

Emotional Regulation of Stress Disordered Patients using Trivia Games

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ABSTRACT

Stress is a feeling of psychological strain and uneasiness produced by situations of danger, threat, and loss of personal security or by internal conflicts, frustrations, loss of self-esteem, and grief. Due to the increase in stress level of people around the world, various emotional regulatory stress management strategies have been developed to reduce the level of stress in disordered patients, the strategies include, development of support systems, daily fitness, emotional fitness programs, development of stress control programs and many more away from pharmaceutical-interventions.

However, these methods of regulating stress in patients, lack proper monitoring and also does not give room for confidentiality and personal space for the stress management of different levels of stressed individuals. Some of these strategies cost money, time and special resources that some people don't have which makes them want to give up on regulating their stress.

This work proposed an easy and more productive method of regulating stress through the use of a mobile Trivia Game Application that sees to the elimination of public stress management support groups, more confidentiality of stress issues and personal management of stress, the game application sees to the elimination of stress through the use of trivia questions on mobile phones according to the level of stress of the patients.

KEYWORDS: Confidentiality, Stress disordered, Trivia Game

INTRODUCTION

Stress is a feeling of psychological strain and uneasiness produced by situations of danger, threat, and loss of personal security or by internal conflicts, frustrations, loss of self-esteem, and grief, it also called emotional tension according to APA dictionary of psychology (2021). Feelings of stress are normally triggered by things happening in one's life which involve: being under lots of pressure, facing big changes, worrying about something and so much more. A number of remedies has been proposed for managing stress, but most of these management strategies have the characteristics of lacking in privacy, well-articulated means of measuring progress and the management is geared towards lumping all patients together, whereas there are levels to stress. With the introduction of information and communication technology, it becomes easy to adapt its gains to stress management through electronic health. One very common form of ICT health (eHealth) is patient self-care and education, including medical devices for self-monitoring. Along with adapting health ICT the patients are being involved more and more in their own health care process. This also seems to be a welcomed trend from the patient side, as more and more people are interested in their own health. (Abolade and Durosinmi, 2018). According to the World Health Organization (WHO, 2021), eHealth refers to “cost-effective and secure use of information and

communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research” Therefore, eHealth includes all types of information and communication technology (ICT), for example, apps and websites for health promotion, screening, assessment, and therapists’ video-chat sessions.

Recently, there has been a huge use of these technologies across the world since there are many positive effects of the usage of eHealth, such as reducing costs and replacing face-to-face healthcare contacts and communications. According to the health resource services administration (HRSA), telehealth refers to “the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration”. Researchers sometimes use the terms telemedicine and telehealth interchangeably (Stevens *et-a* , 2012) However, there is a slight difference between these two terms. Telehealth is a broader term than telemedicine in that it can denote both remote non-clinical services (such as administrative meetings) and remote clinical services. The term telemedicine, in contrast, is limited to remote clinical services only.

Hence the use of e-health provides the platform for effective management of stress, tracking the progress made in a controlled and confidential manner while making use of the paraphernalia of Information and Communication Technology (ICT). One method of harnessing these gains of ICT is through the use of trivial games. According to Collins English Thesaurus, A trivia game is one where the competitor(s) are asked questions about interesting but unimportant facts in many subjects, this in turn improves cognitive skills. Retaining information about topics of interest is like an exercise for the mind, which helps tremendously in stress management, allowing for expansion of intelligence and improvement of mental capabilities. This leads to greater creativity, innovation and problem-solving skills. Implementing the trivial games into a mobile application, help a stress disordered patient to achieve a high level of stress reduction and mind stability. Emotional regulation is essential for stressed people in order to help them become better people, successful people, and positive influence to their sets and in their environments. A game is an organized type of play, typically commenced for enjoyment and sometimes used as an educational device. Games are grouped into different categories, for example, activity, adventure, hustling, board etc. random data is additionally part of the games category and it is defined by the Collins word reference as a game or competition where the competitors are asked questions about interesting yet insignificant certainties in numerous subjects. Question and answer contests are interesting and addictive which makes it a powerful emotional regulation apparatus for stressed people. The question-and-answer contest that is developed for these stressed patients ought to be a safe haven whereby their emotional status is corrected, stress level reduced and furthermore be educated in different categories of knowledge like game, music, entertainment, literature, science etc. This game will be set up in stages in order to make the players engrossed and furthermore have a stop time feature where a player needs to beat the time and furthermore get a large percentage of questions correctly before been able to move on to the next stage.

LITERATURE REVIEW

Stress is a common denomination for every human, no matter your race, background either profession or academia. creed or religious affiliation. The only difference is the level of severity of the stress and the attendant effects it has on the human body. Anspaugh, Hamrick, and Rosato

(2003) opined that “stress came in several forms and affected people of all ages and walks of life. This implies that stress is a part of life and has many causes to it and that the degree of stress in our lives is greatly dependent on factors, such as the physical health of the individual, the quality of our interpersonal relationships, the number of commitments and responsibilities we shoulder, the degree of others’ dependence on and expectations of us, the amount of support we receive from others and the number of changes of traumatic events we go through in our lives”. This means that life itself is stress related depending on the individual’s lifestyle and the level of cultural development.

Anspaugh et al. (2003) contended that most stressful situations fall into harm-and-loss situations, threat situations or challenge situations. Instances of harm-and-loss situations are the death of a loved one, loss of personal property, physical assault and injury, and severe loss of self-esteem. Threat situations may be real or perceived and can range from being caught in traffic to being unable to perceive an event. Threatening events dwell on the ability of the individual to deal with day to day activities. Threat stressors result in anger, hostility, frustration or depression. Challenging situations promote either growth or pain, and these stressors mostly involves major life changes which include taking a new job, attending a new school, graduating from college, leaving home and getting married. Challenge situations are usually seen as being good but involve stress, because they disrupt homeostasis and require considerable psychological and physical adjustment. Stoppler (n. d.) is of the view that manifestation of excess or poorly managed stress can be extremely varied and that, while it has been reported by many people that stress brings about headaches, sleep disturbances, feelings of anxiety or tension, anger or concentration problems, others complain of depression, lack of interest in food, and increased appetite, among others. In severe cases, Stoppler (n. d.) pointed out that individuals experienced loss of interest in normal activities. Therefore, there is a need to manage stress in ways not to create another level of stress. A number of stress management strategies have been proposed. The next section looks at a brief explanation of these strategies.

STRESS MANAGEMENT STRATEGIES.

A number of strategies have been proposed for managing stress. Some are medical interventions, while others are behavioral and life style changes. Some of the available non-medical strategies from literature includes

STRESS SELF-ANALYSIS

The identification and isolation of the cause of stress is the first step to managing stress. By looking at these situations, stress can then be seen from a different perspective, then reactions and feelings can then be analyzed objectively

TIME MANAGEMENT AND PLANNING

By managing time and prioritizing tasks, you can have personal time to relax and to socialize. Make lists of the things you need to be working on (for the short term and long term) so you can use your time effectively. Effective planning will help eliminate the stress of last minute work. One effective tool for planning is a month-at-a-glance calendar. This will help you to see the big picture and help you plan ahead for upcoming stressful weeks.

GET ORGANIZED

Try to keep organized files for your organization. This will make it easier for you and other members to find important information and will eliminate the stress of trying to find lost items. Also, developing good files will help eliminate the stress of future student leaders.

SHUN THE “SUPERPERSON” URGE

It’s easy to feel that you need to be doing multiple projects, all perfectly, and if you don’t the whole organization will suffer. This will lead to additional stress. Realize that you are human and you can only do so much.

SLEEP

Sleeping allows your body to re-energize so you will not be continually exhausted. Lack of sleep can make a person become irritable and moody and can make small trivial problems seem extremely important. Getting enough sleep can help you to put things in perspective and not get too stressed out.

RELAXATION AND MASSAGE

These techniques help to slow down the body both physically and mentally. Techniques to consider include:

Meditation, Praying, Mental imagery, Deep breathing, Progressive relaxation and Reading

EAT RIGHT AND EXERCISE

Good nutrition and exercise can help to reduce tension. Be sure to eat nutritious meals or snacks... trying to work while suffering from low blood sugar can further intensify stress. Also, getting adequate physical activity can help you to work off the stress and tension while helping you to stay in shape.

REWARD YOURSELF

Give yourself a reward for following the stress reduction techniques. For example, if you follow your time management strategy for a week, maybe you’ll let yourself sleep in for a day or take yourself to a movie.

LEARN TO SAY “NO”

If you take on projects you don’t have time for, you probably will not be helping anyone. Prioritize and learn to say “no” to projects you can’t handle or don’t have time for (even if you really want to do them).

LEARN TO DELEGATE

Train your organization to help you plan and do the work. After training your organization, be sure to delegate tasks. Delegate to someone you know can do the job; then don’t worry about it. One of the advantages of delegating is that it eliminates some of the stress and pressure in your life. If you spend your time worrying about how your delegated task is going, you’ve wasted this advantage.

DEVELOP A SUPPORT SYSTEM

Talking about some of your stressful situations may help you gain insights, get some things off of your chest and help keep things in perspective. Talk about things with your roommate, friends or family. You might also use some of the counseling services at the university. Learning how to deal with stress is a very important life skill. To live a healthier, happier life, you must learn to accept and cope with the stress in your life. Practice is the key.

REVIEWS ON NON-MEDICAL INTERVENTION OF STRESS

Liza et-al 2011 in their research also looked at some non-medical techniques for stress management After a thorough literature review in major databases (MEDLINE, Scopus, Science Direct) came up with the following techniques: progressive muscle relaxation, autogenic training, relaxation response, biofeedback, emotional freedom technique, guided imagery, diaphragmatic breathing, transcendental meditation, cognitive behavioral therapy, mindfulness-based stress reduction, they concluded that all these are all evidence-based techniques, easy to learn and practice, with good results in individuals with good health or with a disease.

Ogba et-al 2020, studied the effect of a non-medical intervention on the management of stress The findings of this study suggest that the efficacy of music therapy with relaxation technique for improving the students' stress management can be consistent at follow-up. Hence, music therapists, counsellors and psychotherapists should continue to investigate the beneficial effects of music therapy with relaxation on stress management among university students in every part of the world.

In another study, researchers suggested that relaxation and cognitive behavioral skills are helpful. Results so far suggest and that group methods are both more cost-effective and more beneficial than individual counselling. It is important for scientific, practical, and financial reasons that stress management programmes be properly evaluated.

Erick T. Baloran (2020) in his studies, looked at the solution to stress due to the effect of COVID-19. He observed that Non-medical prevention measures were perceived as highly effective

Gosain, R et-al 2020, in a study on cancer observed that stress appears to promote cancer progression via activation of the sympathetic nervous system releasing epinephrine and norepinephrine as well as activation of hypothalamic-pituitary-adrenal axis releasing cortisol. These stress hormones have been shown to promote the proliferation of cancer cells. This review focuses on stress-reducing strategies which may decrease cancer progression by abrogating these pathways, with a main focus on the β -adrenergic signaling pathway. Patients utilize both non-pharmacologic and pharmacologic strategies to reduce stress. Non-pharmacologic stress-reduction strategies include complementary and alternative medicine techniques, such as meditation, yoga, acupuncture, exercise, use of natural products, support groups and psychology counseling, herbal compounds, and multivitamins. This implies that even in stress associated with terminal diseases, non-medical approaches work well

Dijkstra et-al 2021 looked at team cognition in health care workers performance. They observed that stress can have a significant impact on team performance. Developing strategies to prevent and manage stress and its impact has the potential to significantly increase performance of teams in stressful situations. Further research into the development and use of team cognition in stress in healthcare teams is needed, in order to be able to integrate this 'team brain' in training and education with the specific goal of preparing professionals for team performance in stressful situations.

It can then be concluded that non-pharmaco-medical intervention is a viable means of dealing with stress as seen from literature. Another non-medical intervention is the idea of trivia games.

TRIVIA GAMES

In the 1960s, nostalgic college students and others began to informally trade questions and answers about the popular culture of their youth. The first known documented labeling of this casual parlor game as "Trivia" was in a Columbia Daily Spectator column published on February 5, 1965.

Trivia game is the subcategory of “quiz” that is trivial; these are gimmicky game, show questions that aren't really useful. Quiz games on the other hand quiz people on useful, relevant, academic knowledge. Trivia' comes from the Latin 'trivialis,' meaning "found everywhere, commonplace." One meaning of 'trivia' is "unimportant matters." Knowing obscure facts is good for our Mental Health. Experts say playing trivia games can provide a dopamine rush much like gambling, without the negative effects. It can be quite satisfying and doesn't have many downsides. That's how psychologists describe the mental health benefits of trivia. The way people play trivia games continues to evolve whether it's folks enjoying Trivial Pursuit at home or attending a pub trivia night. But the basic premise remains the same: People enjoy the thrill of providing correct answers to questions about lesser-known facts.

THE BRAIN AND TRIVIA

Retaining information about things we're interested in can be like exercise for the frontal cortex as the brain ages, Stokes pointed out. “That’s the first thing to go with injury or with age if we don’t use it,” she said. While knowing trivia is likely part of an intense interest in a topic for anyone, Kounios said, “this can motivate a person to the point at which they collect information about that topic compulsively. This might be called the ‘collect them all’ phenomenon. People collect facts about a topic the way a stamp collector collects stamps. The more, and the rarer, the better.” Stokes said there can be downsides if someone is obsessive about focusing on one thing and has gaps in their knowledge base or is compulsive about looking up facts instead of engaging with people. “Trivia can light up hoarding circuits” in the brain, and games can light up addictive circuits. “Some people are compulsive about gathering information on a topic,” Kounios said. “It’s only a problem if they’re ignoring other things in their lives.” Hence when applied to stress management, it helps the individual manage stress level.

The literature review shows that stress is a major enemy that all people from all fields of life have to battle with every time and try to overcome, stress can virtually be caused by any form of event whether positive or negative e.g. planning a wedding, lecturing a class of students for hours etc. various stress management strategies and procedures have been made to help stress patients overcome stress and reduce it to the lowest minimum, procedures such as social support system, breathing exercises, daily fitness exercises and the likes have been developed to help regulate stress but they have not been the most effective because they lack proper monitoring of the patients and also don't give room for personal management of stress and confidentiality. The social group therapy is a common procedure that many stressed people use to regulate their stress but majority of all the patients in the social group don't really get their stress levels reduced at the end of the day due to some factors such as, a person not been able to speak about their selves in public, conflicts may arise amongst fellow group members, it is not a good stress management procedure for people who are suffering from traumatic stress and the likes. Games have been proven by scientists and researches as a means not only used for fun but also for education and for stress relieve, various games have been developed for emotional regulation of stress and have been reviewed in this literature review, these games include The Aiming game, Space Investor and

Auction game. This games were developed to emotionally regulate stress but they have some downsides which doesn't make them very effective, the games are Personal Computer (PC) based and also are just based on a particular field of interest, majority of stress patients need a procedure that they can call on at any time of the day to relieve their stress levels and this games can't do so because not every stress patient has a PC and people who have PCs may not like shooting, investing or space games, the games are also not internet based so they don't get any form of new updates or features.

METHODOLOGY

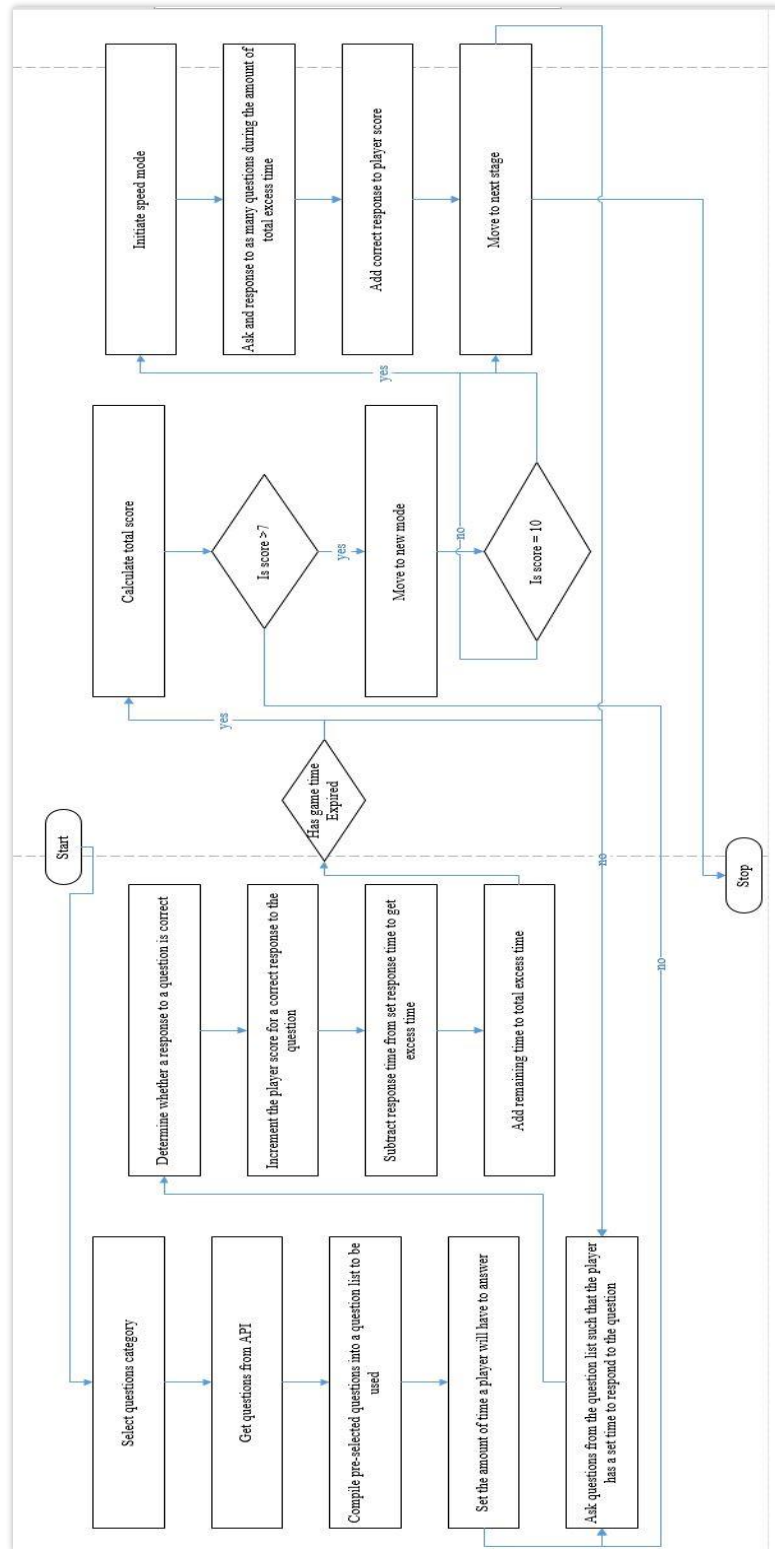


Figure 1: Information flow for the trivia game 18

The diagram in figure 1 is the Arrangement of Steps performed in the playing of the Trivia Game. Prior to the playing of the game, there is the generation of questions from the API (Application Programming Interface). This procedure is necessary for the creation of the game because the questions are from various categories in which the category to play from will be preselected by the player. The questions all have the same complexity. The questions all have the same weight or according to complexity. The number of questions generated is sufficient to enable the player to have a broad Selection of questions from which to choose. once the question has been generated from the API, in Step 2, the system will select a predetermined number of questions from the question API. Step 3 compiles the Selected questions into a pool of questions for the game. These selected questions would comprise the pool from which the questions will be asked during the game. Step 4 determines the amount of time allotted to answer each question. Each question will require the same amount of time to answer. The next step in the process is to play the game in step 5. The total number of question to answer is 10 within the time limit of 60 seconds.

Figure 2 shows the Architectural framework for the trivia game application, it shows the processes involved in getting the game questions unto the phone through the internet. When the player wants to play the game, he opens the game and when he clicks on the play button, the phone uses internet connection to request for the questions from the Trivia Game Application User Interface(API) Database, the API generates the questions and sends it back to the phone through the internet, this happens in less than 5 seconds and the game starts to get played.

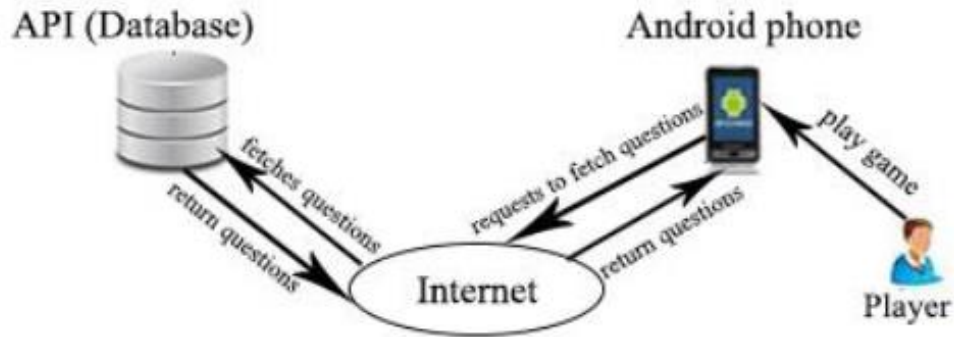


Figure 2: Conceptual view of the image

RESULT AND DISCUSSION

This module houses the full functionalities and management of the game, Figure 3 shows the game home screen where the player can navigate to play the game or select the sidebar option, it also shows the players best score and the sound icon which can be clicked to either on or off, Figure 4 shows the sidebar menu which comprises of the category and home menu, Figure 5 shows the view of the various Trivia categories to select from, Figure 6 shows the question screen of the game which has a timer set for 60secs and 10 questions to answer, Figure 7 shows the view of how the game shows the correct answer to a question, the correct answer shows in a Brighter color should the player click on a wrong or right answer.

Figure 8 shows the play again screen the player gets when the score is less than 7, Figure 9 shows the pop up screen to the speed mode when the player gets all 10 questions correct, Figure 10 shows a congratulations screen that comes up when the player gets more than 6 questions correct, it brings out 2 options to either play the stage again or move to the next stage of the game, other Figures 11, shows the screens of new stages of the game when the player continues to answer more than 7 questions correctly in each stage, Figure shows the screen of the high score after winning the 4th stage .

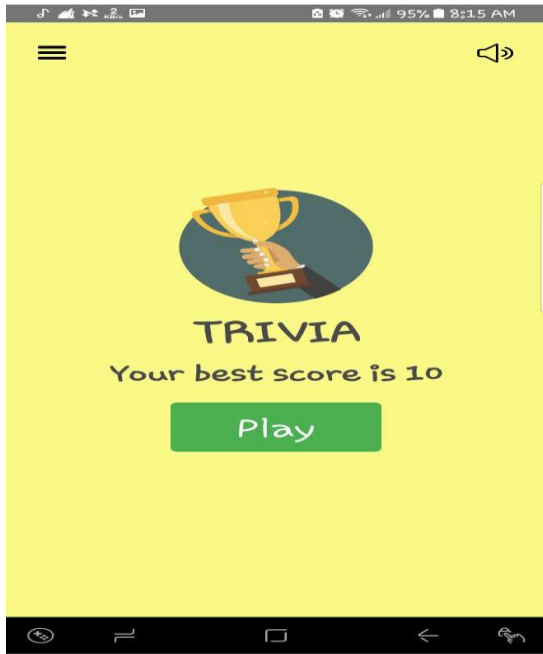


Figure 3: Home page for the Trivia Game

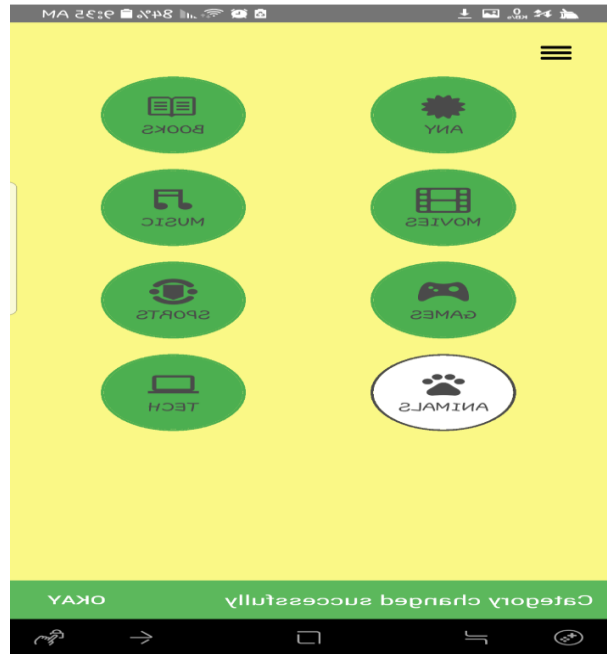


Figure 5: Categories Screen of the Trivia Game to select from

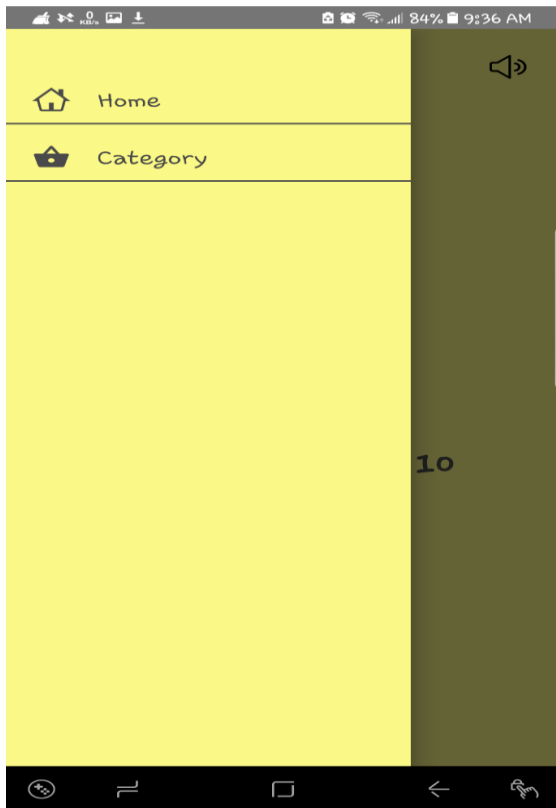


Figure 4: Sidebar of the Trivia Game

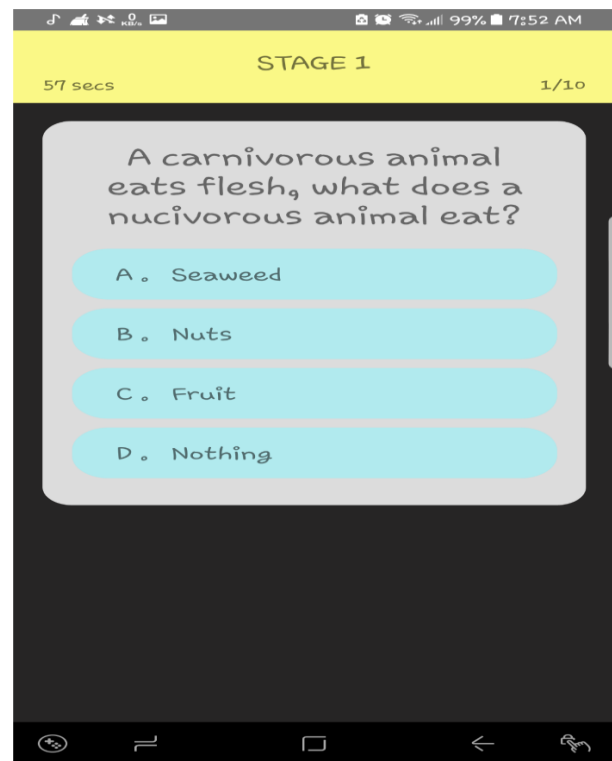


Figure 6: Question page of the Trivia Game

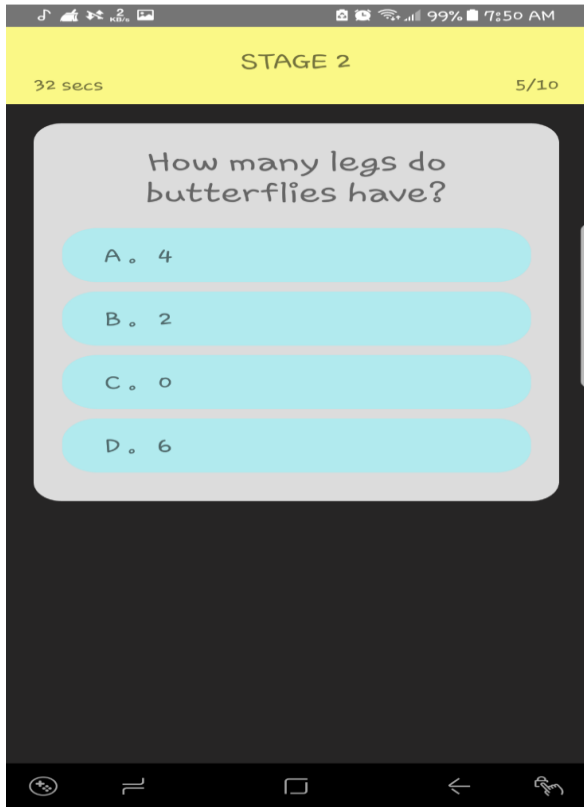


Figure 7: View of correct Answer to question

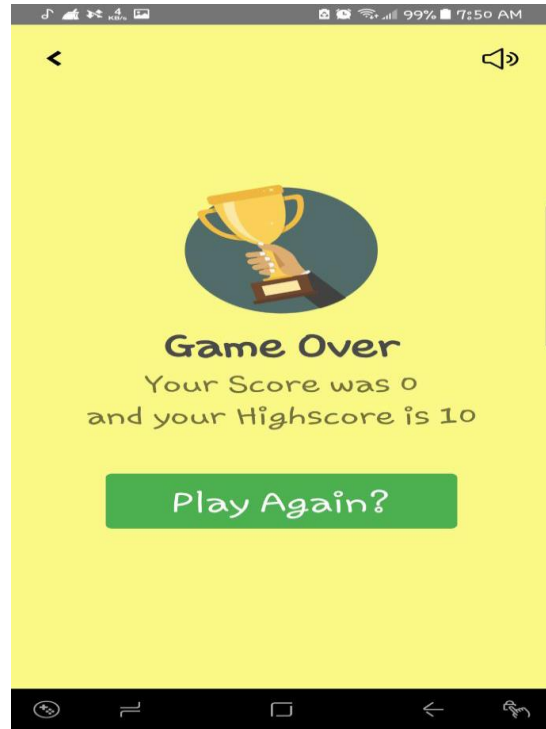


Figure 8: View of the play again Screen when a player scores less than 7

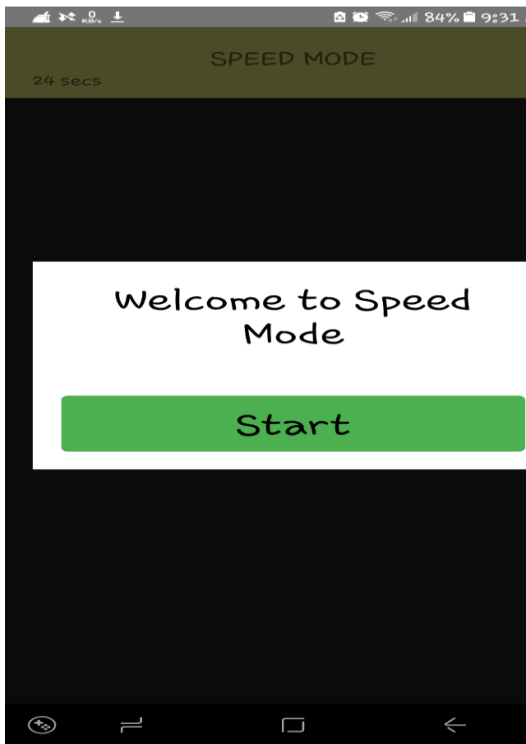


Figure 9: View of the Speed Mode when a player gets all 10 questions correct

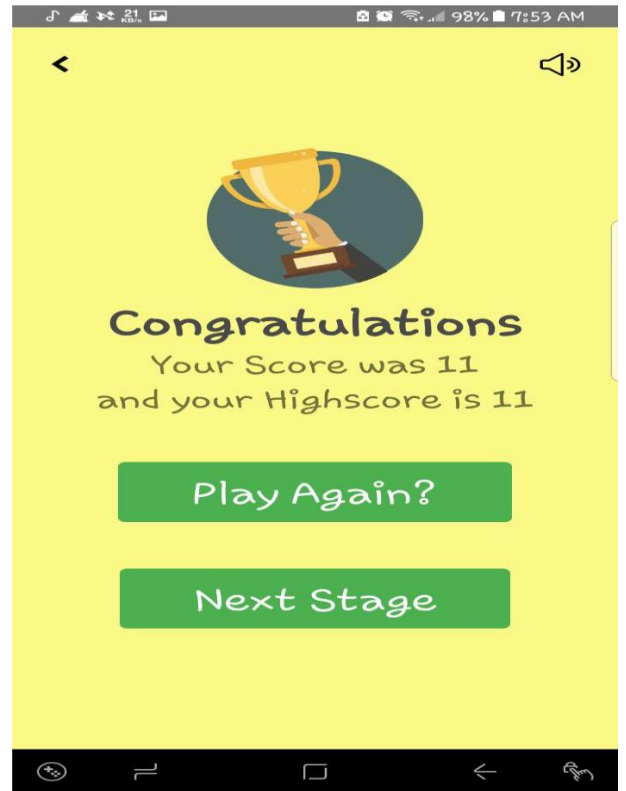


Figure 10: View of the Next Page or Play again Screen



Figure 11: view of stage four

CONCLUSION

A mobile Trivia Game Application is a very useful software whose advantages are more than disadvantages. It is highly recommended for all stress disordered patients due to its fast and effective way of relieving stress personally. The Trivia Game is an application that was developed according to stress patient's requirements. Lot of work and effort was put to make the game software built on this topic run efficiently and smoothly. The developed game is tested by real people with real data. This project is developed using JavaScript, React-Native, Redux, GenMotion and Opendtb. By using this application, stress patients can easily get less stressed quickly and personally with convenience using their mobile devices. It provides extendibility also such that the game module can be equipped with more features whenever there is a change in requirements. This reduces the social group therapy stress, work stress or any form of stress to the lowest minimum.

RECOMMENDATIONS

This project has been implemented as an Internet service required Game because get its questions from an API (Application Programming Interface) however, the following recommendations are made for future work: A Database that houses the Trivia questions. The game application should be able to work without internet connection. Achievements board and prize winning should be introduced to make the game more fun and interesting for players. A feedback page should be added to the game to manage the players' improvements.

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Authors profile



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