TECH AIDS IN MENTAL HEALTH

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ABSTRACT

Mental health care is always challenging these days. It demands, more of man power, time and lots of dedication while caring mentally ill clients. The increase incidence and prevalence of mental illness posed huge shortage of health care workers especially in current pandemic situation. The psychiatric nurse, psychologists, psychiatrists and psychiatry social worker to patient ratio is 1:10000. The statistics clearly indicates the scarcity of health care professionals. The decentralization approach of treating the client and chronic out patients were supported or monitored by certain technical apps which guides the client in their course of illness.

KEYWORDS: Chatbot, Artificial intelligence.

INTRODUCTION

The WHO reported 264 million cases of depression in the year 2019, and approximately 800,000 people committing suicide each year. As well as psychological illnesses constitute 10% of leading cause of disability over 30% of non-fatal disease burden. One common problem among affected person is visiting the clinic or hospital for treatment. They often fear of the stigma surrounding mental health. The technological advancement has a major share in the field of medicine and it always had a scope of expansion of service to remote areas like telemedicine. There were various kinds of software applications which facilitate patients monitoring, treatment with cost effectiveness.

Chatbots

Chatbots are Natural Language Processing Framework which assists the user to interact by speaking, texting or through visual languages. It helps in patient communication and analyzes the patient emotions and thoughts and also could, make probable inferences out of their communication. Chatbot usually uses simulation of human conversation with client. Tech companies worldwide are combining the power of artificial intelligence with the portability of smart phones to create chatbots tuned to help patients with mental health concerns. These conversational agents support patients while offering a high level of privacy and anonymity.

The few chatbots in the field of mental health
1. Woebot

Woebot was created in 2017 to assist patients and clinicians in monitoring the moods of its users. The app allows patients to express their thoughts when they engage in therapeutic conversations. Woebot is a fully automated conversational agent that treats depression and anxiety using a digital version of cognitive behaviour therapy (CBT), which is primarily used for behaviour modification in patients. It utilizes natural language processing with a high level of clinical expertise. The result is an AI that carries a daily light-hearted conversation with its user, which creates a positive therapeutic experience.

To build chatbot, the developers utilized natural language processing with a high level of clinical expertise. The result is an artificial intelligence that carries a daily light-hearted conversation with its user, which creates a positive therapeutic experience. Depending on the user's responses to its questions, Woebot sends videos and suggests other useful tools. It carries conversations in English and creates a weekly graph that monitors mood changes.

2. Ellie

Ellie is a popular virtual therapist in southern California. It's initially programmed for treating clients with PTSD and depression. Ellie can detect subtle changes in our facial expressions, rates of speech, or length of pauses

and builds a diagnosis accordingly. It is Capable of reading 60 non-verbal cues a second. Ellie has been set up for collecting and interpreting multisensory data to help the users. The actions, speech and gestures of the chatbot, simulate those of an actual therapist, yet not fully, which makes it a benefit for the patients that are uneasy regarding therapy. The chatbot has been trained to enter encouraging prompts and even nod in approval at the appropriate moments for motivating its patients to open up more. In case of a deep-seated problem in the patient is detected, an option to meet an actual therapist is provided to them, and relevant helpline numbers are shared.

3. Moodkit
Moodkit is one of the best apps for depression in 2017. This chatbot also draws inspiration from CBT with a combination of activity tools that suggest proper steps users can take to improve their mental health.

4. Moodnotes
Moodkits is another useful bot created by Thriveport. Patients manually type in their mood for the day, rate it, and then record their emotions. Moodnotes then asks a series of insightful questions to understand and categorize the user's thought patterns. It points out errors in thinking like needless worrying, emotional reasoning, or generalizing. The app assists patients in reflecting on their emotions and then creating more positivity.

5. Wysa
Wysa developed by inspiring from Eliza. It acts as virtual coach, in the form of cartoon penguin which helps in managing their thoughts and emotions by listening to them and helps in reducing stress. An AI-based, emotionally intelligent chatbot, wysa helps to manage thoughts and emotions via a combination of tools and techniques like Dialectical Behavior Therapy (DBT), evidence-based CBT, and guided meditation. Wysa is available in 30 countries like India, UK and the US adopts majorly.

6. Youper
Youper created an AI chatbot that monitors and improves emotional health via a quick, personalized conversation based on CBT and mindfulness techniques, as well as mood tracking, the app offers meditation instruction. As it learns more about the user, it fine-tunes the experience to better fit needs. Youper is a health assistant bot, which makes use of AI for helping its users to open up about their behaviors, patterns and emotions. The platform indulges in interactions with its users and suggests exercises which can help them in easing their conflict and in dealing with what is bothering them. Towards the start of their text session, the user is allowed to convey what it needs to the chatbot, which could be anything like tips to help them in dealing with anxiety. The platform gathers data based on the text conversations and offers customized feedback on the basis of the acquired information. As the conversation

concludes the bot offers a summary to help its users in understanding their behavioral patterns and symptoms. Youper was recently awarded the best app for coping with COVID-19 by Health.com.

7. Tess
Tess provides customized mental health services by gathering and holding information from multiple sources text messages, web browsers, smart phone apps and messengers. This is a psychological AI which interacts with its users through text and offers a customized form of psychotherapy by facilitating health related reminders when asked and whenever the mental health professional is unavailable. The bot makes use of cognitive behavioral therapy for suggesting its solutions while keeping track of the user's goals.

Key features of Chatbots
1. Chatbots, since they provide privacy, anonymity, and ease of access, can be extremely useful in addressing the delicate issue of mental health.
2. Not only can chatbots serve as companions for people who battle with mental disorders, but they can offer personalized therapy that incorporates concepts like CBT, DBT, and mindfulness.
3. With AI that utilizes machine learning and natural language processing, chatbots are excelling as a remedies for mental health disorders.
4. Technology continues to astound! As the world marches toward more tech-based medicine, we can expect the creation of even more robust and effective AI-based chatbots and treatment platforms.

Uses of chat bots in mental health
1. Simulates an in-person experience: AI has managed to remove the geographical barriers presented by simulating a smooth and flawless personal experience between the patient and the clinician. The remote monitoring and diagnostic tools powered by AI have become the pathway that allows for an in- person experience and interaction between the two parties, irrespective of where they may be located physically.

2. Pinpoints the issue with clarity: The AI bots are capable of taking care of all the routine and vital tasks that are generally carried out by the human clinicians for the consultation procedure, such as inquiring the mental health history and symptom details from the patient. For this, multimedia resources are leveraged by the bot to gauge the body language and the mental state of the patient and to detect any signs of concern or affliction which in turn helps in saving time for the human clinicians.

3.Makes patients feel more at ease: We are often skeptical or embarrassed at the prospect of opening up to a therapist and telling them our problems owing to the fear of being judged or scrutinized, especially when it comes to eyebrow raising topics like sexual activity or drinking. This issue gets resolved when AI bots are

introduced. For many people it's less of a struggle to admit their problems to a bot than to a human listener. They feel more at ease which makes leveraging AI a good advantage.

4. Minimizes cost and maximizes access: With AI at our service there's no sole reliance on the accessibility of human clinicians which in turn results in AI powered mental health care minimizing the expenses while easing out the task of treating mental health problems. The concerns of more people are addressed, with lower expenses.

5.Faster detection: From anxiety, depression, stress to PTSD, AI algorithms can identify it all and at a much faster rate, especially when it comes to detecting cases like the authenticity and genuineness of a suicide note. Incorporating AI also helps in minimizing the waiting or stand by period for appointments while also easing out the burden extended towards lengthy mental health care and services.

6. Back the therapists in their tasks: Since AI can interpret and keep tabs on massive sections of data swiftly and faster than humans, they offer precise diagnosis and can make note of the symptoms and condition of the patient at the early stage and notify the therapists to help them in drafting their treatment strategy. This makes it a huge advantage for the therapists as well as the patients.

CONCLUSION

The wise use of artificial intelligence through the various applications is contributing tremendously in the field of mental health. Though there is lack of appropriateness and accuracy in diagnosis we can't overlook their uses. But a constant supervision and feedback is necessary while relying on technology. As the advancement and up gradation of technologies AI changes the management of mental health in future.

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