# PSYCHEDOTE - A MENTAL HEALTH SELF-ASSESSMENT AND ASSISTANCE WEB APP

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Abstract—Mental Health is something which is not much  talked about, it is neglected by most of the people considering it  simply as temporary stress. People between the ages of 12-25 are  generally dealing with high stress and mental disorders. Also,  students are more vulnerable to fall a prey to such mishaps,  because of low awareness, hesitation to speak about it, proper  guidance in such times, etc. So, in this paper we describe our  optimistic approach to build a web app which helps an  individual to conduct a self- assessment test which further helps  an individual to deal with the state in which they are in based on  the results. Also, we provide with several assistance to help  concerned professionals to figure out the issue of an individual  based on several mental health parameters. We also provide music recommendation, Bhagavad gita quotes, jokes games that  can help an individual to cope up with mental distress for the  individuals of schools .We can provide some assistance to help  them to stay mentally healthy and fit.

 Keywords: Anxiety, Depression, Stress, Mood Mapping,  Counseling, Recommendations.

## I. INTRODUCTION

Mental health awareness and evaluation are very  important for students as they play a critical role in their  academic and personal success. Students face a wide range of  stressors, including academic pressures, social interactions,  financial concerns, and family issues, which can have a  significant impact on their mental health and well-being.  Being aware of one's mental health status and seeking appropriate evaluation and treatment when necessary can  help students to identify and manage mental health concerns  that may affect their academic performance, interpersonal  relationships, and overall quality of life. In addition, early detection and intervention for mental health issues can prevent  them from becoming more severe and can lead to more  effective treatment outcomes. Moreover, creating a supportive  and inclusive environment that promotes mental health  awareness and evaluation can also contribute to the overall  well-being of the student population. It can help to reduce  stigma associated with mental health issues and encourage  students to seek help when needed. In conclusion, mental health awareness and evaluation are  essential for students to maintain their mental health and well being. By recognizing the importance of mental health and  seeking appropriate evaluation and treatment when necessary,  students can improve their academic performance, personal  relationships, and overall quality of life.

## II. LITERATURE SURVEY

Several studies done on the techniques used to  development of self-assessment and guidance. Applasamy,  V.Gamboa,R.A.,Al-Atabi & Namasivayam in their research  study titled 'Measuring Happiness in Academic Environment:  A case study of school of Engineering at Taylor's University (Malaysia)[1] done in the year 2014 stated that the traditional  areas of social concern are identified as living standards health  and education while the less traditional areas are time to use  ,psychological wellbeing environmental diversity and cultural  diversity. Also, the measure of GIHI constitutes many key areas  which can be classified as traditional areas and less than  traditional areas. Musikanski, L., Cloutier, S, Bejarano,  E.Briggs,,D.Colbert,S.Bejarano in their studies titled  'Happiness IndexMethodology'[2] done in the year 2017 that the development  procedures are described so survey instrument users  understand the history of data collected by the Happiness  Alliance and can use the information when analyzing data.
In the year 2017 Sarah Ahtesham in her research titled  'Analyzing Happiness Index as a measure with its Parameters  and Strategies for improving India's Rank in World  Happiness Report [[3] came to an

inference that research upon mental health research is mostly descriptive and fundamental in nature. It includes both quantitative evaluation as well as qualitative understanding of the concept .Past trends are observed and graphs and charts are constructed accordingly to understand the future possibilities. Badri, Guang, Al Rashedi, Al Sheryani in the year 2018 came to a conclusion with the research paper named 'The effects of home and school on children's happiness: a structural equation model' that the empirical context of this research and discusses the sample used, the instrument developed for the study, and the analytical methods used in addressing the objectives of the study. 'A study on Happiness and related factors among Indian college students ' [4] articulated in the year 2019 by B.Chakraborty,S.Maji,S.Baidya gave interesting findings stating that the relationship between income and happiness is one of the great interest as many want to believe that money can buy happiness.

A Study on Happiness and Related Factors among Indian College Students [5] a student's social life, job prospects, and aspects of the personal situation such as overthinking on bad memories and substance/alcohol abuse issues are significantly related to happiness, we have not checked if the level of happiness contributes to these factors as well. It might so happen that a happy person has a more active social life, better job prospects, and favorable personal situation.

Velicer, W. F., Eaton, C. A., & Fava, J. L. (2000). [6] This paper discusses the challenges of conducting mental health research online, including issues with self-report measures. The authors argue that the internet is a powerful tool for conducting research due to its accessibility and cost

effectiveness. However, they also note that there are several challenges associated with internet-based research, including issues related to sample representativeness, participant motivation, and data quality.

Kocalevent, R. D., Hinz, A., & Brähler, E. (2013) [7] the authors emphasize the importance of standardized screening tools for depression to ensure their reliability and validity across different populations. The study involved administering the PHQ-9 to a large sample of individuals from the general population in Germany and analyzing the data to determine the optimal cutoff score for identifying depression. The results showed that a cutoff score of 10 was optimal for identifying individuals with depression in the general population. The authors suggest that this cutoff score can be used to standardize the use of the PHQ-9 in research and clinical settings.

De Wit, L., Fenwick, K., & Bryden, K. (2018) [8] the authors emphasize the importance of reliable and valid self-report measures in the assessment of these conditions, as they are often the first point of contact for patients seeking help. The review includes both generic measures and measures specific to depression and anxiety, and provides guidance on selecting the most appropriate measure for a given context.

The authors discuss the psychometric properties of each measure, including their reliability and validity, as well as their strengths and limitations. They also provide information on the administration and scoring of each measure, as well as guidance on interpreting scores and making clinical decisions based on the results.

Barlow, D.H.(2002).[9] The book covers various topics related to anxiety disorders, including the classification and diagnosis of anxiety disorders, the etiology and risk factors associated with anxiety, the theoretical frameworks for understanding anxiety, and evidence-based treatments for anxiety and panic disorders. Barlow presents a cognitive

behavioral perspective on anxiety, emphasizing the role of cognitive processes, behavioral factors, and biological influences in the development and maintenance of anxiety disorders. He also discusses the application of cognitive

behavioral therapies, such as cognitive therapy, exposure therapy, and other empirically supported interventions, in the treatment of anxiety and panic disorders.

McEvoy, P.M. (2009) [10] in this review paper, McEvoy examines the mechanisms of change underlying cognitive therapy for anxiety disorders. Cognitive therapy, a type of psychotherapy that focuses on identifying and changing maladaptive thought patterns and beliefs, has been shown to be effective in the treatment of various anxiety disorders, including generalized anxiety disorder, social

anxiety disorder, and panic disorder. "Mechanisms of Change in Cognitive Therapy for Anxiety Disorders: A Review" provides a comprehensive overview of the current understanding of the mechanisms underlying the effectiveness of cognitive therapy in treating anxiety disorders. It synthesizes the existing literature and provides valuable insights for clinicians and researchers interested in cognitive therapy for anxiety disorders and the underlying processes that contribute to its therapeutic effects.

III. METHODOLOGY

In our research work we provide the individuals with a variety of assistance and guidance to cope up with mental health issues.

1.General Questionnaire--

For the self-assessment, questionnaire were prepared using surveys that indicated symptoms of anxiety and depression in general students which is to be answered in checkboxes. It consists of ten questions related to what they feel with each question having values as 'anxiety' and 'Depression'. Now, it may happen that a person is having a rough time and facing temporary stress and not anxiety or depression .To deal with such cases and more we give results based on the severity as:

• If the person marks less than three checkboxes affirmatively the result shown is that the person is suffering from temporary stress.

• If the person answers two question affirmatively having the value depression and one as anxiety the result shown is stress and same goes of the later is replaced with the former.

• If the person marks three or more checkboxes of same values that is anxiety the result is shown as "The person might be going through anxiety. Hence, eaches the importance of mindfulness and staying present in proceed further with Anxiety self-Assessment test". The same goes for Depression. the moment. By being aware of our thoughts and emotions, we can better understand our triggers and take steps to manage ☐ If the person marks more than three for both them. anxiety and depression containing values he is advised to go for both the anxiety and depression self-assessment test.

3. Mood Mapping

Mood mapping can be used as an assistance to a ☐ If the person marks three or more checkboxes of Anxiety containing value and less than three checkboxes of depression then the individual needs help dealing with anxiety and concerns are raised for depression symptoms and vice-versa.

2.Self-Assessment Test

Self-assessment tools can also promote self-awareness and encourage individuals to reflect on their own mental health. By gaining a better understanding of their own symptoms and experiences, individuals may be more likely to seek professional help when necessary. [7]

This is developed using JavaScript where there are a set of questions which are situation and behavioral based having 5 options which values have assigned ranged from minimum to mild and moderate to high. After completing the 'Anxiety' and 'Depression' or both self-assessment test the entire score is accumulated and the result with further guidance and assistance is given as per the scored result .Furthermore, the student can proceed with A. Music recommendation and B Gita quotes based on the issue as 'Anxiety' or 'Depression'.

2. A. Music Recommendation

Music can be a powerful tool for reducing stress and promoting relaxation. It can help individuals feel calmer and more centered, which can be particularly helpful during times of high stress. [13]

Music recommendation is done based on how the current emotional state of the individual is and what kind of genre they prefer based on this certain playlist from Spotify is suggested using Spotify API .This would help to cope up with the mental health issues and provide peace and satisfaction to an individual.

Fig. 1: Music Recommendation

2. B. Bhagavad Gita quotes

Bhagavad gita quotes along with shlokas translation and meaning its verses are provide to fight with anxiety and depression [14]. The Bhagavad Gita teaches that one's true nature is pure and that the source of all suffering comes from identifying with the temporary material world. By cultivating self-awareness and realizing the true nature of the self, one can detach from materialistic desires and find peace and contentment within themselves.[15] The Bhagavad Gita

professional that can detect the expression of the individual who went to the counselling. For eg: If the counsellor asks a question to the individual and he gets disturbed or sad it would be detected by our technology that would help the concerned professional to take this change in mood or expression in notice. Also, the intensity of the emotion is provided as well as Facial emotion detection technology can provide an objective assessment of a patient's emotional state[11], which can help the counselor in determining the appropriate treatment and counseling techniques. The technology can detect subtle changes in facial expressions that may be missed by a human counselor, thereby increasing the accuracy of emotion detection [12].The technology is non-invasive and does not require physical contact with the patient, which can be especially helpful for individuals who may feel uncomfortable with physical touch.
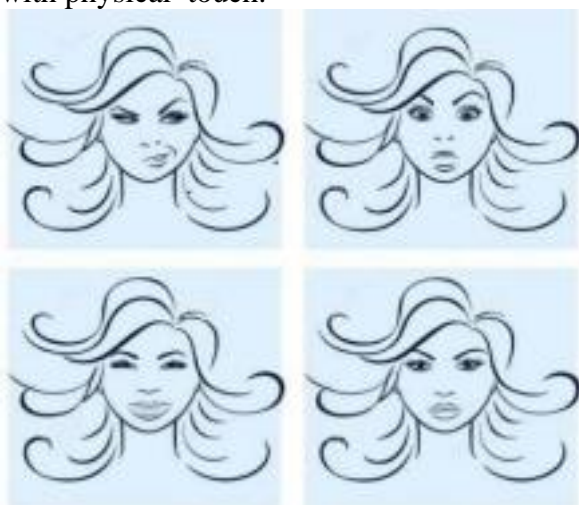


Fig.2: [12.Different Expressions]

Ajax is used along with FaceAPI to perform facial expression detection in our web application. Ajax is used to send live web cam feed from the client side of our web application to the server side for processing using FaceAPI .The processed data is then returned to the client side using Ajax for further analysis and display to determine the emotions being detected as in fig 2. Facial Expression Detection(FED) involves using machine learning algorithms such as Convocational Neural Networks(CNN),Support Vector Machines(SVMs), and decision trees.

Facial emotion detection technology can save time.

during the counseling session, as it can quickly provide the counselor with an analysis of the patient's emotional state without the need for lengthy discussions or questionnaires.
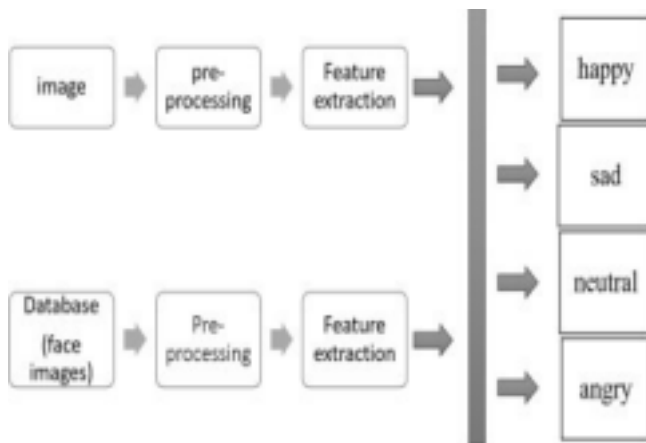
Fig.3: Emotion Detection

4. Mind – Strengthening

 We have added certain games, quotes and jokes section that would accompany ones issue and make their mind relaxed and strong as well.

Our approach to creating a model that helps people cope with anxiety and depression is exemplified by our entire workflow model, which is shown in Figure 4 and glimpse of our model shown in fig 4,5 and 6.



Fig. 5: Anxiety test
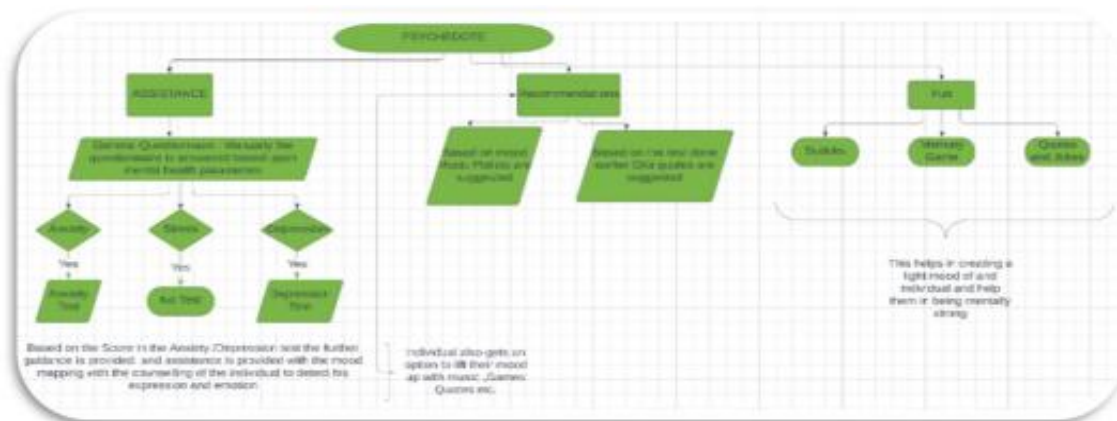


Fig. 6 : Bhagavad Gita Quotes

Fig.4 :Complete workflow  Mode

Conclusion

In conclusion, the development of Psychedote  represents a significant advancement in utilizing technology to offer accessible and personalized support

for individuals grappling with mental health issues.  Additionally, the incorporation of Bhagavad Gita quotes has been observed to instill a sense of  spirituality and tranquility, aiding individuals in managing conditions like stress, anxiety, and

depression to a considerable extent.Furthermore, the  continuous collection of happiness data on a large scale and regular basis serves not only to inform policy  decisions but also to establish benchmarks for promoting overall well-being. By integrating these  diverse approaches, Psychedote stands as a holistic solution in the realm of mental health support, paving  the way for improved mental well-being on both individual and societal levels.

6. Future work

In future we Increase the app's functionality to provide  more individualised suggestions based on replies and  usage trends from users. Utilise machine learning  techniques to customise help modules and self

assessment questions based on user preferences and  needs. We will develop mechanisms that enable users'  progress to be tracked longitudinally, and the tracking  of changes in mental health outcomes and symptoms  over time. Provide automated reminders and follow-up  prompts to promote consistent app usage and enable  continuous self-evaluation and self-care.

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