The Effectiveness of Reading Counseling Using Augmented Reality Technology to Develop Female Psychology Students' Awareness towards Relaxation and their Attitudes at Najran University

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Abstract

This study aimed to reveal the effectiveness of reading counseling using augmented reality technology to develop female psychology students' awareness towards relaxation and examine their attitudes towards it at university. To achieve the objectives of the study, the quasi-experiment with a pre-post design for two groups was used. The study sample consisted of (81) female students of the psychology program at the undergraduate level in the College of Education at Najran University in the Kingdom of Saudi Arabia. The control group consisted of (37) female students, and the experimental group consisted of (44) female students. To collect the data, two instruments were used, namely: a questionnaire about awareness towards relaxation, and a questionnaire about attitudes towards relaxation after verifying the validity and reliability of the instruments in the Saudi context. The results showed that there were statistically significant differences in the means of the posttest in the awareness of relaxation and attitudes towards it in favor of the experimental group. The study recommended the need for Saudi universities to pay attention to students and to adopt a method of reading counseling based on augmented reality technology.

Keywords: Reading counseling, augmented reality technology, relaxation, undergraduates, attitudes.

INTRODUCTION

The current era is witnessing major changes in various areas of life, and the increasing events and circumstances it is going through that have led to anxiety and tension being an essential of its features. When an individual experiences anxiety and tension, this leads him to suffer from psychological and behavioral disorders leading to a low level of energy, a weakness in positive productivity, and then a loss of desire for work and life.

This era is characterized by speed, change, and cognitive and technical developments, which have led to changes in the behaviors of individuals and society. Accordingly, various types of psychological disorders such as anxiety, tension, phobias, and psychological pressures appear with it. Consequently, the search for what contributes to reducing the levels of these disorders has begun, and new models have appeared used in psychological counseling known as the relaxation method or short-term relaxation treatments. Relaxation aims to prepare individuals psychologically to get rid of tension, anxiety, and negative emotions that they face. The importance of relaxation lies in reducing the impact of the response to psychological and nervous stress and helping to control emotions (Al-Tayeb, 2021). Hence, relaxation is one of the necessities of life in this era, including pressures, crises, tensions, and worrying situations. Therefore, the individual

must learn to face and overcome these pressures (Badran, 2012).

Relaxation is defined as the complete cessation of all muscle contractions and tensions associated with anxiety and tension states (El-Sherbiny, 2015). It is a technique that calms internal conflicts and directs the individual's attention to muscle and other areas, thus reducing the intensity of the conflict (Al-Tayeb, 2021). Relaxation is extremely important in an individual's life in terms of its ability to improve the mood by training the individual in the art of ignoring and getting rid of negative thoughts and worrying situations, improving sleep, reducing stress, and reducing depression and the feeling of pain. Also, it plays an important role in increasing self-confidence, productivity, and improving performance and achievement. Relaxation is practiced as a useful method in developing the ability to control and manage oneself and to get rid of the anxious ego easily and quickly (Al-Dhahadha & Al-Damour, 2020). University education is considered of a high position because of the goals and objectives that every university student seeks to achieve as it contributes to his cognitive, social, emotional, and moral development. Also, it aims to identify his lifestyle and manner, and the aspects of the activities he practices in his spare time. In addition, it contributes to satisfying his psychological needs and developing his skills (Abu Shaira, Abu Shendi, Al Jaafara, & Ghobari, 2010). Accordingly, the social system, the way of social relations, and the academic systems that prevail in university life must have an impact on the psychological development of university students, even though small.

The renewed experiences that students face in the university and the surrounding environment can be linked to specific educational outcomes as the volume of interactions between students themselves and between students and their teachers and the nature of the activities they practice and other experiences must have an impact on their academic, social, emotional, and psychological development (Ismaili, 2011). Although the university is described as a stage of comfort, adjustment, calm, and the formation of intimate friendships, the reality proves that it is not only like this, but also indicates that it is a critical stage during which the demands of growth become more urgent than the previous stages. The student is exposed to a set of

pressures, tensions, anxiety, and adjustment problems, the methods of confronting them may have a direct negative impact on the student and his public and university life as well (Al-Anzi & Abdul-Razzaq, 2015). University students have distinctive characteristics and face stressful situations and suffer from many situations and crises that lead to the generation of pressures and maladjustment. They consist of facing tests, relations with peers and professors, competition for success, emotional problems, and dealing with the requirements of the university environment, its regulations and laws, and the restrictions it imposes on their movement and freedom. Among the factors of pressure that students are exposed to are the conflicts with parents and values between what is authentic and what is new and planning for the future and trying to achieve self-actualization (Kashmar, 2019). University life may pose difficulties for students that requires them to fulfill study obligations that differ from what the students were in the previous academic stages. The life of university students can be regarded as stressful in many respects. The beginning of the study at the university is considered a significant psychological transition period that occurs a large number of challenges and demands in many aspects. Upon the entry of students into the subjects of the academic years, great challenges arise before them such as the tendency for more academic achievement and academic compatibility with the requirements of those subjects (Al-Sumaili, 2013). This was confirmed by the results of previous studies such as Al-Qadan (2018), Yildirim (2017), Al-Khayat and Al-Silaihat (2012), Tamil and Rajaguru (2010), Miqdadi (2010), and Abu Lail (2008) that most university students suffered from pressures and problems of adjustment due to many reasons, including peer pressures, the lack of various activities that suit the university student's tendencies and needs and appropriate academic and non-academic counseling services, as well as the lack of information at this stage that enables them to make the right decision by choosing the right job that suits their academic qualifications. They are often unsure about their future career.

Based on the aforementioned, the two researchers believe that it is important to ensure that university students are aware of the most appropriate methods for dealing with stress, anxiety, and pressures that they face. Therefore,

the two researchers sought to find an effective method to help this, and they found that relaxation may be an effective method in this aspect by developing it and improving their attitudes towards it to be able to know it by acquiring the habit of relaxation. So, they have a sufficient opportunity to acquire new knowledge, skills, and experiences that helps them overcome academic and life problems and deal with the pressures they face. This can be done in several ways, the most important of which is self-counseling that is applied by the learner himself. Perhaps, the most prominent of which is reading counseling, especially if it is used with modern techniques that are exciting and popular with students, including augmented reality technology.

Counseling is a constructive process that aims to help the learner to understand himself, study his personality, know his experiences, and identify his problems and capabilities to solve them in light of his knowledge, desire, education, and training to achieve his goals in mental health and personal, educational, professional and family compatibility. It also aims to develop the self-concept of students to be more motivated and positive, improve self-acceptance and knowledge of their strengths and weaknesses, and work on developing them and the concept of human relations and communication skills with others (Richards & Vigano, 2012). Counseling takes various forms, including reading counseling, which is one of the most important methods of self-counseling. Regular, purposeful reading has a positive and helpful role in improving health conditions and personal behavior effectively and adds preparations for souls to face life's problems and find acceptable solutions to them. The idea of reading counseling depends on what it presents to the reader in terms of motivation, encouragement, and reinforcement of ideas and concepts within their chosen content. It urges the reader to interact with the content of the topic used in counseling to change his behavior or directions, modify his understanding of some matters and view them from a new perspective, or to reach guaranteed results and solutions to solve the problems he faces (Mohammed, 2016). The idea of reading counseling is based mainly on the adoption of written material in any form to counsel, help, and guide a person by reading that material, interacting with it, and being affected by it to achieve growth and psychological health

for the reader. Reading counseling is also based on employing books, articles, and publications and using them to treat a problem, or modify an attitude towards a specific topic. One of the most important basic steps included in any program for reading counseling is to achieve the individual's insight into his problems and modify his attitudes and abnormal behavior patterns (Al-Zahrani, 2016).

The method of reading counseling is characterized by its role in helping the reader to obtain a special material of counseling at the appropriate time for him and the atmosphere he wants as it causes him to have fun, entertainment, and a stimulating method for learning and growth. The method of reading counseling does not depend on other factors or specific requirements such as visiting the counselor, booking an appointment, waiting for the turn, and other requirements that the individual needs in regular counseling (Al-Shahawi, 2006).

The importance of reading counseling for learners is shown in its role to achieve important goals for learners, including developing their psychological aspect, strengthening morale, positive support through the proposed material, accessing important experiences, and reducing anxiety cases that may accompany some of the learners during the stages of education. Also, it plays in mitigating their psychological disorders, achieving the psychological adjustment required for the learner, improving the psychological state, facing problems and obstacles, trying to understand oneself and others, and adjusting to school, university, and community life. In addition, it is a way to modify behaviors, provide insights into bad behaviors, and help treat conditions such as communication, addiction, depression, anxiety, and eating disorders (Khudair & Faraj, 2011).

In view of what was previously mentioned about the importance of reading counseling and its objectives, it has received great and wide attention from researchers. The results of Al-Sharifin and Al-Muflih's (2014) study showed the effectiveness of the method of reading therapy in reducing the level of psychological loneliness among non-Jordanian students at Yarmouk University in Jordan. Also, Muhammad (2016) showed the effectiveness of a program based on reading counseling in reducing the level of negative thinking among

university students. In addition, Bani Fayyad (2017) revealed the effectiveness of reading therapy in improving body image and reducing cognitive biases among a sample of adolescent girls. Further, Mubarak, Hakim, and Badawi (2020) showed the effect of using reading counseling in developing emotional intelligence among secondary school students. Finally, Najaf's study (2020) showed the impact of reading therapy in reducing polarized thinking among middle school students. Given that reading plays a role in shaping the awareness of learners, culture determines the awareness of the individual of himself and life issues and determines the course of his life. As a result, his life develops as much as his culture expands from the information he acquires through reading. The importance of reading increases with the technological developments experienced by the current era, especially that modern and advanced technology has facilitated access to sources of culture and information. Hence, several technologies have emerged that prompted many developed countries to take advantage of and employ them to serve the individual and society in many fields such as education and psychological counseling at all levels, most notably the augmented reality technology (Al-Shami & Al-Qadi, 2017).

Augmented reality technology is a type of virtual reality that aims to replicate the real environment on the computer and enhance it with virtual data that was not part of it. As such, it is a system that generates a composite view for the user that blends the real scene viewed by the user with the virtual scene generated by the computer, which augments the real scene with additional information (Al-Zahrani, 2021).

The computer-generated virtual scene aims to improve the sensory perception of the real world that the user sees or interacts with. Augmented reality aims to create a system in which the difference between the real world and what has been added to it cannot be perceived using augmented reality technology. When an individual uses this technology to look at the surrounding environment, the objects in this environment are equipped with information around them and integrate with the image that the individual looks at (Dunia, 2021).

Augmented reality is the product of technology that has contributed to motivating learners and making the learning process more fun, interesting, and exciting. Augmented reality technology has easily found its way into the field of education, contributing in turn to redefining learning and making it meaningful. It also provides the opportunity to display content in a way that differs from the traditional pattern, and the role of the learner is positive in obtaining information, and it develops the capabilities of learners to acquire and understand information. In addition, it helps to remember information and works to add layers of information with a wonderful design and output in a tangible, realistic environment that can be seen with the naked eye and provides the advantage of the ease of use and access to information (Al Dhahiri & Al-Hassani, 2021).

It can take from this technology counseling learner such as the use of simultaneous communications (chat and video conferencing) and most commonly (e-mail). In addition, online electronic counseling is offered as a stand-alone service and as an adjunct to other counseling services that are used in traditional counseling. Further, it uses virtual augmented reality environments that allow synchronous and asynchronous communications to conduct consultations and seek help and advice (Nagel & Anthony, 2011). Also, reading counseling using augmented reality technology has an important role in developing different concepts for learners such as awareness and attitudes (Al-Husseini, 2014). This technology is characterized by a helpful and facilitating role for learners in the ease of accessing the content and interacting with it. Further, it presents content interestingly and attractively and develops their abilities to acquire, understand, and analyze information (Al-Harbi, 2012). In this regard, the results of previous studies such as Aqel and Abu Khater (2020), Al Dhahiri and Al Hassani (2021), and Al Harbi (2021) confirmed the importance of augmented reality technology and its effectiveness in providing learners with various knowledge, information, and skills necessary for their academic and professional lives.

Based on the aforementioned, improving awareness of relaxation and attitudes towards it is important and effective in the success of university students, in overcoming university and life problems and dealing with them effectively. Also, given the importance of activating modern technologies for the benefit of the individual, especially by employing them in

the aspect of raising awareness and acquiring knowledge through reading. Therefore, this study comes to reveal the effectiveness of reading counseling using augmented reality technology to develop awareness towards relaxation among students of psychology at Najran University and their attitudes towards it.

Statement of the problem

Recently, problems have spread among individuals, including university students resulting from anxiety and tension witnessed by the current era of rapid civilizational changes and developments at all levels, including scientific and technical developments. This has led to deviations that formed a burden on the individual's abilities and endurance resistance (Badran, 2012). The spread of the Coronavirus (Covid-19) pandemic has also led to a general state of uncertainty, which has caused people to worry about fear and tension from being infected with this virus as well as their anxiety about exposure to social isolation or quarantine, and social distancing (WHO, 2020). Accordingly, the two researchers noticed through their work in the field of university teaching that there is a decrease in the achievement and performance of female students on tests, assignments, duties, and university activities. To verify this, an exploratory study was applied to a sample of (50) female students at the College of Education at Najran University in the Kingdom of Saudi Arabia, and it was found that there was a great deal of anxiety and tension among university students as a result of their fear of the spread of the Coronavirus (Covid-19), quarantine, and social distancing, and the shift towards e-learning and distance education, and the accompanying anxiety of achievement on tests. Therefore, the two researchers sought to shed light on psychological self-counseling in crises and disasters. The Saudi Association for Psychological Counseling (2021) indicated that this type of counseling gives a deeper understanding and greater attention to specialists in this humanitarian aspect of crises and disasters. It can help counselors maintain their calmness by following methods of relaxation and anger control. This was confirmed by Mashreqi and Al-Jishi (2020), El-Sherbiny (2015), and Badran (2012) that developing awareness of relaxation among counseling seekers and helping them identify ways that assist them to acquire the habit of

relaxation are appropriate in reducing shocks caused by disasters and crises. Also, it is necessary to develop awareness towards the practice of relaxation for its role in reducing the level of stress and anxiety and in improving performance and academic achievement. The World Health Organization (2020) also recommended that achieving relaxation requires the individual to focus on doing individual activities, the most important of which is reading books and articles. Reviewing the recommendations of previous conferences on technology, the international conference "Modern Techniques for Psychological Counseling" held at Ain Shams University in Egypt in 2019 recommended the importance of using technology in the field of psychological counseling. Also, the Ain Shams University conference (2014) entitled "Prospects for Psychological Counseling in the Age of Advanced Technology" recommended directing research interests to issues and problems of the impact of advanced technology on the individual, family, and society. In light of the aforementioned, the two researchers believe that it is necessary to employ modern tools and techniques to help students and counsel them to become aware of relaxation and improve attitudes towards it because of its great role in helping to august to crises and problems, and accompanying disorders. Perhaps, this can be done through reading counseling using augmented reality. Hence, the problem of the study emerged and attempted to answer the following two questions:

1. Are there statistically significant differences at (a=0.05) between the means of the performance of the control group and the experimental group in awareness of relaxation due to the training method (reading counseling using augmented reality technology, the usual method)?

2. Are there statistically significant differences at (a=0.05) between the means of the performance of the control group and the experimental group in attitudes towards relaxation due to the training method (reading counseling using augmented reality technology, the usual method)?

Objectives of the study

This study aimed to reveal the effectiveness of reading counseling using augmented reality

technology to develop awareness towards relaxation among female psychology students at Najran University and their attitudes towards it.

Significance of the study

The significance of this study is that it is a serious attempt to design and apply reading counseling using augmented reality technology to develop awareness towards relaxation among university students and their attitudes towards it. The study is significant as follows:

- The results of this study may be a new contribution to the previous scientific research conducted in the field of psychological and educational counseling. It shows the importance of counseling for university students in colleges of education.

-What this study provided from educational literature and previous studies dealing with the variables of the study, which represent a contribution to the increase of human knowledge about the design and application of reading counseling using augmented reality technology to develop awareness towards relaxation among university students and their attitudes towards it and my form a pillar for those interested researchers in the field of self-psychological counseling.

-It is hoped that the results of this study and the knowledge included in it will contribute to raising the level of cognitive awareness for psychological counselors, university counseling supervisors, and university educational officials to benefit from the procedures for designing and applying reading counseling using augmented reality technology to develop awareness towards relaxation among university students and attitudes towards it, which is reflected in its practical application in the counseling field.

- The study provides a practical application for psychological counselors working in psychological counseling units at the university in employing reading counseling using augmented reality technology to open prospects for using it to reduce the level of other problems or improve certain skills.

Key terms of the study

The study terms were defined procedurally as follows:

- Effectiveness: In this study, it means the positive change in the awareness of female students of the Department of Psychology at the College of Education at Najran University (the study sample) towards relaxation and attitudes towards it through the employment of reading counseling using augmented reality technology.

- Reading counseling using augmented reality technology: Counseling reading is defined as "a counseling method that uses books as part of the counseling process to help counselees solve their problems, release their emotions, gain new directions in life, and explore new ways of interacting" (Najaf, 2020, 354). As for augmented reality technology: it is "a technology based on virtual objects and additional information (multimedia, films and three-dimensional images) in the student's real environment to increase his motivation to learn, and provide additional information to gain learning and understanding in the least possible time and effort. The student interacts with information and virtual objects in augmented reality through various devices" (Al-Shehri, 2019, 513). Procedurally in this study, counseling on reading using augmented reality technology is defined as the use of digital articles, images, and films designed using the virtual world in the real environment using the Zapper program to show the scientific material in the form of a barcode, which the university student can scan on the mobile through the program's camera, and she can easily access the article anywhere and anytime excitingly and interestingly to increase the effectiveness of learning about relaxation and its related concepts and elements.

-Awareness towards relaxation: Providing the students (the study sample) with information about relaxation and its importance in life in general and in their educational path in particular. So, they can practice it to reduce anxiety and tension that negatively affect academic achievement and performance. It is measured by the total score obtained as a result of the students' responses (the study sample) to the study instrument (the questionnaire on awareness towards relaxation) prepared by the two researchers to achieve the objective of the study.

-Attitudes: It is a hypothetical construct that represents the degree of students' likes (the study sample) or dislikes for the subject of

relaxation and its practice, and it is measured by the total score obtained as a result of the responses of the students (the study sample) to the study instrument (the questionnaire on attitudes towards relaxation) prepared by the two researchers to achieve the objective of the study.

Delimitations of the study

1. Human delimitations: The application of the study was limited to a sample of female undergraduate students in the psychology program.

2. Place delimitations: This study was applied in the College of Education at Najran University in the Kingdom of Saudi Arabia.

3. Time Delimitations: This study was applied in the second semester of the academic year 2020/2021.

4. Study limitations: The study instruments were developed by the two researchers. Therefore, the generalization of the study results depends on the accuracy in extracting their psychometric properties (validity and reliability) as well as the objectivity of the examinees in response to the items of the two instruments.

Methodology

The quasi-experimental design was adopted in the application of this study (a pre-post design for two equal groups). This approach is based on the causal relationship between two variables, the independent variable, and the dependent variable. It was used in this study to measure the effect of the independent variable (reading counseling using augmented reality technology) on the two dependent variables (awareness towards relaxation, and attitudes towards relaxation) by having two groups, an experimental group that was trained on reading counseling using augmented reality technology, and a control group that was not subject to treatment. Two questionnaires about awareness towards relaxation and attitudes towards relaxation before and after the treatment as shown in Table 1.

Table 1. *Quasi-experimental design (a pre-post design for two equal groups)*

Group	Pretest	Training	Posttest
EC	O1 O2	X	O1 O2
CC	O1 O2	——	O1 O2

The symbols in Table 1 are: EC: experimental group. CC: control group. O1: Awareness-to-relaxation questionnaire. O2: Attitudes towards relaxation questionnaire. X: treatment. __: Without treatment.

Sample of the study

The study sample consisting of (81) female students majoring in psychology at the undergraduate level in the College of Education at Najran University in the Kingdom of Saudi Arabia was selected during the second semester of the year 2019/2020. They were selected randomly after the approval of the section as the unit of selection. The selection took place in two sections, then the random selection was made for two control and experimental groups. A section represented the control group and consisted of (37) female students who were not subject to treatment. The other section represented the experimental group and consisted of (44) female students who underwent treatment (training by reading counseling using augmented reality technology).

Instruments of the study

1. Questionnaire on awareness towards relaxation: To measure awareness towards relaxation among female psychology students at Najran University, a questionnaire was prepared concerning the educational literature and previous studies such as Al-Sherbini (2015), Al-Dhahadha, and Al-Damour (2020), and Al-Tayyib (2021). These studies were beneficial in formulating appropriate items that measure the level of awareness towards relaxation for university students (study sample). The instrument, in its final version after verifying validity and reliability in the Saudi context, consisted of (12) items. To interpret the responses of the examinees, a three-Likert scale (high, medium, and low) was used. The instrument was corrected by giving the following weights (3, 2, 1) for the aforementioned values.

1. Questionnaire on attitudes towards relaxation: To measure attitudes towards relaxation among female psychology students at Najran University, a questionnaire was prepared regarding the educational literature and previous studies such as Richards and Vigano (2012), Al-Zahrani (2016), and Mohammed (2016). These studies were beneficial in formulating appropriate items that measure the level of attitudes towards relaxation for university students (study sample). The instrument, in its final version after verifying validity and reliability in the Saudi context, consisted of (12) items. To interpret the respondents' answers, a three-Likert scale (high, medium, and low) was used. The instrument was corrected by giving the following weights (3, 2, 1) for the aforementioned values.

Validity and reliability of instruments: The validity of the content of the two study instruments in their initial versions was reviewed by ten experts in teaching techniques and psychological and pedagogical counseling of faculty members at Najran University in the Kingdom of Saudi Arabia. They were asked to verify the appropriateness of items for the instrument as a whole and to ensure the accuracy of the linguistic formulation and the suitability of the two instruments to achieve the objectives of the study, or any suggestions for deletion, addition, or modification to the items of each instrument. In light of the experts' opinions and consensus of (80%) of them to amend the language in some items to be clearer and more measurable, the amendments were made, and the two instruments were finalized. To verify the reliability of the two instruments, the study instruments were applied to a pilot sample of (20) female students from the psychology majors at Najran University who were selected from outside the main study sample. Then, the reliability coefficients were calculated for each instrument separately using the "Cronbach's alpha" equation. The total reliability coefficient of the first instrument "awareness towards relaxation" was scored (0.91). It reached (0.88) in the second instrument "attitudes towards relaxation". These scores indicate the reliability of the two instruments.

Counseling program (reading counseling using augmented reality technology):

A counseling program based on reading counseling was designed using augmented reality technology to provide university students with awareness on relaxation and attitudes towards it in the light of educational literature and previous studies (Al-Shahawi, 2006; Khudair & Faraj, 2011; Al Sharifeen & Al Mufleh, 2014; Muhammad, 2016; Bani Fayyad, 2017; Al-Shami & Al-Qadi, 2017; Al-Zahrani, 2021; Dunia, 2021). These studies showed that learners can acquire self-knowledge and improve levels of awareness of skills and behaviors through self-learning by reading and relying on reality and their self-participation in search of counseling and what helps them in facing problems and challenges. Based on the importance of reading, which helps improve focus and train the minds of learners on how to focus correctly during the study and in personal relationships, it is possible to rely on reading as a self-counseling method that helps learners to know relaxation and training on its skills, methods, and its awareness.

The counseling sessions were (6) counseling sessions, two sessions per week. Digital articles, pictures, and films were designed using the virtual world and employed in the real environment using the Zapper program on the scientific material related to the concept of relaxation, the reasons for resorting to relaxation, the benefits of relaxation, relaxation methods, and how to deal with disturbing situations to appear in a barcode at the time of the session and continue to till the day of the next session and so on. In which the student can scan the digital articles, photos, and films used through their mobile phone with the camera of the program, and she can easily access the article anywhere and anytime excitingly and interestingly to increase the effectiveness of learning about relaxation and the associated concepts and elements. After each self-training session, a self-training was employed to the student an opportunity to test the newly learned ideas in real-life situations she faces, and the results of which encourage her to continue with those ideas.

Procedures of the study

To achieve the objectives of the study, the study problem was formulated, and its variables were determined. Then, the two study instruments were prepared in their final version after verifying their validity and reliability in the Saudi context. Next, the reading training material was prepared using augmented reality

technology in its final version. After that, official letters to facilitate the task of the two researchers were obtained from the College of Education at Najran University and the Scientific Research Ethics Committee at the same university to implement the study and collect the necessary data. Then, the study sample was randomly selected (control group and experimental group) and met to apply the two study instruments for pretest and to verify the equivalence of the two groups. After that, the training material was applied to reading counseling using augmented reality technology on the study sample in the experimental group. After the training period was completed, the two study instruments were applied for posttest, then the data was collected, and the Social Statistical Analysis Package (SPSS) was used to analyze the data and extract the results. Then, the results were extracted and placed in special tables and commented on, then discussed and interpreted. Finally, recommendations and research suggestions were written.

Results

In this section, the results of this study were presented according to the two questions of the study as follows:

Results of the first research question: Are there statistically significant differences at ($\square$=0.05) between the means of the performance of the control group and the experimental group in awareness of relaxation due to the training method (reading counseling using augmented reality technology, the usual method)?

To answer this question, the means and standard deviations of the performance of the control and experimental groups in the pretest on relaxation awareness were extracted due to the training method (reading counseling using augmented reality technology, the regular method). To indicate the significance of the differences between the means, a t-test was used for independent samples as shown in Table 2.

Table 2. *Means, standard deviations, and t-test for independent samples to show the significance of the differences between the control and experimental groups on relaxation awareness due to the training method (reading counseling using augmented reality technology, the regular method) in the pretest.*

	Group	No.	Means	standard deviations	t	df	Sig (2-Tailed)
Relaxation awareness	Control	37	1.80	0.58	1.077	79	.285
	Experimental	44	1.73	0.60			

Table 2 shows that there was no statistically significant difference at (0.05) for the performance of the control and experimental groups on the pretest on awareness of relaxation due to the training method (reading counseling using augmented reality technology, the regular method). This indicates the control and experimental groups are equal in the pretest.

The means and standard deviations of the performance of the control and experimental

groups in the posttest on relaxation awareness were also extracted due to the training method (reading counseling using augmented reality technology, the regular method). To show the significance of the difference between the means, a t-test was used for independent samples, and the effect size was extracted using the eta squared for the statistically significant difference as displayed in Table 3.

Table 3. *Means, standard deviations, and t-test for independent samples to show the significance of the differences between the control and experimental groups on relaxation awareness due to the training method (reading counseling using augmented reality technology, the regular method) in the posttest*

	Group	No.	Means	Standard deviations	t	df	Sig (2-Tailed)	Effect size	Level
	Control	37	2.06	0.40	3.470	79	.001	0.132	Medium

	Group		No.	Means	standard deviations			
Relaxation awareness	Experimental		44	2.37	0.38			

Table 3 shows that there was a statistically significant difference at (0.05) for the performance of the control and experimental groups on the posttest on awareness of relaxation due to the training method (reading counseling using augmented reality technology, the regular method) on the total score and in favor of the experimental group that was trained with reading counseling using augmented reality technology. It is also evident from Table (3) that the effect size for the statistically significant difference on the total score was medium.

Results of the second research question: Are there statistically significant differences at ($\square$=0.05) between the means of the performance of the control group and the experimental group in attitudes towards relaxation due to the training method (reading counseling using augmented reality technology, the usual method)?

To answer this question, the means and standard deviations of the performance of the control and experimental groups in the pretest on attitudes towards relaxation were extracted due to the training method (reading counseling using augmented reality technology, the regular method). To indicate the significance of the differences between the means, a t-test was used for independent samples as shown in Table 4.

Table 4. *Means, standard deviations, and t-test for independent samples to show the significance of the differences between the control and experimental groups on attitudes towards relaxation due to the training method (reading counseling using augmented reality technology, the regular method) in the pretest*

	Group	No.	Means	standard deviations	t	df	Sig (2-Tailed)
Attitudes towards relaxation	Control	37	1.80	0.58			
	Experimental	44	1.73	0.60	.510	79	.611

Table 4 shows that there was no statistically significant difference at (0.05) for the performance of the control and experimental groups on the pretest on attitudes towards relaxation due to the training method (reading counseling using augmented reality technology, the regular method). This indicates the control and experimental groups are equal in the pretest.

The means and standard deviations of the performance of the control and experimental groups in the posttest on attitudes towards relaxation were also extracted due to the training method (reading counseling using augmented reality technology, the regular method). To show the significance of the difference between the means, a t-test was used for independent samples, and the effect size was extracted using the eta squared for the statistically significant difference as depicted in Table 5.

Table 5. *Means, standard deviations, and t-test for independent samples to show the significance of the differences between the control and experimental groups on attitudes towards relaxation due to the training method (reading counseling using augmented reality technology, the regular method) in the posttest*

	Group	No.	Means	standard deviations	t	df	Sig (2-Tailed)	Effect size	Level
Attitudes towards relaxation	Experimental	44	2.35	0.41	4.048	79	.000	0.172	High
	Control	37	2.00	0.36					

Table 5 shows that there was a statistically significant difference at (0.05) for the performance of the control and experimental groups on the posttest on attitudes towards relaxation due to the training method (reading counseling using augmented reality technology, the regular method) on the total score and in favor of the experimental group that was trained with reading counseling using augmented reality technology. It is also evident from Table 5 that the effect size for the statistically significant difference on the total score was high.

Discussion

The first research question: The results showed that there was a statistically significant difference in the performance of the control and experimental groups on the post-test in awareness towards relaxation due to the method of training on reading counseling using augmented reality technology on the total score and in favor of the experimental group. Also, it was shown that the effect size of the statistically significant difference on the total degree of awareness towards relaxation was medium. This may be due to the importance and effectiveness of reading counseling, especially when it was applied using augmented reality technology that arouses curiosity and exploration. Also, the merge of reading counseling with augmented reality technology-facilitated obtaining counseling towards awareness of relaxation, made the scientific material available to female students at all times and places and impacted the reading material on the students. In addition, the nature of this type of counseling does not require special sessions every time like other types of counseling, and there is no additional cost in case you want to access the material every time. The diversity of the reading materials that were presented to the students of the experimental group contributed to interacting with the material and content directly and being affected by it. The students confirmed that after each reading session, they worked on practical applications for relaxation that had an effective role in reducing their level of stress and anxiety. This result may be attributed to the fact that reading counseling based on augmented reality technology contributed to providing supportive scientific material and content for the students. This led to their awareness of the techniques of relaxation while studying, which made it easier

for them to review and study well, support their positive thinking, and increase their ability to express themselves and communicate well with the people around them. The two researchers explain this result by the students' need for counseling programs that rely on modern technologies to enhance reading counseling, especially in light of the reluctance of many students to traditional reading. The researchers also explain that female students need to raise their awareness of psychological methods that promote mental health as a preventive approach against psychological problems, especially in light of the pressures of university life in general. Perhaps this result is supportive of the results of previous studies that demonstrated the effectiveness of reading counseling in improving some skills of learners or reducing undesirable behaviors such as the Al-Sharif and Al-Muflih (2013), Muhammad (2016), Bani Fayyad (2017), Mubarak, Hakim, and Badawi (2020), and Najaf (2020). This result is also in line with the results of previous studies that confirmed the effectiveness of augmented reality technology in providing learners with different knowledge, information, and skills such as the Aqel and Abu Khater (2020), Dhahiri and Al-Hasani (2021), and Al-Harbi (2021).

The second research question: The results revealed a statistically significant difference in the performance of the control group and the experimental group in the posttest in attitudes towards relaxation due to the method of training on reading counseling using augmented reality technology on the total score and in favor of the experimental group. It was also shown that the effect size of the statistically significant difference on the total degree in students' attitudes towards relaxation was high. This may be because reading counseling using augmented reality technology used in the current study contributed to finding modern models of counseling that gave the experimental group freedom to self-research and self-implementation what they learned, in contrast to the restrictions imposed by traditional counseling. Reading counseling using augmented reality technology is considered one of the deep methods in solving personal problems as it contributed to helping the experimental group to overcome their psychological pain and give priority to their interests over any abstract considerations. The current counseling method contributed to

changing the negative behaviors of the experimental group to active positive behaviors, their negative feelings to positive feelings, correcting their wrong thoughts and cognitive aspects, providing them with the skill to form good social relationships, and helping them to improve their biological aspects. This led to changing their views and attitudes towards relaxation and its important role in making life simpler and easier and dealing with situations and events in an appropriate adaptive manner without resorting to anger and nervousness. The two researchers explain that there is a need for female students to modify their attitudes and intensify the counseling programs more attractively.

Recommendations

In light of the study results, it is recommended that:

1. Saudi universities should pay attention to students and adopt a method of reading counseling based on augmented reality technology due to its effective role in developing awareness of relaxation and attitudes towards it among students.

2. Officials and decision-makers in Saudi universities should pay attention to activating counseling programs, including reading counseling using augmented reality technology, and presenting it to students in a way that motivates them to continue studying without negligence.

3. Student counselors in Saudi universities should be encouraged to adopt the method of reading counseling based on augmented reality technology because of its clear impact in developing awareness of relaxation and attitudes towards it among university students and its role in improving their emotional and personal formation.

4. The Central Advising Unit at Najran University and Saudi universities may benefit from the two instruments used in the current study and from the activities of the reading counseling method based on augmented reality technology.

Further studies

In light of the results of the study, the following research can be suggested:

1. A study on other segments of society other than university students such as high school students and comparing the results with the results of the current study may be conducted.

2. Studies similar to the current study are suggested to reveal the impact of the reading counseling method based on augmented reality technology in developing different skills such as time management, study habits, negotiation, cooperation, and teamwork.

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Appendix (1): Questionnaire on Awareness towards relaxation

No	Items	High	Medium	Low
1	I have new knowledge about relaxation.			
2	I know about the importance of relaxation in our lives.			
3	I have knowledge about psychological relaxation steps.			
4	I know the steps of mental relaxation.			
5	I know the steps of deep breathing relaxation.			
6	I know about the benefits of relaxation.			
7	I have enough information to judge how much I need to relax.			

8	I feel like I have less anxiety and stress than before.			
9	I am excited to pass on the concept of relaxation to my family members.			
10	I am glad to know about relaxation techniques.			
11	I have enough ability to think positively about things around me.			
12	I have sufficient ability to make decisions about daily practices and activities.			

Appendix (2): Questionnaire on attitudes towards relaxation

No.	Items	High	Medium	Low
1	I think relaxation is easy.			
2	I think the information about relaxation is attractive.			
3	I see that I will practice relaxation anywhere and anytime.			
4	I think relaxation helps to get correct information.			
5	I believe that practicing relaxation improves positive productive energy.			
6	I think relaxation is important to increase positive thinking.			
7	I think relaxation is important to cope with crises and psychological trauma.			
8	I see that I am excited to pass on the concept and practice of relaxation to my classmates at university.			
9	I think relaxation helps lower anxiety and stress levels.			
10	I think relaxation contributes to a person's ability to make decisions.			
11	I think relaxation helps improve academic performance at university.			
12	I think relaxation is important to control anger and intense emotions.			