Use of Artificial Intelligence in Psychological Treatments

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<u>Summary</u>

Living in the 21st century, most of the things we do today are through machines. Since Artificial Intelligent machines or websites and apps have become a part of our daily routine (example google), one might question its use in certain fields which require a human's interaction and trust between the client and the doctor. This report focuses on the use of Artificial Intelligence in Psychological treatments.

Artificial Intelligence is a progressing field being used in psychology already in Clinical Psychological Treatment methods such as multiple websites for self-help and computer-based therapy and consultation. Other uses Virtual Reality Therapy. Such treatments like Internet-delivered Cognitive-Behavioural Therapy (ICBT) come under Exposure Therapy. Exposure therapy was mainly developed to use to help cure anxiety disorders, phobias, or Post-Traumatic Stress Disorder (PTSD). Virtual Reality Therapy is used to help create a digital version of the closest form of reality for the client or patient to experience to overcome their fear. These are often used for patients suffering from any phobia such as fear of heights or for the treatment of disorders.

The use of Artificial Intelligence in psychological treatments is still a debatable topic but since the start of its use, it has been steadily helping the psychological field provide patients with the best care and facilities to help treat them showing that it will be used excessively in the future as well.

CONTENTS

Introduction

The human mind has always been a puzzle to psychologists. Trying to decipher how the human intelligence works has always been something the world is trying to achieve. In today's world most of the things we do are through machines whether it is washing clothes, or studying. Living a completely computerized world, computer scientists and psychologists have taken on a new approach by trying to give human intelligence to machines naming it Artificial Intelligence (AI). This concept is a highly debatable topic. Some philosophers think that by giving intelligence to machines it can be made capable of doing everything which a human can while others disagree (Negnevitsky, M., 2005).

AI has been used in fields like games, robots, law, remote sensing devices, stock trading and many scientific inventions and diagnostic procedures (Tahan, M., 2018). It is being incorporated into digital smartphones and apps (D'Alfonso, S., 2020). One specific reason why some philosophers think that use of Artificial Intelligence is limited is because of lack of emotions. For example, the use of AI is limited in the study of psychology. Yet today Artificial intelligence is being used for multiple purposes in Clinical Psychological treatments. This report will focus on some of the uses of AI in Clinical Psychological treatments. It will mainly draw attention towards the use of Virtual Reality Therapy in Exposure Therapy.

Clinical Psychological Treatments (AI based)

Clinical Psychology is a field which seeks to increase the understanding of human intelligence. It is both professional field as well as scientific field (Reisman, J.M., 1991). The term Clinical Psychology came into effect in the late 19th century when a psychologist, Lightner Witmer, founded a psychological clinic at the University of Pennsylvania (Reisman, J.M., 1991). There are multiple implications of AI in Clinical psychology today such as Virtual reality therapy (VR), biofeedback via ambulatory physiological monitoring, dedicated websites for self-help, web-based applications for identifying and evaluating via the Internet, computer-administered therapy, consultation via the Internet, interactive voice messaging systems and virtual support group sites (Tahan, M., 2018).

AI robots and virtual agents have not only been used for low-level mental health support but also for high-level therapeutic interventions which are usually done by psychotherapists (Fiske, A., Henningson, P. and Buyx, a., 2019). Some of these high-level tasks include special robots for dementia care, sexual and autism disorders (Fiske, A., Henningson, P. and Buyx, a., 2019). Clinical Psychological Treatments also include the use of Exposure Therapy through

multiple digital procedures like Virtual Rehabilitation to provide a more precise and direct approach to treating multiple disorders and phobias.

Exposure Therapy

Exposure Therapy was mainly developed as a set of treatments to help with the treatment of post-traumatic stress disorder (PTSD), reduce pathological fear and related emotions and other anxiety disorders like obsessive compulsive disorder (Foa, E.B., 2011). These set of treatments are divided into three primary types – vivo or real life, imaginal and introceptive and the type of exposure used depends on the pathological characteristics of a disorder (Foa, E.B., 2011). Some of the major methods of doing Exposure therapy is through Virtual Reality Therapy and Internet delivered cognitive behavioural therapy.

Virtual Reality Therapy

Virtual reality therapy is an emerging method using computer generated virtual reality to help create a scenario like real-world experiences allowing clients to be exposed to similar stimuli helping treat disorders and phobias (North, M.M. and North, S.M., 2016). Virtual reality therapy has been allowed by health care services to help psychotherapists as it helps provide an accurate replication of certain situations (Tahan, M., 2018). Such Virtual environments include artificially intelligent algorithm. These respond to clients or patients by giving them professional advice and guidance through virtual presence such as a face icon or physical presence in the form of robots (Fiske, A., Henningson, P. and Buyx, A., 2019).

While some people think that the use of Virtual reality for rehabilitation is precise and cost saving as well as helps increase the accessibility of the service provision without clinical supervision, others argue if this is enough to use virtual reality as a form of therapy as there is no such virtual reality system known which can tailor to each individuals needs and flexibly respond to every change in the patients' health (Levac, D.E. and Galvin, J., 2013). They argue that virtual reality treatments can be used as a tool to enhance the ability to recreate situations according to the patients need but cannot be used without clinical supervision (Levac, D.E. and Galvin, J., 2013).

Risks

The availability of drugs or medication to patients without proper continuous supervision is one of the risks which puts the use of AI in psychology a threat (Tahan, M., 2018). Computer systems tend to do what they've been programmed for which makes them not as flexible which might lead to diagnosing the wrong medication to the patient. For psychological treatments which require the patient to interact with the psychologist, AI cannot be used in

such cases. Other limitations could be that patients are not comfortable with the use of AI. The connection between a therapist and a patient is crucial factor which helps treating the patience but since the adoptions of use of digital technologies and AI has increased, this connection is lost as not everyone can be expected to completely trust a digital platform (D'Alfonso, S., 2020).

But it is a fact that AI will always be used as an aid for multiple purposes in the psychological treatments. The benefits including saving time as well as proper organised data of the patients cannot be overlooked. This means that use of these technical methods needs a routine update.

Conclusion

The use of AI is an emerging field in today's world, replacing workers in the banking sector, law professions, teaching sector as well as medical sector. It has huge potential in the future as it has been increasingly implemented in the treatment of many psychological problems. The field of psychology has adapted the use of innovations which are AI based and this has not only helped in improving and advancing psychological practice and research but also shown that using such methods has the potential to substitute mental health care professionals in multiple activities (Luxton, D.D., 2014). Taking the risks into account, the use of AI in Psychological treatments is and will be highly demanded in the future to help reach and help a wider range of people.

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Appendices

Internet-delivered Cognitive Behavioural Therapy
Another kind of psychological treatment which used Artificial Intelligence for treating patients is called Internet-delivered Cognitive Behavioural Therapy. These are programs which are used to help treat patients who suffer mainly from depression (Williams, A.D. and Andrews, G., 2013). This allows the treatments to be of greater accessibility, high fidelity, convenient and cheaper for patients when compared to traditional face-to-face treatments (Williams, A.D. and Andrews, G., 2013).