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MODERN TECHNOLOGIES AND THE FUTURE OF MENTAL HEALTH TREATMENT

«Technology has opened a new frontier in mental health support and data collection. Mobile devices like cell phones, smartphones, and tablets are giving the public, doctors, and researchers new ways to access help, monitor progress, and increase understanding of mental wellbeing» [1].

Mobile mental health support becomes simple and efficacious. Any person who has such devices can send a message and contact an emergency service or a crisis center. A lot of appliances use built-in sensors to collect information on a person's behavior.

When the device detects a change in someone's behavior, it makes a signal that the person needs help. Some appliances promise to improve memory or thinking skills, others help the person call the doctor.

There are thousands of mental health appliances, and their number is constantly growing. Experts think that technology will have success in the future both for clients and doctors. Mobile care includes such advantages as convenience, anonymity, lower cost, 24-hour service to more people, interest, consistency, support, and objective data collection.

The American Psychiatric Association (APA) states that there are more than 10,000 mental health appliances on the market. Treatment can take place at home, in the transport, and at night. People can look for treatment themselves without someone's help.

It might happen that a person avoided mental health care, but due to the development of technology he/she can use some appliances free of charge or the cost is less than traditional care. Technology can help treat people in remote districts and in emergency situations.

Some technologies are more attractive than traditional treatment methods and may motivate people to continue therapy. Technology can supply day and night monitoring, support and offer the same treatment program to all users.

Technology can improve traditional therapy and strengthen new skills. It can collect information of location, movement, and phone use. The development of mental health technology gives a lot of opportunities but brings up concerns.

Software developers are concentrating on effectiveness, privacy, guidance, regulation, and selling.

The largest concern is obtaining proof that they work as well as traditional methods. Another concern is understanding if appliances work for all people and for all mental health conditions. Appliances deal with personal information so their makers should guarantee privacy for users.

There are no industry-wide standards to help consumers know if an appliance is proved efficacious.

The problem of regulating mental health technology and the data it generates should be solved. If an appliance or program promises more than it delivers, consumers may seek other, more efficacious therapies that is why researchers and engineers are combining their skills. Appliance development includes self-management appliance (the user puts information into the appliance so that the appliance can provide feedback).

The user sets up medication reminders or uses the appliances to develop tools for managing stress, anxiety, or sleep problems. Some software uses equipment to check heart rate, breath, blood pressure, and may help the user track progress and receive feedback. Appliances for improving thinking skills help the user with cognitive remediation.

These appliances are for people with serious mental illnesses and skill-training appliances help them learn new coping or thinking skills.

Illness management, supported care appliance technology allow the user to interact with another person and help him/her get support or send information to a professional health care provider who can offer guidance and therapy.

Researchers are working to learn how much human interaction people need for appliance-based treatments to be effective. Passive symptom tracking can collect data using the sensors built into smartphones. These sensors can record movements, the number of phone calls, behavior at different times of the day, vocal tone and

speed. These appliances can analyze these data to determine the user's real-time state of mind.

Such appliances can recognize changes in behavior with signals of mania, depression, or psychosis before it occurs. An appliance cannot replace a mental health specialist, they show when a client needs care. The aim is to create appliances that support a range of users, including those with serious mental illnesses.

Data collection appliances can gather data without any help. Receiving information from many individuals at the same time can increase researchers' understanding of mental health and help them develop better interventions.

Research via smartphone is a reality nowadays. The researchers used technology to screen, treat, and check out users. They found that interventions are most effective when people like them and want to continue using them. Behavioral health appliances should combine the engineers' skills for making an appliance easy to use and providing effective treatment.

Researchers and software engineers are developing and testing appliances that do almost everything. Intervention appliances may help a person give up smoking, manage symptoms, or overcome anxiety, depression, post-traumatic stress disorder, or insomnia.

«A primary area of interest in contemporary mental health appliance development is the ability to detect psychological disorders or pathological behaviors using complex data analytic techniques such as machine learning and artificial intelligence» [2].

According to the European Connected Health Alliance there are more than 380,000 health appliances available through Apple and Android operating systems, and 20,000 of them address mental health but there are no national standards for evaluating the effectiveness of the hundreds of mental health appliances.

References

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