Ethical Viewpoint Paper

Ethical Aspects of Using Virtual Reality in Online Psychotherapy

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Virtual reality (VR) has undergone a transition in the past few years that has taken it out of the realm of expensive tool and into that of functional technology. A uniquely suited match exists between the assets available with VR technology and applications in the psychological sciences [1]. Virtual environments (VEs) have been developed that are now demonstrating effectiveness in a number of areas in clinical psychology especially psychotherapy. Also, the clinical and research targets chosen for these applications reflect an informed appreciation for the assets that are available with VR technology by clinicians/developers initially designing and using systems in this area. However, as with any application of a new technology, many unanswered questions exist that will require advance thoughtful consideration of the ethical issues relevant for its use [2].

Virtual Reality: Definitions and Relevance

Virtual Reality can be generally defined as "A way for humans to visualize, manipulate, and interact with computers and extremely complex data [3]." In essence, VR can be viewed as an advanced form of human-computer interface that allows the user to "interact" with, and become "immersed" within a computer generated VE. This is achieved via the integration of real-time computer graphics and a variety of sensory input devices. The believability of the virtual experience or sense of "presence" is supported by employing such specialized technology as head-mounted displays (HMDs), tracking systems, earphones, etc. The most commonly used, is a combination of a HMD and tracking system which allows delivery of computer-generated images and sounds in any virtual scene, that corresponds to what the individual would see and hear, if the scene were real. VR is currently widely used are for psychological purposes [4].

What makes VR application development in the psychological sciences so distinctively important and appealing is that it represents more than a simple linear extension of existing computer technology for human use. VR offers the potential to deliver systematic human testing, training and treatment environments, that allow for the precise control of complex dynamic 3D stimulus presentations, within which recording is possible. However, with this emerging increase in access, the potential for uninformed and serious misapplication of the technology with particularly vulnerable clinical populations is possible. As the technology evolves, potent VE tools will become more readily available to professionals for research and clinical purposes, some of whom may not have the qualifications or expertise to deliver professional services in the area that the tool was designed to address. In addition, a growing number of VR scenarios will eventually become accessible to the general public via recorded media forms (e.g., DVD) and the Internet [5].

The potential impact that this increased access will have on how research and clinical practice is conducted in psychology and the issues involved with general use by the population at large will need to be anticipated and analysed from an ethical perspective.

ETHICAL CONSIDERATIONS

VR and area of expertise

Virtual reality should be approached as a tool to be used by clinicians experienced with the types of patient problems and treatment they are treating. It is not meant to be a convenient way of attracting new patients or of administering a new type of therapy that they are not qualified to provide. For an example, there is mounting evidence of the efficacy of VR exposure therapy. The therapists should only attempt to use VR for exposure therapy if they are qualified to provide exposure therapy. Likewise, clinicians should only use the VR applications in their area of training. As the use of therapeutic VR expands, it will be incumbent upon clinical training programs to train future professionals in its competent and ethical use [6].

VR versus real time therapist to client relationship

The therapeutic relationship between a patient and therapist is a vital variable in psychotherapy. As in any social interaction, nonverbal communication is of paramount importance in the therapist - patient relationship. Much of this nonverbal communication comes from facial expression, body posture, hand gestures, and intonations. If patients are wearing head mounted displays, they cannot see the therapist and therefore lose all of the nonverbal communication absorbed visually. If it is a loud virtual environment the therapist may be talking to the patient through a microphone connected to the earphones. Although they can still carry on a conversation, some of the natural inflections are lost and the therapist is speaking over the background noise of the virtual environment [7]. The use of such technology definitely impacts on the therapeutic relationship. It may allow avoidant patients to "hide" behind the technology. The use of such technology may also allow therapists who might be less than comfortable with interpersonal issues to hide behind the technology or to become comfortable with a routine use of VR instead of assessing the needs of the patient on an on-going basis. This is not to say that the use of VR must by definition lead to the loss of the normal therapist patient relationship. Therapists should be cautioned not to hide behind the technology or let the technology dominate the session. Again, VR should be approached as a tool to be used to enhance therapy rather than the therapy itself [8].

VR as a substitute for good clinical skills

The therapists should use VR to enhance therapy rather than substitute for it. It is advised that the therapists must be thoroughly trained in the assessment or therapy they are delivering and use VR for the advantages it affords such as control over stimuli for assessment or treatment, ease of exposure, or cost-effectiveness. It would not be ethical to obtain the VR technology and use it as a substitute for clinical competence [9].

VR leading to faulty self-diagnosis and self-treatment

Although the current therapeutic uses of VR still require a clinician to be present, future uses will probably not have this requirement. Individuals will be able to download or purchase locally VR assessment and therapeutic tools. This shall contribute to faulty self-diagnosis and inadequate self-treatment. Probably to a small degree, but also likely not more than currently exists in the self-help [10].

Virtual Human Representations

Individuals interact with Virtual Human Representations (Avatars) with exclusion of interactions in the "real" world and relationships with "real" people? As the technology evolves, realistic and compelling VEs will be created and many of these scenarios will be inhabited with very convincing and believable virtual human representations or "Avatars". This aims to maximize naturalistic "engagement" between humans and computational devices by and promote interaction with technology in a social manner [11]. Such engagement requires the computer to carefully observe the user, anticipating user actions, needs, and desires. Such engagement enables users to begin to build personal relationships with computers. By integrating such emotional computing concepts with avatar delivery formats (e.g. users giving voice commands to a virtual avatar instead of using

a keyboard or mouse), we will see much more opportunity for human interaction and "bonding" with avatars via the online psychotherapy. It will also be possible for users to "select" both appearance and "personality" features for these avatars to suit specific user-determined needs, tastes and preferences. However, the "creation" of avatars at this level could also be "challenging" to humans' general self-perceptions on a number of existential and ethical levels. One of the key concerns in the future may involve the clinical and social ramifications due to chronic use or "addiction" to "fantasy" VEs and the avatars that inhabit them, at the expense of involvement in the real world and relationships with real persons. While limitations in the state of current VR technology make it doubtful that these issues will be of immediate concern, as the technology evolves and VEs begin to exceed the experiences that are available in a person's real world, there will undoubtedly be individuals who will develop preferences for the synthetic virtual world. Out of this concern, it becomes possible to quickly view these activities as a threat to psychological well-being. These issues are particularly challenging to address due to the rapid onset of the information technology revolution [12].

CONCLUSIONS

In summary, although many of the anticipated limitations of the application of technology in online psychotherapy appears to have been overcome, it is important to remain cautious. VR offers many potential benefits and can be integrated into established psychological and psychiatric theory and practice. However, the ethical aspects for the standard practice of use of VR in online psychotherapy must be kept in mind.

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