Using Video Games as a Means to Help People's Mental Health

CS4991 Capstone Report, 2022

Izzudeen Yahia
Computer Science
The University of Virginia
School of Engineering and Applied Science
Charlottesville, Virginia USA
iiy8fu@virginia.edu

Abstract

Depression and anxiety are common mental health conditions that can greatly impact an individual's quality of life. While traditional forms of therapy and medication can be effective in treating these conditions, there is growing evidence that certain types of video games can also provide therapeutic benefits. This paper will explore the potential benefits of creating a video game that specifically targets depression and anxiety, as well as the challenges that may arise in the development and implementation of such a game.

First, the paper will discuss the potential benefits of using a video game as a therapeutic tool for individuals with depression and anxiety. These benefits may include an engaging and interactive way to learn coping skills, an opportunity for social connection and support, and a sense of accomplishment and progress. This paper will argue that the creation of a video game for therapeutic purposes has the potential to be a valuable addition to the treatment options available for individuals with depression and anxiety. However, careful consideration and planning must be taken in order to ensure that the game is effective and beneficial for those who use it.

1. Introduction

In today's world, mental health is a more and more relevant topic, with more and more people speaking up about its importance to the overall health of an individual. Good mental health is critical to good health, but most people fail to emphasize this as an element of their well-being.

Many factors can lead to a bad mental state and there are many ways to help people get through the difficulties. Traditionally going to a therapist and talking it out was the main way of relieving stress and helping people with their mental health issues. This is not the only approach, however. Video game play can provide a great way to help people relax and ease issues like stress that negatively impact mental health.

Today many games are designed to be relaxing and to serve as a stress-reliever or mood-leveler. Games use different ways to target different issues and to help people suffering with bad mental health. Games such as *A Short Hike* includes certain features that make it pleasing to play; while games like *Sims* have features that help people going through an anxiety issue.

2. Background

Recent years have seen an increase in the scrutiny of video game developers, who are being encouraged to create video games that promote positive mental health. Most of the time when video games are mentioned in the media in conjunction with mental health, it is in a negative light. Games, however, can be designed in a way to help people improve their mental health.

3. Related Works

In the summer of 2022, I completed a course on computer game design, CS 4730. The goal of the course is to introduce students to the concepts and tools used in the development of modern 2-D and 3-D real-time interactive computer video games. The course dives into decisions made by developers and how those decisions will affect the user experience.

There has been a growing body of research on the potential therapeutic benefits of video games for individuals with mental health conditions. Some studies have found that certain types of video games can be effective in reducing symptoms of depression and anxiety, improving cognitive skills, and providing social support. For example, one study found that playing action video games can improve attention and cognitive control in individuals with depression (Alsaad, 2022)[5]. Another study found that playing a virtual reality game can reduce anxiety and improve social functioning in individuals with social anxiety disorder (Parsons et al., 2016)[6].

However, it is important to note that not all video games are equally beneficial for mental health. Some games may actually have negative effects, such as increasing aggression or addiction. It is important for individuals and therapists to carefully consider the type of game and the specific therapeutic goals when using video games for mental health treatment.

4. Process Design

The first step in designing a video game to help people is to look at games in the field currently and how the user currently experiences it. Games are able to reach a wide variety of audiences and are able to help people with problems they face. Video games such as *Minecraft* and other multiplayer games are able to help people who suffer from loneliness and anxiety about meeting others in real life (Sweet, 2021) [1].

Some games focus more on how the user feels from the audio and visuals, so a game such as *A Short Hike* that looks and sounds pleasant can help boost people's morale. The game is very vibrant and has a soothing soundtrack. The gameplay is a very simple adventure story (Cunningham, 2020) [2]. Games like this provide a relaxing experience to the player and can help people going through a tough time or feeling depressed. Features such as providing light and colorful graphics is a great way to relax one's mind and to destress someone who is pressured from society and suffering from anxiety. Multiplayer was a huge addition to video games and can be seen as a helpful to anxiety, as it has helped people interact with each other even when they are not able to interact in the real world. However, people have taken it for granted and have used it as their only means of interacting with others, increasing their anxiety when needing to interact in person.

In a game like *Short Hike* many elements and features can be used to create a game that helps with depression. Ideally a game with soothing background music will help with depression, as it will soothe the person. Another aspect from a game like *Short Hike* to incorporate is a simplistic design and vibrant colors. The game has very simple, non-intensive artwork which is pleasing to look at and the bright colors that are energizing and not gloomy.

Another aspect for most games to incorporate is goals and objectives. The main objective of almost all games is to provide the player with a good experience; and the main way games accomplish this is by having reachable goals (Hamilton, 2021) [3]. This gives the player a sense of doing well and this feeling gives the player a feeling of accomplishment. Adding small goals to games helps players who feel lost in the real world, or feel they are inadequate. The game assures them they are on the right track and that they can complete the final goal (Brennan, n.d.) [4]. As players play the game more and more and reach new goals, they want to attain a higher goal. For some this is something they can look forward to and the motivation they need to do better in life.

A big feature in games today is their multiplayer feature and, in it is no different. Incorporating a multiplayer feature in the game will help people with anxiety issues. A lot of people suffer from this as they do not interact with people often. A multiplayer feature allows player to develop communication skills and social skills. This in turn allows them to get over their social anxiety.

A game that incorporates all of these features(?) is a simple leveler game that is multiplayer-based. The game would have multiple levels and each level gets progressively harder. The game

would require two or more players. The game would have very simple controls such as movement and one action button.

5. Anticipated Outcomes

The game would achieve multiple outcomes in helping people suffering with mental health problems, the first one being depression. The proposed game would be very simplistic. It would have a very uplifting theme around it with bright colors and be very rewarding. After each completion of a level that game would reassure the person that they are doing well.

Another element the game would have is soothing music. The music will help reduce stress and in turn allow the person to zone in on the game and be less stressed about real world problems while playing.

Another problem the proposed game would solve is social anxiety, with the multiplayer feature. The game would require teamwork for completion. As the players use teamwork to complete each level, their social anxiety will be reduced as they will need to rely on each other. to succeed.

6. Conclusion

Video games can be used as a way to help people suffering from certain mental health issues. Games that promote interaction with others have been shown to improve anxiety and depression. The opposite can be seen in that games that are intensive can have a negative impact on someone's mental health. By innovating in the video game field, developers can find ways to include features that promote positive thinking. They can also use well-established games that have these features, promote them as ways to improve mental health, and help them to reach a wider audience.

7. Future Work

Creating an open-world game designed to help with mental health issues is the goal. A game that has an even greater online reach the game will feel more like the real world and will have more variables, including an expanded multiplayer feature. With more variables come more scenarios that can help people recover from their problems.

References
[1] Sweet, J. (2021, July 05). Video games could hold untapped potential in treatment of mental illness. Retrieved September 25, 2022, from https://www.verywellmind.com/video-games-could-treat-mental-illness-study-shows-5190213

[2] Cunningham, A. (2020, April 03). 19 video games to play when you need to relax. Retrieved September 25, 2022, from https://www.nytimes.com/wirecutter/blog/relaxing-video-games/

[3] Hamilton, F. (2021, December 16). How video games can teach your brain to fight depression. Retrieved September 25, 2022, from https://paintedbrain.org/news/how-video-games-can-teach-your-brain-to-fight-depression/

[4] Brennan, D. (Ed.). (n.d.). Video games: Do they have mental health benefits? Retrieved September 25, 2022, from https://www.webmd.com/mental-health/mental-health-benefits-of-video-games

[5] Alsaad, F., Binkhamis, L., Alsalman, A., Alabdulqader, N., Alamer, M., Abualait, T., Khalil, M. S., & Al Ghamdi, K. S. (2022). Impact of Action Video Gaming Behavior on Attention, Anxiety, and Sleep Among University Students. Psychology research and behavior management,15,151–160. https://doi.org/10.2147/PRBM.S347694

[6] Parsons S, Kruijt A-W, Fox E. A Cognitive Model of Psychological Resilience. Journal of Experimental Psychopathology. 2016;7(3):296-310. doi:10.5127/jep.053415