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REVIEW OF INNOVATIVE VIRTUAL REALITY SOLUTIONS SUPPORTING THE REHABILITATION OF COVID-19 PATIENTS

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The use of Virtual Reality (VR) in medicine makes it possible to provide the human senses with interactive objects. The resulting virtual image becomes an avatar of the patient, whose anatomy or movements are realistically recreated. The accuracy of reality mapping depends on the system and used technology. The COVID-19 pandemic has forced the medical community to adopt new technologies, including Virtual Reality in healthcare. VR can be used, among others as a method of supporting rehabilitation at home in patients with COVID- 19, who are additionally struggling with disability, neurological problems, social isolation, stress or depression.

The main aim of the work was to discuss innovative methods and technologies used in Virtual Reality for generally understood rehabilitation, as well as to collect and systematize information on the possibilities of effective rehabilitation and support in overcoming phobias (related to social isolation) in patients during or after COVID-19. For this purpose, a systematic literature review was carried out. In the PubMed database, after applying the query: rehabilitation AND "Virtual Reality" AND "COVID 19", a total of 52 publications were obtained. The number of searched results was reduced by increasing the sensitivity and specificity of the search. The criteria responsible for increasing sensitivity and specificity were: searching for multi-word phrases in quotation marks, searching for systematic reviews in order to obtain publications with high reliability and narrowing the collection of publications to the last 3 years (2019 – 2022). After applying the search strategy, two publications were obtained, which were used to confirm the credibility of the thesis that Virtual Reality positively influences the rehabilitation process in patients with COVID-19.

As a result of the conducted research, it was found that VR has great potential in supporting health care activities, especially during the fight against the effects of the COVID-19 pandemic. The virtual environment stimulates various senses, which translates into the effectiveness of rehabilitation. However, it should be remembered that VR can have side effects such as disorientation, so before starting rehabilitation, it is necessary to suitable prepare the patient to enter the virtual world. Despite the disadvantages, the benefits of using this technology outweigh the risks and it is worth developing it further and applying it to various fields of medicine.