

Virtual Reality as a Complementary Therapy to Sexual Addiction Treatment

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Abstract— Virtual reality has gained traction as a research, education and treatment tool. Virtual reality is a system that immerses people in virtual worlds and improves clinicians' traditional treatments for addictive disorders, eating disorders, phobias, and stroke rehabilitation. Sex addiction is a dysregulation of sexual desire, characterized by excessive sexual behavior (between 5-15 sexual activities/day, for more than 6 months, after the age of 15). Hypersexuality highlights disturbances in human sexual desire, motivation, and behavior systems. Virtual reality worlds were initially designed to treat smokers and alcoholics, and are now programmed for drug users and other kind of addictions. In this article we present different characteristics of sex addiction and possible treatments, including the virtual exposure treatment.

compulsion, all describe an excessive sexual behavior (between 5-15 sexual activities/day, for at least 6 months, after the age of 15). Sex addiction is an interactive process between the person and a common experience that lacks toxicity, and thus drives him/her to repeat it, unable to stop despite the negative consequences.

Addiction is a behavior based on a repeated and irrepressible desire, which cannot be stopped despite the motivation and effort of the subject to evade it¹.

Sexual addiction is a non-paraphilic "excess" of sexual behavior, which can be accompanied by personal distress or/and social and medical morbidity.

Despite the negative consequences and suffering, the person does not give up his addiction.

- *Loss of sexual control*
- *Continuing the behavior despite the negative consequences*
- *Invasive sex thoughts*
- *Compulsive masturbation (5-15 times/day)*
- *Compulsive flirting*
- *Frenetic use of pornographic supports*

1. Introduction

Today we are increasingly confronted with the world of addiction: alcohol, drugs, compulsive shopping, sport, work, and sex. Sexual addiction is a behavioral addiction that becomes the center of the existence of the subject, by depriving him/her from other investments, without bringing him/her any real satisfaction.

2. Characteristics

We use a couple of terms to refer to sex addiction: sex dependency, hypersexuality, dysregulation of sexual desire, and sex

Fig. 1 Sex addiction characteristics

This addiction is a sexual abuse, an excessive and compulsive sex practice². The individual loses the freedom to stop his pathological behavior despite adverse consequences for his actions (e.g. loss or alteration of decision making).

Sexual addiction is characterized by repetitiveness and loss of control. Compulsive masturbation, addiction to pornography, phone-sex / sex on the internet, addiction to drugs used for sexual pleasure, and addiction to sex toys can be the signs of an excessive sexuality.

3. Prevalence

As most suffering from this addiction do not seek therapy, there are few data regarding its epidemiology. Reynaud and Karila³ say that between 3%-6 % of the global population suffer from sex addiction. We know that its

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prevalence is higher in teenagers and young adults, especially when the sex ratio of men to women is 3:1⁴.

Sexual addiction has two complementary sides: pure physiological dependence and the challenge of transgression. This dependence represents the continuous quest for pleasure, forgetting oneself, in the quest for pleasure. The challenge refers to the attempt to give or restore a meaning to his existence.

Reed and Blaine⁵ describe 4 phases of the evolution of the addictive process:

- *Preoccupation*: the person looks for sexual adventure, new partners, flirting
- *Ritualization*: rituals before the sexual encounter (sexual scenarios, visual supports)
- *Sexual compulsivity*: the person is very active sexually and the satisfaction is only temporary
- *Despair*: the feeling of not being able to control his/her behavior

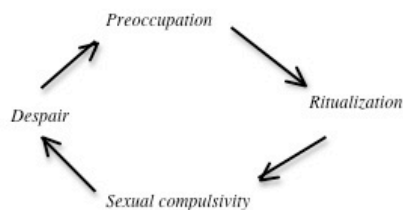


Fig. 2 The cycle of sex addiction

Coleman⁶ thinks that hypersexuality is a behavior used to minimize anxiety and other dysphoric feelings (e.g. shame, depression).

4. Comorbidities

Sexual compulsivity is associated with anxiety, boredom, irritability, and mood swings.

Persons who suffer from this addiction can also present some psychiatric comorbidities: eating disorders, mood swings, anxiety, and attention deficit. Sex addiction is usually accompanied by other addictions, such as drugs, alcohol, and sex toys to improve sexual performances.

5. Therapeutic approaches

Researchers have utilized several treatments for sex addiction, but their efficacy is uncertain. A treatment using SRIS (selective reuptake inhibitors of serotonin) has revealed good results for patients whose sex behavior was related to depression, anxiety, or obsessive-compulsive disorders.

Likewise, cognitive-behavioral therapy, a well-known approach used in treatment of addictions, focuses on identifying the triggers of sexual addiction and on preventing risky behaviors.

Compared to the classic treatments, virtual reality is a new approach to sexual addiction. The technology of virtual reality is expanding in the medical and psychological domain. So far we have seen virtual reality exposure treat eating disorders, pain,⁷ and addiction to a psychoactive substance.⁷

6. Virtual reality

Virtual reality is an immersive interactive computer simulation. Virtual reality (VR) provides the patient with virtual environments (VE) by providing interactive spaces in which the person becomes an actor⁸. Virtual reality allows controlled exposure of the patient's anxiety to often complex, dynamic, interactive, and three-dimensional stimuli. It offers the possibility to graduate, repeating many varied anxiogenic situations⁹. The patient, as well as the therapist may stop the simulation immediately if either does not feel that it is proceeding correctly or if it becomes uncomfortable. The aim of virtual reality is to enable a person to perform a sensory-motor cognitive activity in a digitally-created, imaginary, artificial world, a symbolic simulation of certain aspects of the real world. Virtual reality is an attractive option due to its ease of scheduling, and increased the chances of therapeutic success.

Studies on people with sexual dysfunctions have shown that psychotherapy and virtual reality, improved the condition of patients and that these patients maintained that improved condition for more than 6 months (sometimes to the point that they no longer exhibited signs of sexual dysfunction).¹⁰ An experimental protocol from the University of Liège even

reveals that psychotherapy and virtual reality could lead to improvement in healing sexual addictions.

It is nevertheless worth noting that studies of patients with sexual dysfunction have shown that there is a risk of dizziness during their first session of virtual reality therapy.¹⁰

7. Virtual reality exposure therapy

Researchers and clinicians can now use virtual reality exposure for educational, research, and therapeutic purposes. The virtual reality technology is similar to a video game and it simulates a real-world experience.¹¹

People who suffer from addiction (product addiction or behavioral addiction) react to stimuli associated to their addiction (e.g. a drug addict will react to needles/cigarettes). This methodology is called 'cue reactivity', often used to expose users to their addiction product/stimuli in order to measure their craving level, physiology, and mood states at the moment of exposure. Craving is an intense desire to consume a product or to exhibit a certain behavior.

Presenting the patient different with addiction products allows the therapist to note which items serve as triggers (stimuli that tempt the person to recommence his or her addictive behavior).

Exposure methods' advantage arises from the fact that the treatment is that the treatment can be customized for each patient, which means that the therapist can control the situation, can increase/decrease the patient's cravings.

Since 2000, several researchers have successfully used virtual reality applications for different addiction treatments. Most of them started testing the use of virtual reality for addiction therapy related to abuse of cigarettes¹², alcohol¹³, marijuana¹⁴, cocaine¹⁵, methamphetamine¹⁶, heroin¹⁷, flying fear¹⁸, phobia¹⁹, post-traumatic stress disorder²⁰, and stroke rehabilitation²¹.

Virtual reality can contribute to improving the assessment, treatment, research, and education concerning addictive disorders, including sexual addiction.

8. Acknowledgment

Sex dependence is frequently associated with other addictions. Sexual addiction crosses the fine line between fulfilling pleasure and empty displeasure; it evolves, this addiction's

empty displeasure leads to suffering and complications on personal, professional, social and familial levels.

As the virtual reality exposure treatment is new, it is too soon to draw definitive conclusions concerning its possible success in treating sexual addiction. We can nevertheless conclude that we may consider this therapy as an additional treatment that could prove a useful complement to the traditional therapies that treat sexual and other addictions²².

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