



Identifying Potential Mental Health Issues in Adolescents Through Screening

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ABSTRACT

This paper describes our research into the key areas of addressing mental health problems in young people, highlighting the importance of early diagnosis and early intervention time to improve this. Through a comprehensive review, we identify and analyze the emergence of mental health problems among young people and present the diverse contexts in which they find themselves. Additionally, our study examines various measures and tools to evaluate their benefits and limitations. We advocate for a supportive environment where young people can openly discuss mental health issues and encourage collaboration between academics, healthcare providers, and families. Recognizing the potential and potential inherent in all young people, we view youth as a time of opportunity for growth, self-discovery, and vulnerability. We believe that by screening young people for mental health issues and providing early intervention and support, we can guide them through the uncertainty, anxiety, and safety they often face during this period of their lives. As caregivers, educators, and advocates, we are committed to providing youth with the tools and information necessary to overcome these challenges. Our investment in their health not only meets their immediate needs, but also lays the foundation for a future in which they can thrive, aspire and make a good contribution to their society. We believe that all young people have the potential to thrive, given the necessary support and understanding.

Keywords — Youth Mental Health , Early Intervention, Comprehensive Review , Collaboration , Resilience

I. INTRODUCTION

Having successfully concluded our project, our research paper emphasizes the significance of addressing mental health challenges among young individuals, emphasizing the critical role of early diagnosis and intervention during this crucial phase. We delve into the most prevalent psychological issues affecting youth and provide insights into their experiences. Furthermore, our paper evaluates various assessment methods and resources, analyzing their advantages and limitations. We advocate for the establishment of a supportive environment that fosters conversations about

mental health among youth and promotes collaboration among educational institutions, healthcare professionals, and families. Rooted in our recognition of the potential within all young individuals, we view adolescence as a period of growth, self-discovery, and vulnerability. By screening teenagers for mental health issues and offering early intervention and support, we aim to guide them through the challenges of uncertainty, stress, and insecurity often encountered during this stage of life. As caregivers, educators, and therapists, we are committed to equipping young people with the necessary tools and

knowledge to navigate these challenges successfully. Our investment in their well-being not only addresses their immediate needs but also lays the groundwork for a future where they can thrive, pursue their aspirations, and contribute meaningfully to supportive and encouraging communities. With this conviction, we firmly believe that all young individuals can flourish when provided with the essential support and understanding.

II. NEED OF THE STUDY

Following our look into our research papers reveal the importance of addressing mental health issues in young people and demonstrate the important role of early diagnosis and intervention at this crucial stage. We explore the most common mental health issues affecting young people and understand their experiences. Additionally, in our article, various measures and resources are identified and their advantages and limitations are stated. We advocate for a supportive environment that encourages young people to talk about mental health issues and encourages collaboration between schools, professionals and families. We recognize the potential of every young person, so we see youth as a time of growth, self-discovery and vulnerability. By screening young people for mental health issues and providing early intervention and support, we help them cope with the uncertainty, anxiety and helplessness often encountered at this stage of life. As caregivers, educators, and professionals, we are committed to providing young people with the tools and information they need to overcome these challenges. The investments we make in their health not only meet their current needs, but also build them for the future, allowing them to thrive, follow their desires and have a positive impact on the society that supports them. With this belief, support and understanding, we believe that all young people can develop.

III. RESEARCH METHODOLOGY

Upon completion of our study, the methodology determines the project plan and methods used in the research, including many important factors. These include the scope of the study, demographic analysis, sample selection process, data, analyzed variables, and evaluation process. The specific description is as follows:

A. Functional Requirement

1.Managing users: We have implemented Google sign up and login which can be easily managed by administrators and owners

2.Screening Protocol: Owners and administrators can create, edit, delete or manage screening tests so that it can be used in various different problems and that can be used by people that need it to generate effective analysis of problem and giving appropriate solution for it. This software can be used by any individual or organization for screening mental health issues in adolescents. These can be used by schools, colleges or individuals

3.Data Entry and Storage: This software has a very simple and easy to understand interface allows any individual like teachers and practitioners to analyse the data generated to find patterns and extract useful information. Our project also complies with privacy regulations and keeps user data safe from any hackers or other users trying to steal data.

Analysis and Reporting: The software is able to generate reports with useful and aggregated data which can be used for graphical representations like charts, graphs and other required tools to help stakeholders and owners understand the situation and make informed decisions.

5. Blog Management: Users and Administrators can create various blogs in our software that consists of various helpful material related to mental health problems and also can be used for educational purposes by schools, colleges and various other organizations

6.Feedback Mechanism: This software allows users to give feedbacks related to software and also they are able to report bugs and issues causing problems in the software to help developers and administrators to

quickly and easily identify issues and solve them to give a better experience to users

B. Non-Functional Requirement

We built software that is very responsive and free of delays and lags for users and administrators. Our program provides accurate and useful results for users. We offer a user-friendly chat bot to assist users in resolving issues quickly. To secure user data, we have adopted security policies such as hashing and encryption to prevent hackers from stealing sensitive information. The interface is straightforward and easy to grasp, making it suitable for use by individuals and organisations to assess the mental health of employees and others. Our software is developed with clean and bug-free code to ensure reliability, accuracy, and minimal downtime that does not impact user experience. The software is designed to scale up or down resources based on user numbers. It can handle traffic fluctuations at any moment. The system adheres to government data privacy and security requirements. We regularly monitor our software and address user feedback and problem reports to provide a positive user experience.

C. Theoretical framework

Our software is a web application which allows teens, adolescents to screen themselves to figure out if they are facing any mental health related problems like depression, anxiety and other similar issues. Our software can also be used by schools, colleges and other institutions to use our software with their employees, students and other people to keep track of their mental well being. This software also provides the ability to the users to create or read blogs for educational purposes and also to give useful information in the form of blogs to our website which will be useful to others. We have also provided a mental health chat bot with it in order to help people to easily communicate their problems in a simple language which can be understood by them.

Our software consists of three major components which are:

1. A database which stores all different users and their related information and past history of problems.
2. An easy to use chatbot which can help people easily communicate their issues like they are talking to a friend.
3. Screening tests used to easily and accurately identify mental health problem that the user is facing.

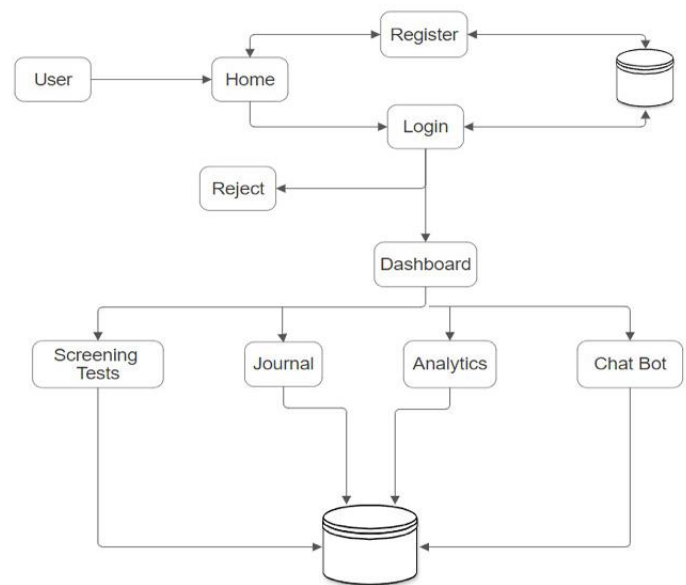


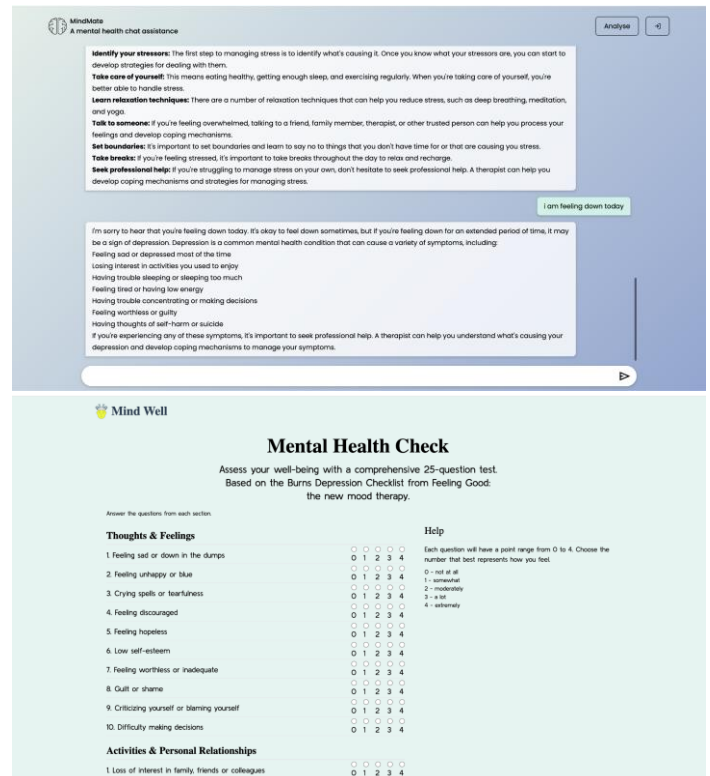
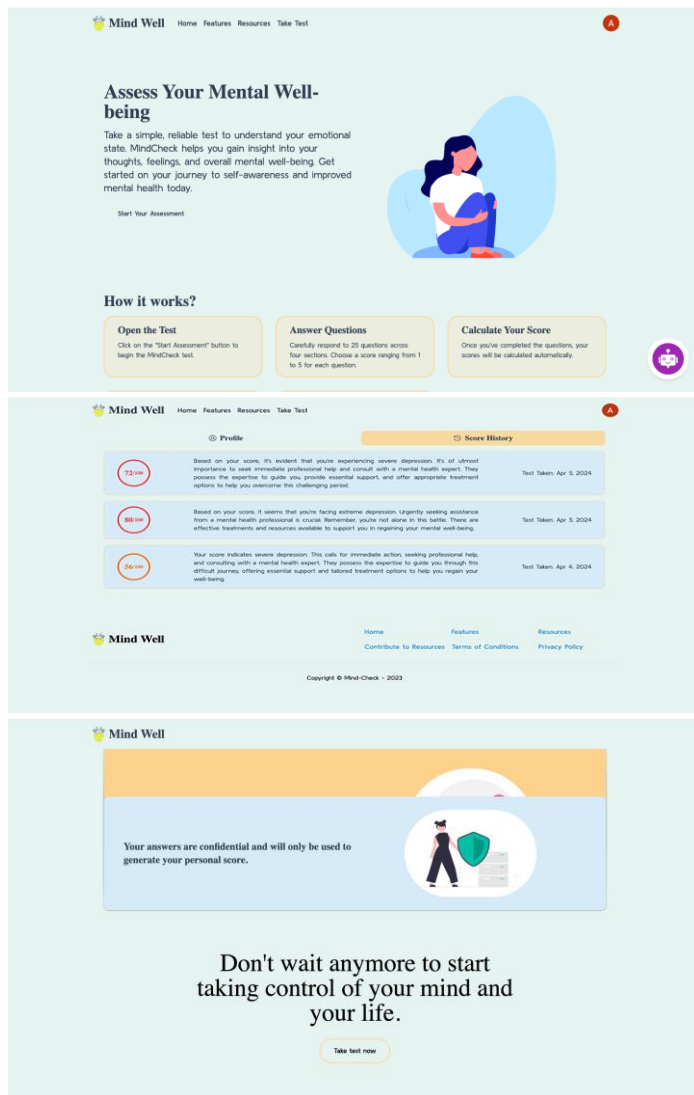
Fig. 1 Web Application Framework of the project

IV. RESULTS AND DISCUSSION

The project enhances many pros while considering mental health problems in the younger generation. The major advantage of this project is detection of issues at an early stage. Plus, the application provides data based decision making by gathering and understanding data from all possible sources concerning this particular area of topic. A delicate aspect of this project is its commitment to standardization. Though the execution of proper screening protocols, the tests process keeps compatible around different learning and medical organisations.

Nevertheless, particular restrictions should be considered. Confidentiality measures come because of

gathering of delicate knowledge from the users. This digitalisation of these practices increase problems for the individuals who are less active on the internet because of limited access to technology. In addition to that, the rationality of information provided by the younger generation creates unnecessary problems because users don't provide exact and correct information regularly considering such type of data.



V. CONCLUSIONS

After our project was successfully finished, we were able to expand our scope to include a thorough framework designed to address youth mental health issues by means of systematic screening and stigma reduction. To guarantee a smooth implementation, this required precisely specified goals, deliverables, stakeholders, and activity descriptions. It also included a comprehensive calendar with milestones, a strategy for allocating funds, and a strong risk management plan. Key performance indicators were among the evaluation criteria used to produce quantifiable results in evaluating the project's impact. Interactions within the project framework were governed by cooperation with a variety of stakeholders, a thorough communication plan, and ethical concerns. A focus on development and training made sure that project participants were fully qualified. Our scope also included considerations for further expansion, legal and regulatory compliance, and long-term viability.

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REFERENCES

- [1] Choudhury A, Asan O, Alelyani T. Exploring the Role of the Internet, Care Quality and Communication in Shaping Mental Health: Analysis of the Health Information National Trends Survey. *IEEE J Biomed Health Inform.* 2022 Jan;26(1):468-477. doi: 10.1109/JBHI.2021.3087083. Epub 2022 Jan 17. PMID: 34097623.
- [2] K. Park, M. Jung Kim, J. Kim, O. Cheon Kwon, D. Yoon and H. Kim, "Requirements and Design of Mental Health System for Stress Management of Knowledge Workers," 2020 International Conference on Information and Communication Technology Convergence (ICTC), Jeju, Korea (South), 2020, pp. 1829-1832, doi: 10.1109/ICTC49870.2020.9289464.
- [3] R. Katarya and S. Maan, "Predicting Mental health disorders using Machine Learning for employees in technical and non-technical companies," 2020 IEEE International Conference on Advances and Developments in Electrical and Electronics Engineering (ICADEE), Coimbatore, India, 2020, pp. 1-5, doi: 10.1109/ICADEE51157.2020.9368923.
- [4] R. Wang, J. Wang, Y. Liao and J. Wang, "Supervised Machine Learning Chatbots for Perinatal Mental Healthcare," 2020 International Conference on Intelligent Computing and Human-Computer Interaction (ICHCI), Sanya, China, 2020, pp. 378-383, doi: 10.1109/ICHCI51889.2020.00086.
- [5] E. Krisnanik, I. N. Isnainiyah and A. Z. A. Resdiansyah, "The Development of Mobile-based Application for Mental Health Counseling during the COVID-19 Pandemic," 2020 International Conference on Informatics, Multimedia, Cyber and Information System (ICIMCIS), Jakarta, Indonesia, 2020, pp. 324-328, doi: 10.1109/ICIMCIS51567.2020.935429