

A Polish startup treats depression using virtual reality



Photo press materials

Kuba Dobroszek (compiled)



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The innovative medical device of the Polish start-up VR TierOne uses virtual reality to support the treatment of depression and rehabilitation of people after stroke, as well as oncological and cardiological treatment. Now it also effectively supports the treatment of convalescents who have undergone the coronavirus.

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The World Health Organization has announced that depression will become the second most serious disease in the world in 2021. Also, every third person with a severe course of COVID-19 complains of mental and neurological disorders. There are as many as 98 long-term symptoms of COVID-19 in scientific reports, including chronic fatigue, difficulty concentrating, headaches, sleep problems, anxiety, depression, memory disorders. Virtual reality is one of the newest methods supporting the therapy of people struggling with this type of problems.

Virtual Reality Therapy - How Does It Work?

The VR and AR industry, i.e. virtual reality and augmented reality, are currently on the rise. The development of this technology changes many market segments, including the medical one. In Poland, at the end of 2020, in the center of the Ministry of Interior and Administration in Głuchołazy, a pilot therapy program for postovoid convalescents took place using the proprietary **VR TierOne** program . As it brought about visible positive effects, it can be implemented in other institutions.

- Symptoms in patients undergoing postovoid rehabilitation go beyond those relating only to respiratory system disorders, i.e. those related to dyspnea and ventilation disorders. Very often these symptoms relate to anxiety and depression symptoms, therefore the rehabilitation program includes, apart from psychological care, relaxation training using VR and **VR TierOne** therapy . The needs related to this therapy are huge and go beyond the hospital rehabilitation program - emphasizes prof. Jan Angielniak, head of the Therapeutic Rehabilitation Department at SP ZOZ, Specialist Hospital of the Ministry of Interior and Administration in Głuchołazy.

"Welcome to the virtual world" - the therapist's voice addresses the patient, who looks as if he is having a good time when viewed from the side. In fact, it is in the process of therapeutic and rehabilitation work. The patient goes to the "garden of rebirth", where he listens to the

therapist telling a story and performs the tasks he recommends, such as painting a mandala. The use of virtual reality uses the phenomenon of total immersion - in order to isolate the patient from hospital conditions, it evokes previous good associations and fully engages in the therapeutic process.

The therapy according to the **VR TierOne** program consists of three components: a set of medical procedures that support the treatment and rehabilitation process, a medical device using virtual reality and a two-week therapeutic cycle.

The therapy engages all the senses, makes it easier to break away from stressful conditions and guarantees full concentration on the therapy. VR glasses cut the patient off from the world around him, and he is completely focused on the therapeutic tasks that initiate the healing process. - The innovation of **VR TierOne** is based on deliberate therapy in two spheres: motor and mental. My experience shows that such a method, added to conventional rehabilitation, is extremely useful and attractive for the patient, says Dr. Jarosław Szczygieł, specialist in neurology and medical rehabilitation.

Virtual reality combined with science

The results of research carried out by the company indicate that their solution reduces the level of depression by 37%. (according to the GDS scale), the level of anxiety by 36% (according to the HADS scale) and the level of stress by 27% (according to the PSQ scale).

How exactly do you see the effects? The creators indicate several specific areas:

- Improving the mood and motivation for rehabilitation
- Psychophysical relaxation
- Increasing the patient's faith in the success of the physiotherapy process
- Improving concentration and attention
- Improving the visual-spatial functions
- Reducing pain sensations
- Stimulating the mechanisms of brain plasticity
- Reducing the sense of burden among the staff of rehabilitation departments

Positive experiences in the virtual world and successes in the therapeutic history restore the patient's faith in their own abilities and the success of the treatment process. The patient feels better and builds internal motivation for rehabilitation. In addition, **VR TierOne** uses virtual reality also to activate the movement of the upper limbs and the shoulder girdle.

Behind the device is a group of experienced scientists and technology experts, including Dr. Joanna Szczepańska-Gieracha, prof. extra. certified psychotherapist of the European Association of Psychotherapy and teacher of psychotherapy at the Polish Ericksonian Institute with over 20 years of experience in helping patients with various diseases and Dr. Jarosław Szczygieł, specialist in neurology and medical rehabilitation, who heads the 1st Department of Neurological Rehabilitation SP ZOZ "REPTY" Górnośląski on a daily basis Rehabilitation Center in Tarnowskie Góry.

The devices and **VR TierOne** therapy program can be used by doctors, psychologists, physiotherapists and patients of rehabilitation departments and nursing homes. This technology has already been used by such facilities as the Cardiology Center in Wrocław, the Specialist Hospital of the Ministry of Interior and Administration in Głuchołazy, the Siwy Dym Foundation for Activating Seniors and the Analgomed Pain Treatment Center in Wrocław.

The company noticed a great potential in the development of its idea and a gap in the system to be developed. - Polish medical facilities can often boast of top equipment for the treatment and rehabilitation of patients, but not in the area of caring for the mental health of the patient. We fill this niche by providing technology and a therapy program to support the recovery of stroke and other severe disease patients, including COVID-19. They are all very often associated with depression, explains Paweł Pasternak, director of **VR TierOne** .

The company is at the stage of attracting investors for further development, including foreign expansion - their therapeutic program is available in several languages.