods of achieving the demands can be a form of self-directedness and correction of ineffective strategies. Also, reducing exam anxiety may be a secondary consequence of increasing psychological health. This means that by increasing general health, reality therapy reduces the basic level of students' neuroticism and increases their resilience. As a result, the person will have a high coping ability to face stressful exam situations (39). It can also be said that by confronting a person with facts and values, reality therapy teaches him the responsibility and discretion. During reality therapy, a person learns to feel responsible not only for his actions, but also for his thoughts and feelings. During treatment, a person learns what he should learn during his natural development in a relatively short period of time. If a person can establish a successful emotional relationship with others, it is not far away and is not pushed towards itself. As a result, he experiences less anxiety and procrastination (40).

Another finding of the research was the effectiveness of reality therapy in reducing academic procrastination, which is in line with the findings of Mohssenzadeh et al. The reduction of procrastination through reality-therapy can be explained from several points of view. In the first step, this is probably related to the vicious cycle of procrastination and exam anxiety (18). That is, the exam

is the trigger for anxiety and the student tries to regulate the inefficient emotions in order to avoid this unpleasant emotion (i.e. procrastination). As a result, when the exam anxiety decreases, the need for procrastination also decreases. The findings also indicate that anxiety always leads to avoiding academic situations (14). As stated earlier, the nature of reality therapy is tied to motivation, which is the missing link in procrastination. In fact, the emphasis of this approach is on the present time, and responsibility is associated with an increase in the feeling of control and personal agency, which will be the motivation of its output. On the contrary, when a person's feelings and perceptions are based on this factor and he/she has no control over his/her academic assignments and searches for the cause of his/her behavior in the past, the vicious cycle of helplessness, anxiety, and procrastination is inevitable. Research findings also indicate that students with an internal source of control report more self-efficacy and, as a result, more perception and academic progress (27).

The major limitation of this research is related to external validity; Because the statistical population of the research is a special group of the society, that is, second high school male students of Sari city, therefore, the possibility of generalizing the results to the whole society is limited. Also, data collection in this research was based on self-report scales. Therefore, another limitation of this research is related to measurement; because these reports are susceptible to distortion due to unconscious defenses, response bias, personal introduction methods and social desirability in general.

Conclusion
In sum, the findings of the current research showed that one of the important strategies of reality therapy is emphasis on the acceptance of individual responsibility. The counselor can help teenagers to overcome their anxiety and reduce their procrastination by discussing and emphasizing the acceptance of individual responsibility. In this way, they can accept the responsibility of their lives and duties, and in this way they have more effective control over their lives. However, due to the limitations of the research (being single-sex, limited study of demographic variables, focusing on students, and the lack of a clinical interview with the aim of controlling some disturbing variables such as emotional disorders), it is recommended that future studies should aim to accurately evaluate and generalize the findings, and put several studies to the test in different conditions and societies.

Authors' Contribution
This article is taken from the doctoral thesis of the first author. All the authors of this research contributed to the design, conceptualization, methodology, data collection, statistical data analysis, drafting, editing, and finalization.

Conflict of Interest: None declared.

Ethical Approval
In this research, ethical standards including obtaining informed consent and ensuring privacy and confidentiality were observed. According to the conditions and time of completing the questionnaires while emphasizing on completing all the questions, the participants were free to withdraw from the research. After completing the research, the control group was also subjected to intervention. Also, this research was approved by the ethics committee of Islamic Azad University, Chalus branch, with the ethics code of IR.IAU.CHALUS.REC.1401.077.

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