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Assainir: A Cure for Mental Health Problems

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Abstract- The objective of this research paper is to introduce a new mental health tracker analysis app that can help individuals monitor their mental health and well-being, addressing the growing need for mental health support in today's society. The prevalence of mental health disorders has been increasing rapidly, with people facing various problems related to mental health in their daily lives, including stress, anxiety, and depression. The mental health tracker analysis app aims to provide individuals with an easy-to-use tool to monitor their mental health and identify potential issues early on. This app utilizes various features, including mood tracking, stress level tracking, activity tracking, and access to psychiatric counselling sessions. The study involves a survey conducted among a group of individuals who have faced mental health issues in order to get knowledge about the app's effectiveness, ease of use, and the requirement of psychiatric counselling sessions. The results of the study show that the app can be a valuable tool for individuals looking to improve their mental health and manage their mental well-being effectively.

I.INTRODUCTION

Mental health has been considered as the major priority by World Health Organization (WHO) . In today's world people are facing various issues related to their mental health in daily lives. 1 of every 4 are most likely to face any mental disorder. There can be various reasons of these issues including stress, childhood trauma, domestic abuse etc. In today's world mental health has to be in concern.

With the increase in technology, it has become easier for people to analyse their mental health on a very initial level. Various digital gadgets and smart technologies help people to maintain their mental well-being. It has been very important for for each and every individual to analyze their mental issues and take proper measures to resolve them.

This research paper introduces a new mental health analysis and assisting guidance web application. The web app includes various features like analyzing mental health issues by record of their daily activities ,mood swings,stress level,eating schedule,changes in daily actions. Organizing counselling sessions with preferred psychiatrist is also included as a prominent feature of our app. By the use of this web app , it makes easy for the individual to track his mental issue as very early stage and this helps people to maintain their well-being.

Overall, the mental health tracker analysis app represents a promising tool for individuals seeking to monitor their mental well-being and access mental health support as needed. By harnessing the power of technology, this app has the potential to significantly improve the lives of individuals facing mental health challenges and contribute to the overall improvement of global mental health.

II.RELATED WORKS

In recent years, there has been a growing interest in developing mobile apps and digital tools for mental health support. Several apps are currently available in the market, providing individuals with various features to monitor their mental well-being and access mental health support.

[1] This paper presents a critical assessment analysis on mental health detection in Online Social Networks (OSNs) based on the data sources, machine learning techniques, and feature extraction method. The appropriateness of the mental health detection was also investigated by identifying its data analysis method, comparison, challenges, and limitations. This study reviewed articles published in major databases between 2007 and 2018 through keyword searches The presented method is an alternative approach to the early detection of mental health problems rather than using traditional strategies, such as collecting data through questionnaires or devices and sensors, which are time-consuming and costly. However, mental health problem detection through OSNs necessitates a comprehensive adoption, innovative algorithms, and computational linguistics to describe its limitations and challenges. Moreover, referrals from mental health specialists as subject matter experts are also required to help obtain accurate and effective information.

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[2] This paper aims to synthesize the literature on machine learning (ML) and big data applications for mental health, highlighting current research and applications in practice.
We employed a scoping review methodology to rapidly map the field of ML in mental health. Eight health and information technology research databases were searched for papers covering this domain. Articles were assessed by two reviewers, and data were extracted on the article's mental health application, ML technique, data type, and study results. Articles were then synthesized via narrative review.

[3] This research work proposes to apply various machine learning algorithms such as support vector machines, decision trees, naïve bayes classifier, K-nearest neighbour classifier and logistic regression to identify state of mental health in a target group. The responses obtained from the target group for the designed questionnaire were first subject to unsupervised learning techniques. The labels obtained as a result of clustering were validated by computing the Mean Opinion Score. These cluster labels were then used to build classifiers to predict the mental health of an individual. Population from various groups like high school students, college students and working professionals were considered as target groups. The research presents an analysis of applying the aforementioned machine learning algorithms on the target groups and also suggests directions for future work.

[4] Predicting which children will go on to develop mental health symptoms as adolescents is critical for early intervention and preventing future, severe negative outcomes. Although many aspects of a child's life, personality, and symptoms have been flagged as indicators, there is currently no model created to screen the general population for the risk of developing mental health problems. Additionally, the advent of machine learning techniques represents an exciting way to potentially improve upon the standard prediction modelling technique, logistic regression. Therefore, we aimed to I.) develop a model that can predict mental health problems in mid-adolescence II.) investigate if machine learning techniques (random forest, support vector machines, neural network, and XGBoost) will outperform logistic regression.

[5] There is an immense need to analyze and monitor a person's mental health as justified in our previous work. Feature extraction is a decisive part of all the data mining related tasks. We utilize deep learning feature extraction algorithm like sentence embedding to analyze mental health of persons from their social media posting and behavioral features and combine it with the traditional machine learning algorithms to enhance their performance. Newly, deep learning approaches have emerged as a novice way of constructing meaningful representations from unstructured data.

III.AIM OF STUDY

In the proposed study, we aim to provide a solution for the rising problem of mental health crisis. As per the sighted studies, we have seen a definite pattern which involves dependent behavior on the part of technology throughout all the studies, But, it is very important to understand the non technological behavior of the problem. Such as:

1. How the emotional behavior of the subject varies.
2. How does it affect the people surrounding the subject
3. After effects of PTSD

Maintaining an eye upon these symptoms can help us in recognizing the core of the problem practically without depending fully on the technological part. The proposed study uses Data analysis to understand these aspects for the subjects data and hence develops the understanding about how the problem should be treated initially.

Once the problem is identified based upon the symptoms, the solution could be designed. The solution could be of two types:

- Easy temporary remedy to ease the symptoms
- Higher emphasis on problem using expert appointment

III.METHODOLOGY

In this section, we described how we analyze and help people to cure their disorders by this web-app. There are few steps in this process. They are defined below:

Understanding of symptoms

There are various psychiatric ways to test mental issues called the study of psychology. Our understanding of the nature of these phenomena is still fairly limited, partly due to the biases introduced by the retrospective recall of symptoms. Assainir recognizes the disorder by symptoms which people face in their daily lives.

We know every issue in mental state reflects some actions in our daily lives. Assainir captures the problem by a assessment based on their change in regular activities . It includes details of their sleep schedule, work schedule, socialization and various other habits.

Besides providing the assessment, we also provide a bot for assistance. It chats with the users and user can share their experiences and problems to it. Bot will provide proper assistance and solution. Good examples are anhedonia and avolition, both of which have long been reported to form part of the phenomenology of psychotic disorders, depression and bipolar disorder.

Anhedonia is generally described as a decreased capacity to experience pleasure. However, what does this mean for our experience and behaviour in daily life? A decreased level of positivism in daily life – which has been found in some studies in patients with psychosis– may reflect a diminished capacity to experience pleasure.

The patients with anhedonia reportedly experience positive effect around people than being alone but they always end up stayine alone and away from people. This bring us to avolition, being in state where person lacks motivation and they are not able to convert the positive energy into productivity.

Questionnaire development

The development of questionnaire development is one of the important aspects of the app. This questionnaire consist of different questions regarding details of activities and experiences people are facing in their daily life and questions about their current state(thoughts, moods and symptoms).

Statistical Approaches

Statistical approaches are used to analyze data and concentrate on curing people providing them the appropriate conclusion.
This type of data is very typical and can vary the predictions. Data and prediction can vary person to person. Different statistical model gives different accuracy. To carry this part of the study, a range of tools including python libraries pandas, numpy and visualization libraries are used. Continuing to Machine learning once the Explanatory Data analysis is done, classification models are used. For this purpose, all the classification models imported under sklearn distribution.

Optimization of the model is optional and could be avoided in case of optimal performance as expected from the classifier models.
On the other hand the models could be optimized using GridSearchCV.

IV.RESULT AND CONCLUSION

We have concluded the study with the developed system which inputs the user symptoms in form of quiz answers and provides results based upon the input. To help the person deal with the current issue, we have provided, regular exercising options which can be performed by one in their daily lives and help them to socialize with others.
We have also provided psychiatric consultation for better results and a platform to fix the appointment with the psychiatrits where one can share their personal experiences and the issues they are facing, the uncomfortable feelings they have to deal with.
We also provide a chatbot in which the subject can write their symptoms manually is they find the questionnaire unsatisfying or not relatable to their regular activities
Chillzone tool is available for the users so that they can distract themselves from the increasing surge of symptoms which might not be easy to handle.

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