
Poster: Flair - Towards a Therapeutic Serious Game for Social Anxiety Disorder

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Abstract

In this paper we present *Flair*, an interactive fiction game that is intended to serve as a psycho-educational material for the therapeutic treatment of Social Anxiety Disorder (SAD). Along with the game design approach, explanation of the inclusion of cognitive-behavioral therapy (CBT) techniques into *Flair's* story, and the psychological benefits of doing so, is extensively discussed. The initial results are encouraging as patients (15 users) and a therapist respond positive on the current game design.

Author Keywords

Social Anxiety; Game Design; Serious Game; Video Game; Mental Health

ACM Classification Keywords

K.8.0 [Personal Computing]: General - *games*.

Motivation

Social Anxiety Disorder (SAD) is one of the most common mental disorders, is often hard to diagnose (coming with social stigmata) and linked with high cost [3]. Diagnosis and treatment are also difficult, the most effective being cognitive behavioral therapy [2].

Previous review studies have suggested that computer games can serve as an alternative or additional form of

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Figure 1: Nevermind (Image courtesy of The Flying Mollusk)

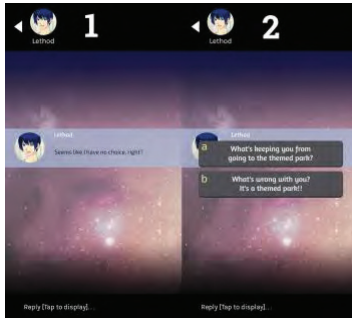


Figure 2: Chat interaction example (read from left to right)

treatment in several medical areas (schizophrenia, asthma or motor rehabilitation) [2]. "Serious games" are games that hold another purpose rather than entertainment. Appropriating that aim, we have created an interactive fiction game that emblemizes the experience of living with a mental illness, Social Anxiety Disorder.

This paper portrays our efforts towards designing an interactive psychoeducational material, to support the healing process of a SAD patient who is currently taking therapy to overcome this particular mental disorder. We intend to deliver a therapeutical outcome to SAD patients that combine *Flair* with their talked therapy by implementing CBT techniques into it. Thinking of *Flair* as an instrument similar to a manual or other psychoeducational material, tools that therapists repeatedly incorporate into their treatments, *Flair* should facilitate the helping relationship between therapist and patient as well.

Social Anxiety Disorder (SAD) or Social Phobia

Anxiety disorders are the most prevalent mental health conditions. Although they are less visible than schizophrenia, depression, and bipolar disorder, they can be just as disabling [2]. Social anxiety, which involves fear of being negatively evaluated in social performance situations, is a normal transient experience for most people [8]. Left unattended, anxiety symptoms are associated with a lower general quality of life [1] and can be said to account for decreased productivity, increased morbidity rates, and the growth of alcohol and drug abuse in a large segment of the population [2]. The high prevalence of this disorder, and the suffering that comes with it, is substantial reminder on the importance of developing effective interventions that can undertake this mental illness.

Serious Games

There are several serious games that try to address mental illnesses either to provide awareness or relief to the person playing it. *Elude* is a game created to raise awareness of depression by portraying the main character as a person who is battling with that disorder and who attempts to climb upwards in the game but is vulnerable to the quickly changing "emotional landscape" [6]. The main target for this game is family members of people who have been diagnosed with depression. *Nevermind* (Figure 1) is an adventure game where you must explore some bizarre worlds to unlock a mystery that lurks within each patient's inner psyche. [7]. *SuperBetter* is a Cognitive-Behavioral Therapy-based (CBT) gamified application that uses a positive psychology program in which players earn points and "level-up" as they progress thought activities [9, 4].

Game Design Approach

Flair's interface, as other interactive fiction games, resembles a chat-room, environment that can be compare to popular chatting applications like Line, WhatsApp, KakaoTalk, or WeChat. The player will interact with other characters by choosing between two to three options when their time to make a reply in the chat comes, delivering a message to the other characters like if the player had just typed their own answer to the previous interaction.

Six common chats will be the introduction to the game story. As the game progresses, the player will need to interact with the characters and choose the correct answers to their messages before a game branch is presented. A game branch will introduce the route of the character whom the player positively interacted the most. After the game has branched, the player will unlock the character's backstory, dreams and ambitions, and social anxiety manifestations. In order to achieve the best ending possible to every

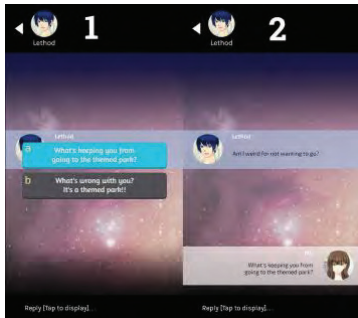


Figure 3: Chat interaction example: Choice “a” (read from left to right)

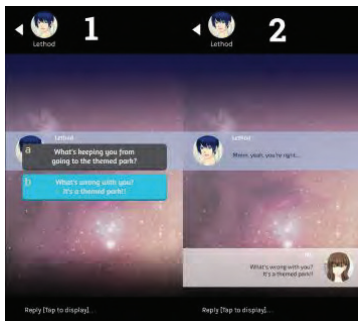


Figure 4: Chat interaction example: Choice “b” (read from left to right)

character’s route, the player will need to: a) Choose an answer that will increase the likability points of the player (motivate the characters, be kind to them, support them when they are facing difficulties, etc.); or b) Choose an answer that will lead the characters to acknowledge and fix their problem by finding ways to overcome their anxiety problems.

Research has shown that cognitive-behavioral therapy (CBT) is the most effective treatment for depressive and anxiety disorders, surpassing medication and other types of therapy in its ability to ameliorate suffering and prevent relapse [4].

Therapeutic Approach through Interactions

We will explain this section with a part of Lethod’s route. Lethod’s fear to social interactions keeps him from doing activities that he would like to take part in because he is constantly afraid that his actions will embarrass him or that he may be judge by the spectators.

At the beginning of the branch, Lethod is asked to conduct a quality inspection on a new themed park. Despite giving an enthusiastic first reaction, without realizing, Lethod starts thinking about how he prefers to stay indoors because he would like to avoid any circumstance that will increase his anxiety. After reluctantly accepting that the mission, Lethod talks to the player, in this part is where the player will need to choose between two options to interact with the character, choice “a” and choice “b” (Figure 2). We will exemplify how the chat will progress in both instances.

Chat 1: Continuation with choice “a” (Observe Figure 3 to see the illustrated example).

-Player: What’s keeping you from going to the themed park?
-Lethod: Am I weird for not wanting to go? I just don’t like

this... It will be so crowded... and I would need to talk to the employees to ask them about the park’s services and stuff.

Chat 1: Continuation with choice “b” (Observe Figure 4 to see the illustrated example).

-Player: What’s wrong with you? It’s a themed park!!
-Lethod: Mmm, yeah, you’re right... I don’t know. I think I should go now.

If the player chooses the reply “a”, the character will explain himself and share his thoughts about the situation. In case the player chooses the reply “b”, Lethod will take the comment as an aggression and he will not go into detail about his behavior. Briefly, if we get to know more about the character, we will slowly understand his point of view (thoughts), fears and beliefs (feels), and how he reacts in such circumstances (behaviors), those are CBT principles that are applied to the decision making process, choosing correctly (in this case choice “a”), the character will uncloze, and the game will progress until its good ending.

Experiments and Initial Results

Firstly, we gathered a group of SAD individuals and applied a pretest before installing the game on the tester’s smartphone. Secondly, we permitted the testers to play the game for one week. They were allowed to play through one story of the branched game (Lethod’s story) until its conclusion. Lastly, after finishing the game, a post-test and an interview was conducted. For this test, fifteen people participated. the testers were between 15 to 32 years old; middle and high-schoolers, university students, employees; nine females and six males.

After playing *Flair*, testers showed a positive change on their mood (improvement of 40%) based on the comparison between the pretest and the post-test. On the post-test, statements like “My fear of embarrassment keeps me from

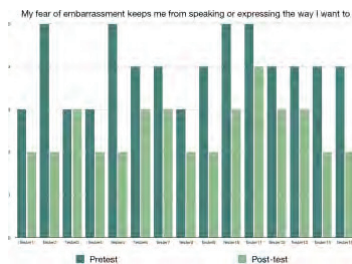


Figure 5: Comparison between pretest and post-test on a scale of 5 to 1 (5 being the highest score)

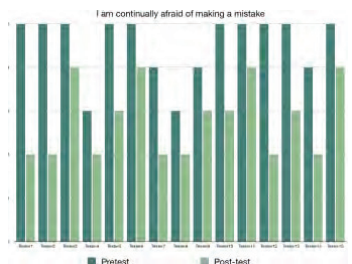


Figure 6: "I am continually afraid of making a mistake"

speaking or expressing the way I want to" and "I am continually afraid of making a mistake" decreased on the rating scale (refer to Figure 5 and 6). Additionally, 93.8% of the testers thought the character resembled a person suffering from SAD in real life. Testers discussed the how the story and empathic characters help them to engage with the game. Affective or positive words were used to describe their healing progress ("I am improving", "I feel secure"). Lastly, 3/4 of the testers agreed on the following declaration: "Overall, I think this game helped me with my SAD healing process".

Conclusion and Future Work

This research intended to prove the concept of *Flair* as an interactive fiction game that acts as a support material for SAD treatments. From our validation we can state that: 1) SAD patients felt comfortable using *Flair* as a tool for their therapy; 2) *Flair* brought disclosure to the ones who used it, even in a supportive manner of the client-therapist relationship; 3) Patients that used *Flair* as a support tool declared an improvement in their healing progress. Although this results are promising, there are two main areas that we could improve: one, testing the other three character stories that the game has to offer; two, testing *Flair* in different environments and therapeutic approaches. Definite evidence on the clinical effectiveness of *Flair* will require a larger scale of clinical trials.

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