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Being Different: The Transformative Potential of Virtual Reality

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Serious Games in Group Help to Evaluate the Risk of Suicide

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Abstract. Serious games can be used in many contexts and also in the field of psychotherapeutic mediations. The game Clashback by Prof. Pommereau has been developed in order to re-create situations of crisis between teenagers and their family. The main character of this game is Chloe, a 16-year-old girl who is trying to convince her father to allow her getting a tattoo. The player chooses the replies that he/she considers best in order to achieve this goal. We used this game with teenagers between 14 and 19 years old who have suicidal tendencies (group 1) or have attempted to commit suicide (group 2), during their full hospitalization in a psychiatric center for an average duration of one month. We proposed the game to groups of teenagers, but only one member of the group played during a single session. Every game was recorded and it provided a quantitative profile about the player, on aspects such as sociability, impulsiveness and adaptability. We compared these results to genogram, medical diagnosis and to qualitative data collected during scheduled clinical interviews during hospitalization. We compared the 3 mentioned aspects between the group 1 and group 2, which were composed of 20 participants in total (10 girls and 10 boys). Results show that the sociability and adaptability are higher for teenagers of group 1, whereas impulsivity seems higher for teenagers of group 2. These results indicate the possibility to use this kind of technological support as a complement in the psychological evaluation of measuring the risk of suicide.

Keywords: serious games, impulsiveness, suicide, adolescence

1. Introduction

Serious games are defined as a kind of theoretical application whose initial intention is to combine with consistency both serious aspects with the fun side of video games [1]. Some serious games are, for instance, designed to help joint attention for example, while other require special tools (glasses, gloves, etc.). These games are usually widely diffused, especially through mobile devices.

The term "serious games" sounds as a paradox: playing is rather associated with fun and as a pause from reality's "serious" social requirements. Despite this

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apparent contradiction, playing is serious because it allows the child to grow and build its personality.

The use of serious games is directly facilitated from the appetite that especially of children and adolescents have for virtual reality; thus the less pleasant, even sometimes dreaded work of learning and care is more easily accomplished. This software is most commonly found in applications of somatic care, for example in the context of functional rehabilitation or in prevention campaigns. However, the psychological care also benefits from the contributions of serious games in various approaches and different situations.

Depressive disorders are among the issues that are targeted by serious games. For example, the game Sparx⁴⁷ (2012) has been developed in order to help young people with mild or moderate depression (addressed to New Zealand residents only). The player incarnates a hero in a script written by psychologists. In the research field using the virtual reality exposure, recent studies [2] have explored the effects of immersion on the treatment of depression.

For a teenager one of the major risks of depression is the passage to the suicidal act. This represents a public health problem for this age group.

We had the possibility to use the Clashback game with a population of adolescents with suicidal ideation and with adolescents who have attempted suicide. This allowed us to observe the differences in their way to play this game. Therefore, it seemed to us appropriate to consider this game as another tool to help in the psychological assessment of measuring the risk of suicide.

2. Problem

Can serious games be used as a complement in the psychological evaluation of measuring the risk of suicide for teenagers?

We wanted to explore a new direction in the use of serious games: beyond the educational and / or therapeutic use, is it also possible to benefit from this type of media to enrich the variety of our diagnostic assessment tools?

3. Method/Tools

Clashback⁴⁸ is a serious game created by Prof. X. Pommereau. It was developed to recreate a situation of crisis, a "clash" between adolescents and their families. The main character of this game, Chloe, is a 16-year-old girl who is trying to convince her father to allow her to get a tattoo. The player chooses the answers he / she considers best to achieve this goal. Chloe is presented at an introductory video: her parents are separated and she moved recently with her father, her stepmother and her half-brother. She is described as impulsive, suffering from bulimia with vomiting and has just separated from her boyfriend. The relationship with her father is quite confrontational and he has problems at his work.

We used the game as a tool of therapeutic mediation to facilitate dialogue with adolescents facing conflict situations.

⁴⁷ <https://www.sparx.org.nz/>

⁴⁸ <http://www.clash-back.com/>

Population: We used this game with adolescents between 14 and 19 years during their full hospitalization in a psychiatric center for an average term of one month. The psychiatric center is specialized in depression issues and particularly on the issue of suicidal ideation and suicide attempts. We wanted to explore the differences there might be in the way of playing this game for adolescents who attempted suicide and for those who have suicidal ideation without attempting suicide.

Our exploratory sample consisted of 20 patients with a diagnosis of major depressive disorder, 14 to 19 year-old, with a distribution into 2 groups composed of 10 patients: group 1 - persons with suicidal ideation without having committed a suicide attempt, and group 2 - persons with suicidal ideation having committed at least one suicide attempt. Each group of 10 consisted of 5 girls and 5 boys.

The game was proposed to groups of teenagers (between 5 and 7 participants). One member of the group (the first arrived at the center) played in a single session of 45 minutes. The session lasted on average between 20 and 30 minutes. In the game, it takes at least 20 minutes to get the tattoo. After the game session we proposed a group discussion. We have evaluated three aspects in particular, as follows:

High impulsivity, if the game session takes less than 10 minutes; High adaptability, if the player manages to get the tattoo; High sociability if the player asks for advice and take into account their opinion in moments of hesitation in the choice of the answer. The group was led by two psychologists and a training psychologist took notes of the interactions during the play sessions. We used these notes to evaluate the issue of sociability in the interaction between the player and the group.

Our hypothesis based on literature of psychodynamic psychopathology was that young people having attempted suicide have significant difficulty in managing their drive activity, and this has as result a high level of impulsivity. Moreover, difficulties to invest in relations with others can reflect the intensity of the death drive, which can facilitate a transition to a suicidal act. Instead, adolescents overwhelmed by suicidal thoughts without acting out, manage their drive activity in a functional way and invest in relations with others, and this prevents them from a suicidal act.

As Clashback allows simulation of conflict, it is proposed for testing the capabilities of the subject to manage its drive activity but also its level of sociability and adaptability.

4. Results

For group 1: 8/10 obtain the tattoo, 9/10 interact with the group, 7/10 consider the advice of the group and the average of the time of the session is 24,8 minutes.

For group 2: 2/10 obtain the tattoo, 4/10 interact with the group, 2/10 consider the advice of the group and the average of the time of the session is 12,5 minutes.

Results show that the sociability and adaptability are higher for teenagers of group 1, whereas impulsivity seems higher for teenagers of group 2. These results indicate the possibility to use this kind of technological support as a complement in the psychological evaluation of measuring the risk of suicide.

We propose three case studies that show the way of playing of different profiles.

Benjamin, 18 years old, is a teenager who has made several suicide attempts and is currently hospitalized with significant suicidal ideation. The diagnosis is major depressive disorder at the Diagnostic and Statistical Manual of Mental Disorders (DSM 5). When we proposed to him to embody the character of Chloe he immediately decided to invest in the goal of getting the tattoo. Soon Benjamin is verbally aggressed through the father's replies in the game. Thus, he opts for a strategy of extreme politeness and friendliness; however, the father in the game shows to him that his behavior is "weird" and "suspicious". Benjamin changes strategy, but, failing to find the middle ground, he ends up being again verbally abused by the father. Very distressed, he does not manage to rely on the group, even failing to follow the advice of another boy who got the tattoo in the previous session and who is trying to show him the way to follow. He comes very quickly (in 8 minutes) to a clash and does not get the tattoo, a result that causes him a lot of frustration.

Amandine is 16 years old, she was hospitalized for suicidal ideation without suicide attempts and for anorexia and bulimia. The diagnosis is major depressive disorder associated with eating disorders (DSM 5). Already while watching the introductory part of the game, Amandine looks very uncomfortable and reluctant to play. She opts for obtaining the tattoo but soon she adopts a provocative attitude towards the father in the game, who questions the character of Chloe on her eating behavior. The other members of the group provide advice; she seems attentive to their comments but does not take into account their suggestions. Finally, the clash is fast (in 12 minutes) and Amandine does not get the tattoo.

Eric is 16 and is hospitalized with significant suicidal ideation but no records of passage to the suicidal act. The diagnosis is major depressive disorder (DSM 5). He immediately shows not much motivation to participate at this game and even less motivation to be the one playing. He chooses the goal of getting the tattoo but finally chooses answers that are annoying to the father in the game. Approaching the clash, he addresses the group of teenagers to ask for help and considers their suggestions. The session lasts long (28 minutes) and Eric, while continuing to make choices that lead him near the clash, continues to progress and end up getting the tattoo.

These examples show that the use of the game was significantly different for adolescents with suicidal ideation and for those who have attempted suicide. The results show also a difference relative to their psychopathological problems, especially with the eating disorders comorbidity.

5. Conclusion

Our study shows that there are specific characteristics in the way Clashback is being played by teenagers with suicidal tendencies and by teenagers who have

attempted suicide. This validates our assumption that the use of this serious game exceeds its original purpose of therapeutic mediation and becomes a tool that can contribute to the diagnostic evaluation of suicide risk.

Our research nevertheless has limitations and it is merely a first reflection on the issue. Indeed, our sample was limited and the fact that the game was played in a group may have biased the results.

Another bias is the fact that the avatar of Clashback is a teenager with eating disorders: this aspect may have a direct impact on our results for the two teenagers concerned by such problems, who ended up not getting the tattoo, while the rest of their group did. The overly direct identification with this avatar and with its pathology has been difficult for these adolescents. Prof. X. Pommereau plans the development of a second game, where the protagonist will be a boy who uses cannabis; this game will allow to reassessment of the results for adolescents with eating disorders.

It will also be interesting to experiment in the context of such game tools with the use of glasses in order to achieve greater immersion in a higher virtual reality environment. Thus, the identification with the avatar might be stronger and there may result a deeper emotional involvement of the teenager in the game.

References

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