

Using Cognitive Therapy to Explore the Potential Application of Traditional Therapy and Metaverse Therapy from a Cognitive Perspective

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Abstract: Depression, as a common mental disorder, results in a large number of individuals developing depression from depressive tendencies every year. However, due to the significant gap in mental health service access and geographical limitations, individuals experiencing symptoms of depression are unable to receive timely treatment. With the development of metaverse technology, it is now possible to use metaverse technology for widespread depression treatment. This article proposes some potential ideas for treating depressive tendencies and depression using a combination of traditional cognitive therapy methods and metaverse approaches. This aims to provide ideas for the future development of metaverse diagnostic and therapeutic technologies and to promote the reduction of the number of individuals who develop depression from depressive tendencies.

1. Introduction

Nowadays, depression is a common psychological disorder. With the continuous development of metaverse technology, new treatment modalities are designed through the combination of common cognitive therapies and gamification [1].

Meta-universe technology provides a more realistic virtual environment, making medical applications more realistic and convenient. Firstly, metaverse technology can support telemedicine and medical consultations, through which doctors can monitor patients' vital signs and provide medical guidance remotely. In terms of medical consultation, metaverse technology can provide a more private virtual space for patients to have psychological counseling and treatment with doctors, which is especially important for patients who are afraid of face-to-face interaction. There are huge gaps in mental health services care. For example, 71% of people with mental illness worldwide do not have access to mental health services, and social isolation and stigma, as well as the limitations of offline consultations, are not sufficient to meet the needs of the majority of patients [3]. Therefore, if interventions to reduce the depressive state can be done by means of metaverse, it is possible to reduce the number of patients suffering from depression [4].

2. Depression and concepts of depression treatment

2.1 Theories of depression treatment from a cognitive perspective

Depression refers to a feeling experience and emotional state of low mood in which there is extreme depression with decreased or lost pleasure, even for those activities which they had been interested in. The main theories of depression treatment from a cognitive perspective are:

(1) Beck's cognitive theory of depression. It was proposed in the 1960s, which suggests that individuals' childhood misfortunes and setbacks are responsible for the formation of dysfunctional attitudes that influence the encoding, comprehension, and retrieval of cognitive information. Thereafter, when individuals experience negative life events, they develop cognitive distortions and negative ways of interpreting external information, and use negative automatic thinking (negative self, negative world, negative future), leading to depression and increasing negative perceptions, forming a vicious cycle that spirals. To utilize Beck's theory to alleviate depression, several aspects should be considered. Firstly, identifying one's own cognitive biases, such as overgeneralization and mandatory thinking, during the thinking process. Secondly, correcting cognitive biases, such as transforming mandatory thinking into thinking positively, or evaluating one's own thinking through evidence examination. This cognitive correction process can gradually decrease

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negative thoughts and enhance self-affirmation and positive emotions. Finally, rebuilding self-worth and cognition by correcting cognitive biases can assist individuals in reconstructing their self-awareness. Consequently, this process can help individuals build more positive and healthy attitudes and feelings. [5].

(2) Abramson's hopelessness theory. Hopelessness theory believes that hopelessness is the most direct cause of depression, while negative life events and negative inferences are indirect causes. Once a negative life event occurs, individuals with negative inferences (cognitive susceptibility) will interpret and attribute negative life events negatively, which will bring hopelessness and eventually lead to depression and even suicidal ideas and behaviors. In traditional therapy, therapists use family environmental therapy as part of cognitive behavioral therapy to help patients change negative thoughts and behavioral patterns. The aim of this method is to promote mutual understanding and support within the family, alleviate the patient's negative emotions, and enhance their self-esteem by strengthening their social skills and support system. This approach can improve a patient's ability to resist depression by enhancing their support system and social skills, while simultaneously addressing negative thought patterns and behaviors. On the other hand, focuses on nurturing oneself physically, emotionally, and spiritually. This includes taking care of one's body by getting enough sleep, exercise, and proper nutrition, as well as engaging in activities that promote relaxation, such as meditation and deep breathing exercises. Self-care also involves taking time to engage in activities that bring joy and fulfillment. [6].

(3) Response style theory. The response style theory was proposed by Nolen-Hoeksema S, which refers to the cognitive strategies that individuals use to cope with negative emotions, and the three response styles are contemplation, distraction, and problem solving. Among the three response styles, contemplation is a negative response style that can aggravate depressive symptoms, while distraction and problem solving are positive response styles that can play a role in relieving depression. Regarding the treatment of depression, the theory of response styles can be utilized as part of the therapeutic approach. Therapists can encourage patients to adopt more positive coping styles such as cognitive restructuring and problem-solving skills. This can help patients better deal with negative events in their lives, gradually reducing their depressive symptoms. Meanwhile, therapists can also teach patients techniques to maintain emotional stability such as exercise, deep breathing, and meditation to reduce emotional fluctuations. In addition to these techniques, therapists can also help alleviate depressive symptoms by strengthening patients' skills in self-forgiveness and self-care. By enhancing patients' understanding and acceptance of their negative emotions, patients can become better equipped to handle their self-blame and self-criticism. Overall, these therapeutic strategies can assist individuals with depression to become more resilient and self-compassionate, promoting their long-term mental health and well-being.[7].

2.2 Traditional ways of depression treatment from a cognitive perspective

The depression treatment from a cognitive perspective is mainly non-pharmacological, including psychodynamic therapy and cognitive-behavioral therapy. [8]. Psychodynamic therapy addresses the inner conflicts of depressed patients, helping them to identify their problems and question them, teaching them to overcome their inner fears, to protect themselves in a better way, and to go out in a more open manner. Cognitive therapy is a process of "self-awakening" that allows depressed patients to explore and re-understand things on their own, to build a system of self-knowledge, self-exploration and self-acceptance through psychotherapy. [9] Once the depressed person comes out of the process, he or she is not only physically and mentally healed, but also reborn. Positive perception can add a lot of positive momentum to life [10].

2.3 Problems of traditional depression treatment from a cognitive perspective

Although traditional cognitive-behavioral therapy is the mainstream therapy for depression, there are still some problems and limitations: (1) Therapist's find it hard to response to the client's problem flexibly, which ignores the uniqueness of the client. Traditional cognitive therapy can alleviate the symptoms, but there is no way to solve the problem completely, and it is difficult to make the patient maintain positive attitude and healthy motivation in daily life. It is difficult to sustain positive attitudes and healthy behavior patterns in daily life. (2) The richness of human life may be ignored to some extent. The nature of meta-universe is dominated by AI and machine learning, and it is easier to find out the content with high frequency while ignore individual differences. (3) The treatment of cognition emphasizes that the way of thinking affects emotional experience and ignores the importance of emotional experience; (4) Cognitive therapy emphasizes consciousness while ignores the unconscious; (5) Cognitive therapy, as a scientific method based on individualism, is personally focused and overemphasizes rationality and objectivity. Thus, it is bound to be criticized by postmodernists; (6) Cognitive therapy, as a scientific method based on individualism, is personally focused and overemphasizes rationality and objectivity. Thus, it is bound to be criticized by postmodernists. The interaction between cognition, behavior and environment is complex and fundamentally too difficult to discern, but the theoretical framework of cognitive behavior is based on the understanding of the interaction of the three. This may be an oversimplified understanding since the barrier of technology is still a very big problem.

3. New opportunities, metaverse-depression treatment

3.1 Meta-universe

With the continuous development of Virtual Reality (VR)

technology, Meta Universe has become one of the hot topics. Meta Universe usually refers to the virtual world interwoven by technologies such as web, virtual reality and internet. In the Meta Universe, users are able to interact with other players, explore virtual spaces and perform other virtual world activities. Virtual Reality (VR) technology is a technology that allows users to have a new experience. Since the user's senses are replaced by the virtual environment, they are allowed to experience complete immersion in the virtual environment. The virtual reality system provides people with a computer-generated visual which is audible and sensory virtual environment that provides an immersive and realistic experience emphasizing interactivity.

3.2 Meta-universe therapy principle

Dr. Daria Kuss, head of the Cyberpsychology Research Group at Nottingham Trent University in the UK, believes that metaverse allows depressed people to "gradually access triggering, frightening or traumatic stimuli in a safe space" and can promote digital territories as a treatment for phobias, PTSD, psychosis and depression. Thus, the metaverse can help people overcome the fear of connecting with the outside world and feel things that are otherwise out of their reach. It can also compensate for the limitations of real-life cognitive-behavioral therapy, which is expected to have excellent results in treating depression and other disorders. In the metaverse, people experience a sense of reality and immersion that is similar to the real world, thus creating great challenges and opportunities for people's cognition. For example, in the metaverse, people need to perform a lot of cognitive activities in observation, thinking, reasoning, and memory, which can strengthen their cognitive ability and creativity and promote their cognitive development. And different intervention plans can be customized according to the individual differences of people with depression, creating variable spaces and thus creating a ever changing metaverse world [11].

3.3 The Conceptual Framework of Metaverse Depression Therapy from a Cognitive Viewpoint

The main elements of landscape space based on virtual reality technology are dynamic change of spatial environment, free extension of spatial scale, and interactive association of spatial interface. From the cognitive perspective, the concept of metaverse is being increasingly applied in mental health care as an emerging psychotherapeutic approach [12].

In metaverse therapy, non-pharmacological therapies from the real world can be gradually applied to the metaverse by using virtual reality technology. As a new way of psychotherapy, metaverse therapy breaks through the traditional constraints of psychotherapy and gives patients more space, time and energy to understand their problems, thus producing better treatment outcomes. And it can alleviate the imbalance of medical to nursing ratio, social stigma, and limitations of offline treatment in heart treatment, and provide more diversified treatment contents.

This study initially constructs the following metaverse depression treatment methods with the aim of providing theoretical reference for future application of metaverse to treatment. [13]

(1) The technology of metaverse can be used across regions, allowing patients to have therapy and group activities and games with their friends and family in other places. In particular, teamwork games can be used to encourage and support patients and help their families and friends understand them. Patients who do not have family or friends can also complete activities with therapists or virtual tasks. Through teamwork, the positive interaction of members is based on beck theory, which will bring the reactivation of dysfunctional attitudes, avoidance of cognitive distortions, interpretation of external information in a positive way and reshaping of cognition [14].

(2) For depression caused by school bullying or long-term inability to change the family of origin, we can use the classic ice-breaking game with the support of metaverse technology, and use machine learning to deduce the language and behavior of the aggressor through the patient's reaction in the virtual world, and re-establish understanding and relationship with the patient and change the outcome and direction of things in the metaverse to alleviate the negative feeling of hopelessness [15].

(3) Traditional ocean therapy is used to relieve the stress and tension caused by relationships, and the vast majority of depressed people have more or less interpersonal and social problems. Combined with response style theory, we can provide depression relief through distraction. The barriers of reality can be broken through among the scenes of the metaverse. Patients can take on the perspective and form of a fish or other creatures under the sea to experience a different life to distract themselves [16].

4. Conclusions

In general, this article focuses on the potential application of metaverse therapy for depression from a cognitive perspective. It also introduces some traditional depression treatments and some problems of it. The application of metaverse may bring new changes. With the advancement of metaverse technology, more new ways of treating mental illness besides virtual exposure therapy may emerge. Admittedly, the development of metaverse technology takes time, probably decades or more, but I believe that it will successfully solve those existing treatment problems in the future.

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