THE EFFECTIVENESS OF EXPOSURE THERAPY BASED ON VIRTUAL REALITY ON THE ANXIETY OF THE SPEAKER: CASE STUDY: PSYCHOLOGY UNDERGRADUATE STUDENTS OF TEHRAN UNIVERSITY

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Abstract

The purpose of this study was to investigate the effectiveness of virtual reality-based exposure therapy in reducing language anxiety. The research methodology of this study was semi-experimental in her two groups of men and women at the University of Tehran. The study's statistical population included 20 of her first-year psychology students at the University of Tehran, half of whom were girls and boys between the ages of 18 and 22. Data were selected using a targeted sampling method and divided precisely into her two groups of 10 boys and girls. We collected data using the Voice Anxiety Automatic Thought Questionnaire (SAATQ) and analyzed the data using Excel. As a result of the analysis, there was a significant difference between the girls' group and the boys' group, and it was said that girls had a stronger tendency to be afraid of language.

Keywords: virtual reality, exposure therapy, speech anxiety, student, anxiety questionnaire

1 INTRODUCTION

The modern man was born somewhere in what is now Africa approximately fifty thousand years ago. The mutation in the human genome resulted in a change in the brain of the affected person, which was accompanied by the development of abilities like the ability to construct intricate tools and language and culture. As a result of these shifts, this species developed a sophisticated social structure over time, giving it a significant degree of independence from its environment. Humans developed powerful motivations for gaining the approval and support of others in order to support this social system. To thrive

in a wide range of social settings, our species needs to be loved, appreciated, and validated in order to gain parental investment, forge supportive friendships, find attractive partners, and perform well in a variety of relationships. A person's sense of self-worth and sense of belonging are two of the health-related factors that are negatively impacted when they are excluded from social groups. As a result, people naturally have a fear of receiving negative feedback from others. Social anxiety disorder is the maladaptive manifestation of this developmentally adaptive concern. A type of intense and specific fear and anxiety of social situations in which a person may be closely examined by others is the main feature of social anxiety disorder. A person worries that they will be seen as weak, anxious, crazy, stupid, lazy, scary, dirty, or hateful by others. A person is afraid that others will judge them negatively if they act or behave in a certain way, or if they show signs of anxiety like blushing, shaking, sweating, talking confusedly, or staring. Anxiety about public speaking is one of the most prevalent forms of social anxiety. Like the main type of anxiety, this disorder has been identified as a multifaceted condition that includes a set of physiological events, verbal behavior, and motor actions. In public speaking situations, people with public speaking anxiety frequently experience a variety of symptoms, including an increased heart rate, sweating, digestive discomfort, diarrhea, muscle tension, and confusion. Public speaking anxiety, also known as social phobia, affects millions of people. Many people would rather not speak in public if they had the flu. Performance anxiety is also common in actors, musicians, speakers, and athletes. Speech anxiety can hinder your career and prevent you from doing the things you enjoy. Worst of all, public speaking anxiety can harm your confidence and self-esteem. Having everyone's attention on you and being the center of attention can cause stress. Your body's "fight and flight" response to this situation is similar to how it responds to an attack. The body's "fight or flight" response is what causes the symptoms of anxiety, which is why the symptoms of speech anxiety are similar to those of real-world danger. Having an unsavory involvement in open talking moreover influences one's convictions. Those who were faulted by others within the past or did not get a good grade and fizzled within the discourse; are subject to discourse stretch. These symptoms appear as a result of the fight response of an adrenaline rush that prepares you for danger. When there is no real physical threat, you may feel like you have lost control of your body. This makes public

speaking very difficult, and makes you avoid situations where you might have to speak in public. If public speaking anxiety significantly interferes with your life, you may be diagnosed with social anxiety disorder. Speech anxiety can show symptoms like the following:

Figure 1. Speech anxiety symptoms

Rapid breathing

Shortness of breath

Dry mouth
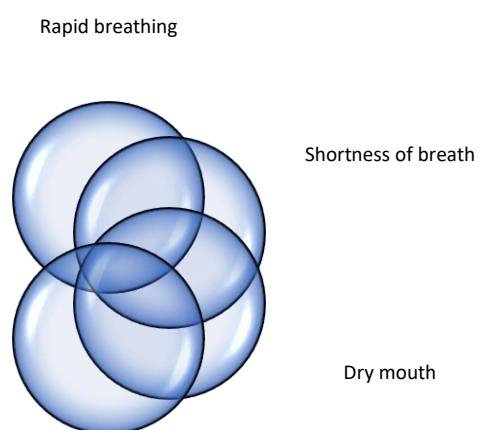
2 LITERATURE REVIEW

Public speaking anxiety leads to a decrease in efficiency in verbal communication, leading to a person's avoidance of starting or continuing conversations in groups, in public, or at parties (Harris,et al, 2002). Researches show that high speech anxiety is related to low income, low grades, lower satisfaction with academic experience, lower learning level, less possibility of seeking education, high level of loneliness due to not being chosen as a friend, reduced chance of being hired or promoted (McCroskey, 1976). These and other debilitating effects make a person want to avoid socializing. In addition, people who show low communication anxiety have more educational, personal, professional and economic benefits (Scott, et al, 1977). Exposure therapy, cognitive restructuring, relaxation strategies and exposure therapy based on virtual reality are among the current treatments for public speaking anxiety (Magee, et al, 2009). However, Exposure can become normal

or adaptive responses to the object of fear by reducing anxiety and forming new conditioned responses (Craske, et al,1999). Currently, exposure therapy that uses real stimuli is known as the most effective treatment for anxiety disorders such as social anxiety (Owens, 2015). This existence of real exposure is not always practical and ethical, especially when the stimuli are dangerous. For example, giving a speech in front of a meeting hall or fear of flying, which cause such intense fear that the patient does not want to enter the treatment. Virtual reality-based exposure therapy emerged as a high-potential alternative to real or imaginary exposure therapy due to the limitations mentioned (Tarrier, et al. 1999). During the wave stage in virtual reality, the client wears glasses or a hat that is connected to a computer. It provides all video and audio outputs that are animated and as close as possible to the real environment. Since the patient knows that when faced with virtual reality, the technology can be turned off and on at any time, he feels more secure and in control compared to real exposure, and this feeling of control increases the patient's feelings of self-efficacy. Taking into account the prevalence of social anxiety disorder, the low level of treatment sought by patients and the difficulties that exist to provide suitable conditions for real exposure, the growth and expansion of treatment based on virtual reality can lead to reducing the burden of this disorder (Garcia-Palacios et al., 2007).

3 METHODOLOGY

This study's research design was a semi-experimental one conducted by two groups. Twenty first-year psychology undergraduate students aged 18 to 22 made up the study's statistical population. The statistical population for this survey was split into two groups of ten people, with boys and girls in the first group. The intended audience consisted of university students with speech anxiety. The purposeful sampling approach was used as the research sample in this study. Data were collected with the help of the Speech Anxiety Automatic Thoughts Questionnaire (SAATQ). After that, each group's treatment methods were evaluated. On the other hand, the students were given the

speech anxiety automatic thoughts questionnaire (SAATQ), and Excel was used to evaluate the statistics that were obtained.

4 RESULTS

4.1. PSYCHOLOGICAL TEST OF SPEECH ANXIETY

Speech Anxiety Psychology Set is a valid version of the Speech Anxiety Automatic Thoughts Questionnaire (SAATQ), which is one of the most accurate questionnaires to measure the level of speech anxiety. This test will help you measure the stress level of speaking to small and large groups, and if you answer all the questions with complete honesty, a good psychological understanding of the situation you are in will be explained to you.

Table 1. the Speech Anxiety Automatic Thoughts Questionnaire (SAATQ)

	Question	Answer 1	Answers 2	Answers 3	Answers 4	Answers 5
1	I will stutter while speaking	I do not agree at all	I don't agree a bit	No idea	I agree a little	I completely agree
2	My speech has no effect on the audience					
3	My speech will be irrelevant					
4	I am not able to speak well to others					
5	When others don't pay attention					

	to my speech, I think others think bad about me
6	If I perform poorly in my speech, the audience will remember me badly
7	It will be very bad if my voice shakes during the speech
8	If I make a mistake during the speech, the audience will think I am stupid
9	If I become anxious in this situation, the listeners will not like me
10	If they invite me to speak, I don't know what to say
11	If I don't give a good speech,

	the audience will reject me
12	What I say during the speech seems stupid
13	It's scary, if other people think I'm not smart
14	If I make a mistake during my speech, it will be very bad
15	During the speech, I am unable to control my anxiety
16	It will be very bad if people find out that I am anxious during the speech
17	My behavior during the speech will be clumsy in the eyes of the listeners
18	I will be unable to speak
19	I will not be able to

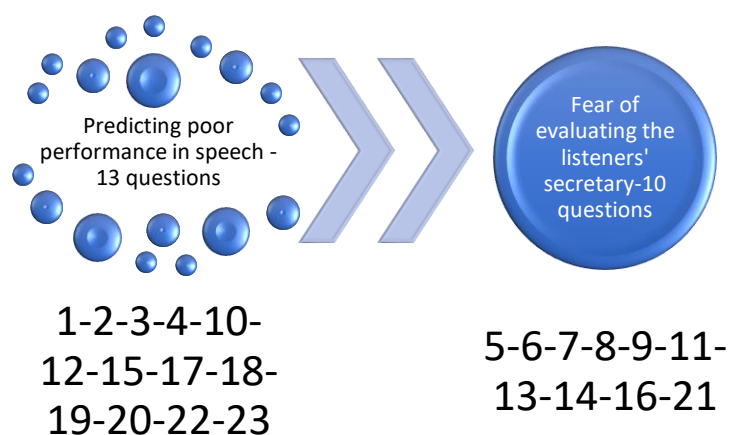|	
	finish the speech
20	My mind goes blank during the speech
21	To gain the approval of others, I must give a good speech
22	If they ask me to give a speech, I get worried
23	During the speech, I will not be able to answer the questions of the audience

4.3. QUESTIONNAIRE SCORING METHOD

Questionnaire of Speech Anxiety Thoughts The initial version of the questionnaire contains 23 main phrases of negative thoughts, which were prepared based on clinical samples that suffer from social phobia and non-anxious students. The original version of this questionnaire was prepared in Korean and few studies have been done in English. Considering the limitations of the mentioned questionnaire and the psychometric studies conducted in this field, a new questionnaire was prepared to evaluate the cognitive characteristics related to speech anxiety. In other words, the latest version is a valid version of the Speech Anxiety Automatic Thoughts Questionnaire (SAATQ), called the Speech Anxiety Thoughts Questionnaire (SATI), which has been reduced to 23 items after revision. From the analysis of the factors performed on the remaining 23 statements, 2

factors were obtained, and the correlation between these two factors was calculated as 0.64. 13 statements are related to the factor (prediction of poor speech performance) and 10 statements are to measure the factor (fear of evaluation of the secretary by the listeners). The questionnaire in general in this research is the score or quantity that the subject gets according to his answers to the Speech Anxiety Thought Questionnaire (SATI).

Figure 2. Questionnaire components

Predicting poor performance in speech - 13 questions

Fear of evaluating the listeners' secretary-10 questions

1-2-3-4-10-12-15-17-18-19-20-22-23

5-6-7-8-9-11-13-14-16-21

The total score of people in the test will be 23 at the lowest and 115 at the highest.

Figure 3. Calculate the total score

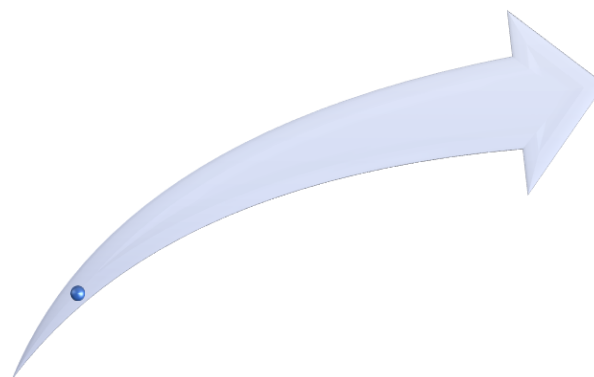**Table 2. Anxiety level based on score**

Anxiety level	Score
Low	23 to 31

Mild	31 to 59
Average	59 to 87
Extreme	87 to 115

5 DISCUSSION

5.1. OBTAINING THE SCORE OF TWO GROUPS

In this section, the scores of two groups were examined in two sections before treatment and after treatment.

Table 3. The score of the participants of the first group before and after treatment

Participant	Score before treatment	Score after treatment
1	90	50
2	100	80
3	112	85
4	114	86
5	90	30
6	88	86
7	86	59
8	88	59
9	89	57
10	92	56

Table 4. The score of the participants of the second group before and after treatment

Participant	Score before treatment	Score after treatment
1	114	87
2	112	86
3	108	57
4	105	85
5	90	53
6	92	47
7	88	66
8	90	59
9	104	54
10	114	88

As can be seen in the table above, the participants of the first group are boys and the participants of the second group are girls. In the first group, out of ten participants, all ten participants had a severe anxiety score between 87 and 115 before treatment. This score after treatment, six people were placed between the medium range of stress, which is 59 to 87, and 4 people were placed between the range of 31 to 59, which is Mild.

In the second group, all ten participants before the treatment are between the range of high anxiety, i.e. 87 to 115. This score after treatment, 5 people were between 59 and 87, which is moderate anxiety. The next five people were placed in the range of 31 to 59 points, which is Mild.

5.2. PUBLIC SPEAKING ANXIETY SOFTWARE

In this research, virtual reality software for fear of speaking in public was used. The environment of this software includes a three-dimensional lecture hall in which people (avatars) are present and the environment of a real lecture hall is reminiscent. One of the features of this software is that the therapist can make the encounter conditions more difficult according to the treatment protocol. For example, increasing the number of the audience or making the situation more difficult by causing disturbances such as the audience laughing or leaving the hall. It is one of the most common video screens for displaying virtual images, which consists of two separate screens for both eyes, which are on It is installed on the user's head. To use this system, both groups worked with this system for three sessions before the lecture, and the anxiety scores before and after the treatment were significantly reduced. After working with this system, the questionnaire was used again and the scores showed a significant reduction in the anxiety of the participants. To implement this system, each participant was required to give a speech on the topic of his choice in each meeting. The result was evident after three sessions and the participants significantly reduced their anxiety. After three lecture sessions in the virtual reality world, students have reduced their anxiety and are able to control anxiety in a better situation.

5.3. SPEECH ANXIETY THOUGHTS

Glossophobia is a very real fear that millions of people around the world suffer from. Almost 75% of people experience some anxiety for speaking in public. Anxiety and fear can cause similar reactions in a person's mind and body. But fear is a response to an immediate and external threat, and anxiety can occur without an immediate threat. Anxiety doesn't happen quickly; it just happens slowly. Therefore, a few weeks before the speech, before going on stage, you may feel nervous and nervous.

6 CONCLUSION

The purpose of this study is to determine whether students' speech anxiety can be reduced with virtual reality-based exposure therapy. The findings suggested that Shajoyan speakers may experience less anxiety when they are exposed to the environment and speech conditions in a virtual setting, just like in real life. The students' scores, which were assessed using a questionnaire in two groups prior to and after the treatment, are indicative of these outcomes. From all of the topics covered in this study, it can be deduced that, with the passage of time and the development of new technologies, the present generation of psychologists and therapists now has the chance to use technology to improve efficiency by modernizing conventional psychological treatments in the same way that other sciences do. and the efficacy of conventional approaches, given that we utilized virtual reality technology to facilitate exposure conditions in this study. Researchers and therapists in the cognitive sciences, psychology, and psychiatry have been discussing the use of electronic tools and gadgets in various treatments and pathological fields for a number of years, and there is a pressing need to expand their use in Iran due to a lack of literature. Additionally, its minuscule clinical application is felt strongly. Our research was hampered by a number of other factors, including the high cost of living and the absence of hardware and software facilities in Iran, in addition to the paucity of existing research literature. In the end, it is suggested that researchers interested in this field further investigate the possibility of using technology in treatments related to other fields, taking into consideration the positions mentioned above, having up-to-date information in the field of IT, and participating in interdisciplinary projects. be

anxious Specific fears, such as phobias and anxiety caused by interpersonal situations, may be appropriate variables for evaluating the efficacy of virtual reality-related digital technologies and tools.

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