AI AND MENTAL HEALTH

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Awareness about mental health has grown significantly in recent years, and rightly so. It is estimated that approximately 15.5% of the global population is in some way or another affected by mental illness. The increased awareness about mental health issues has led to an increased effort into tools and mechanisms to help patients with such health issues. Naturally, Artificial Intelligence (AI) research has also ventured into the area.

The application of AI in the area of patient care concerning mental health has taken various forms ranging from approaches suitable for preventing mental illnesses, to the actual care of patients already diagnosed. One of the main objectives of AI has always been to find ways of predicting future events. On these lines, several researchers have investigated various techniques to diagnose patients at risk of mental illnesses earlier and be able to start treatment immediately. Researchers are now applying the same approach to help detect early signs of mental illness.

They have adopted AI in this scenario through various means. For example, researchers from the World Well-Being Project (WWBP) are using AI to detect linguistic cues from social media that might be indicative of depression.[1] Individuals suffering from depression tend to express themselves using specific keywords such as "feelings", "I" and "me". More important, however, according to the findings of the research carried out, these traits were constant across a vast population and not just one-offs. After analyzing half a million Facebook posts, the researchers report that their algorithm was able to identify depression-associated language markers. They could predict depression up to three months before the person receives a formal diagnosis. Other researchers attempt to perform early detection of depression using other cues, such as facial expressions and the pronunciation of words. Such approaches are not limited to just identifying and diagnosing depression but also other risks like suicide.

One of the most popular approaches is the use of chatbots that can have a conversation with an individual like a human would. Questions like "How are you doing today?" or "How do you feel?" may seem like simple questions that a caring friend might ask, but through AI, nowadays we can have machines that do the same thing. The beauty of this technology is that it can be packed neatly on personal devices that can be accessed anytime.

Let us give an example. Dr Alison Darcy created Woebot,[2] a Facebook-integrated software that replicates conversations that a patient might have with his or her therapist. Such chatbots do not replace the human connection, but they offer the patient the impression that there is someone ready to listen to him day and night. While acknowledging that people prefer not to talk to machines and that this might lead to some resistance, the future of chatbots does indeed look very promising.

Finally, we want to introduce you to a new concept that is fast gathering popularity in the field of AI, especially regarding the area of care. The technologies we have available are making it possible for us to develop intelligent tools with which to provide better training for healthcare professionals. One such example is the use of virtual reality to help healthcare professionals better understand patients on the Autism Spectrum, amongst others.

Research carried out at the Department of AI within the University of Malta resulted in an application that gave parents and caregivers the chance to experience the world through the eyes of autistic children, using virtual reality. Through it, they could relive a day in their lives and gain precious insights on the challenges which these children face. The results of this study were rather astonishing. After using the experience, people felt more empathetic, and in general, they reported that they could better understand these children.

The same concept can also be applied to other cases. The researchers at the Department of AI are currently creating a new experience of patients suffering from other mental illnesses such as schizophrenia.

In synthesis, AI has the potential to provide the critical resources required to help provide better care to patients. As AI tools progress, we are required to ensure that measures are put in place to make them safe and effective, especially for the most vulnerable patients. What is clear is that the implementation of AI in this setting can be a gamechanger which helps both patients and caregivers achieve their mutual goals.

REFERENCES

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