

Happy Mind: Easily Accessible, Effective, and Personalized Mental Health Care

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Abstract—The integration of technology into mental health support systems has opened new frontiers for monitoring and intervention, offering innovative solutions to longstanding challenges. This paper explores technology-driven approaches that enhance the accessibility, effectiveness, and personalization of mental health care. Through reviewing existing systems and technology, and finding out challenges on these systems, We designed and implemented a system which will resolve few of the challenges. By analyzing current trends and emerging technologies, this study aims to provide a comprehensive overview of how digital innovations are transforming mental health support systems and improving outcomes for individuals with mental health conditions. Designing a system with the aim of reaching general people give personalized care.

I. INTRODUCTION

In recent years, mental health has emerged as a critical component of overall well-being, garnering increased attention from healthcare providers, policymakers, and the general public. Despite this growing recognition, access to effective and personalized mental health care remains a significant challenge for many individuals. Factors such as limited availability of mental health professionals, geographical barriers, financial constraints, and the persistent stigma surrounding mental health issues contribute to the gap in accessible care. Moreover, the one-size-fits-all approach prevalent in traditional mental health services often fails to address the unique needs and circumstances of each individual, leading to sub optimal outcomes.

Happy Mind: Easily Accessible, Effective, and Personalized Mental Health Care seeks to bridge this gap by leveraging modern technology to deliver tailored mental health solutions that are both accessible and effective. This platform is designed to provide personalized care by utilizing user data to create customized interventions, resources, and support systems that cater to the specific needs of each user. This paper is structured to provide a comprehensive overview of the Happy Mind platform, detailing its conception, development, and implementation. Through the development of Happy Mind, this paper contributes to the ongoing discourse on mental health innovation, offering a viable model for making mental health

care more accessible, effective, and personalised. By addressing the limitations of traditional systems and harnessing the power of technology, Happy Mind aspires to empower individuals to take proactive steps towards their mental well-being, ultimately fostering a healthier and more resilient society

II. LITERATURE REVIEW

Mental health is essential to overall well-being and should be a priority in public health policies. Mental disorders impose a significant global burden, impacting individuals and societies both economically and socially. Many countries have inadequate mental health services, necessitating greater investment in infrastructure and workforce. These disorders significantly contribute to disability-adjusted life years (DALYs) and lead to substantial economic costs. [1] In low and middle-income countries, the online provision of mental health care services has addressed issues affecting service availability, accessibility, mass awareness of services, and stigma. Stakeholders perceive digital media-based mental health services as beneficial for increasing awareness, availability, and accessibility of care. Participants recommend rehabilitating existing pathways, using social media to raise awareness, and implementing strategies that integrate various digital services. These initiatives aim to strengthen the mental health system and promote positive mental health-seeking behaviors. [2]

Individuals with bipolar disorder are increasingly using digital tracking methods to self-monitor aspects like mood, sleep, finances, exercise, and social interactions. Most participants report positive experiences with technology-based tracking, as it enables self-reflection, enhances agency in health management, and improves communication with treatment teams. [3] Telemental health care is highlighted as a viable and effective alternative to traditional mental health services. Telemedicine interventions have been shown to be comparable in effectiveness to in-person care for various mental health conditions. [4] Technology-delivered solutions have been found to be feasible, acceptable, and sometimes even more effective than those administered by humans. However, challenges include limited access to computers, mobile devices, and high-speed internet—particularly for low-income individuals and those in rural areas. Alternatives like DVD-delivered interventions or telephone therapy can help bridge this gap. Age-related fac-

*Facilitated by the Department of Computer Science & Engineering, Independent University, Bangladesh (IUB)

tors such as perceptions of technology, prior experience, and cognitive or physical abilities also influence technology use among older adults. Providing instruction and coaching can enhance their engagement and benefit from these technologies. Additionally, augmenting self-guided programs with support can improve retention and adherence. Since most technology is not designed with older adults in mind, involving them in user-centered design is crucial to ensure that these solutions are relevant, feasible, and widely adopted by this population. [5]

Digital innovations in mental health offer great potential, but present unique challenges, including the need for high-quality validation, real-world clinical outcomes, and ethical concerns such as patient privacy. Key obstacles include the lack of effective ontologies of mental illness, transdiagnostic approaches may be more fruitful, and digital tools require more standardized guidelines for reporting. Clinical implementation of these tools needs training for both clinicians and patients, alongside the development of hybrid care models that combine digital and traditional methods. Ethical issues, such as ensuring the privacy and confidentiality of patient data, and potential harms, must be addressed. To ensure the long-term success of these innovations, accessibility and codesign with patients are essential, allowing for equitable access and sustained engagement with digital tools. [6]

III. PROBLEM STATEMENTS AND SOLUTION

Mental health disorders impose a significant global burden, contributing substantially to disability-adjusted life years (DALYs) and leading to considerable economic and social costs. Despite the essential role of mental health in overall well-being, many countries—especially low and middle-income countries—have inadequate mental health services due to insufficient investment in infrastructure, workforce, and public health policies. Issues such as limited availability and accessibility of care, lack of awareness, and persistent stigma hinder effective treatment. While digital innovations offer great potential to address these gaps by integrating services and increasing accessibility, they present unique challenges, including the need for high-quality validation, evidence of real-world clinical outcomes, and ethical concerns like patient privacy. Additionally, the lack of standardized guidelines, effective ontologies of mental illness, and necessary training for clinicians and patients impede the implementation of digital tools. To ensure equitable access and sustained engagement with digital mental health solutions, it is crucial to address these obstacles through comprehensive strategies that combine digital and traditional methods, involve patients in codesign, and prioritize ethical considerations.

To make mental health care more accessible and to create awareness among general population about mental health, a personalized and easily accessible support system can play substantial role.

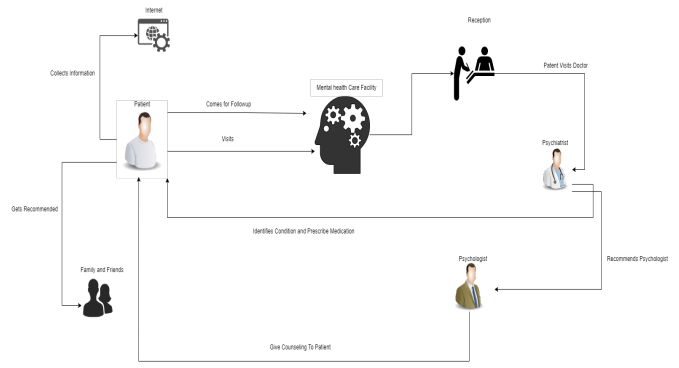


Fig. 1. Rich Picture of Existing System

A. Existing System (Rich Picture As Is)

The rich picture illustrates the process of a patient seeking mental health care. Patients get information about care facilities from family and friends or the internet. The patient visits the mental health care facility, then they go to the reception and get an appointment, then visit a doctor for an assessment. Doctors identify the condition and may prescribe medication and also recommend a psychologist. A psychologist provides therapy or counselling. Patients have to follow the same process for follow-up appointments and treatment.

B. Proposed System (To Be)

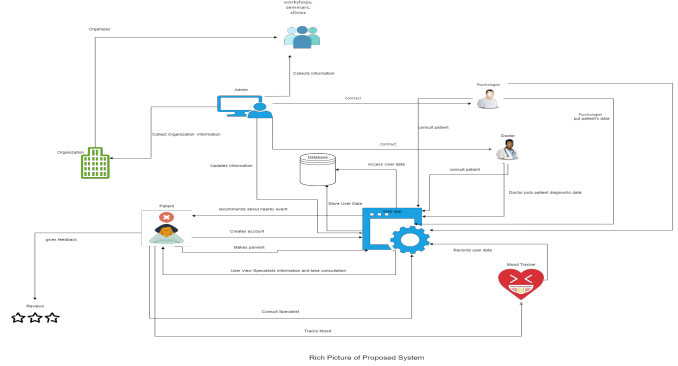
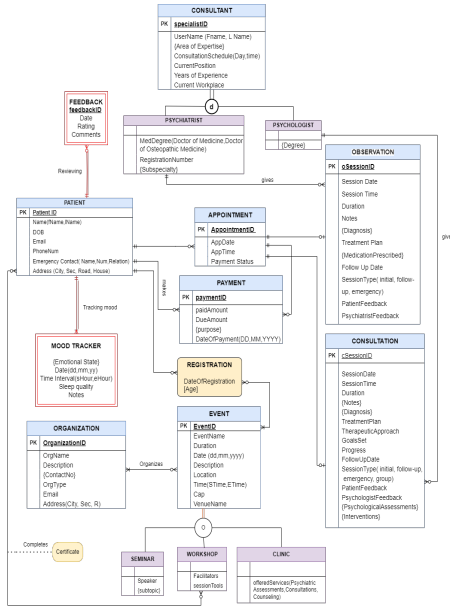


Fig. 2. Rich Picture of Proposed System

The rich picture depicts the proposed healthcare system that aims to enhance patient care through digital interaction and data management. A user can register to get mental health services. Users can view specialist information and take appointments. Users also can make payment and confirm the appointment. Doctor identifies mental health conditions and input the data on the web app. User data gets stored on the database. Doctors can prescribe medication and also suggest a psychologist. Psychologist also can input patients data. Organisation organises workshop/seminar/clinics. Admin collects data from various sources and disseminates the information to users. Users get personalised recommendations of the events nearby. Users can also use mood tracker to keep track of

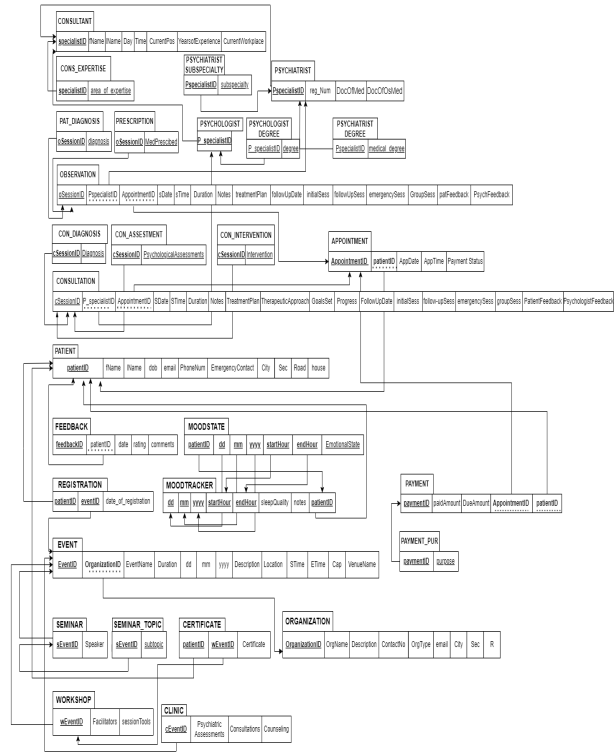
A. ERD

A. ERD



and emotional states, providing invaluable data to tailor care approaches and monitor well-being over time

B. Relational Schema



This schema represents a complex database structure designed to manage various aspects of HappyMind support system. ERD is converted into relational Schema. It includes multiple interconnected tables that manage different elements of patient care and administrative details. The CONSULTANT table stores critical information about healthcare providers, such as names, specializations, years of experience, and their current workplace. This table serves as a central repository for consultant details. The CONS-EXPERTISE table complements this by detailing the specific areas of expertise for each consultant, including any subspecialties they might have. PATIENT includes fields for names, dates of birth, email addresses, phone numbers, emergency contacts, and addresses, ensuring that all necessary personal and contact information is easily accessible. The SESSION table logs detailed entries about each session conducted by consultants, including diagnosis, medications prescribed, and other session-specific details such as the date, time, and duration of each session. This table is crucial for tracking the treatment progress over time. Appointments are managed through the APPOINTMENT table, which captures scheduling details such as appointment IDs, consultant and patient IDs, date and time, and payment status. The CONSULTATION table records details of what occurred during each consultation, including the treatment plan, therapeutic approaches used, session goals, and follow-up dates, providing a

comprehensive view of each patient's treatment journey. Multivalued attributes CON-DIAGNOSIS, CON-ASSESSMENT, and CON-INTERVENTION tables have been created, which respectively track the diagnostic information, assessment of the patient's condition, and any interventions applied during consultations. This detailed recording aids in refining treatment plans and monitoring effectiveness. FEEDBACK from patients about their sessions is captured in its specific table, which includes fields for patient IDs, date, ratings, and comments, allowing for ongoing quality control and patient satisfaction monitoring. The MOODSTATE and MOODTRACKER tables provide a dynamic view of patients' emotional states at different times. Administrative details are managed through tables like REGISTRATION, which tracks when patients register with the facility, and EVENT, which organizes information about seminars, workshops, and other events, including specifics about durations, descriptions, and organizational details. SEMINAR, WORKSHOP, and CLINIC tables are tailored to different types of sessions and events, noting details about speakers, facilitators, session tools, and the clinical focus, such as psychiatric assessments or consultations. Finally, the CERTIFICATE and ORGANIZATION tables manage certificates issued to patients or participants and details about the organizations involved in events, while the PAYMENT table handles the financial transactions associated with patient care, ensuring all payment processes are tracked and managed efficiently.

C. Normalization

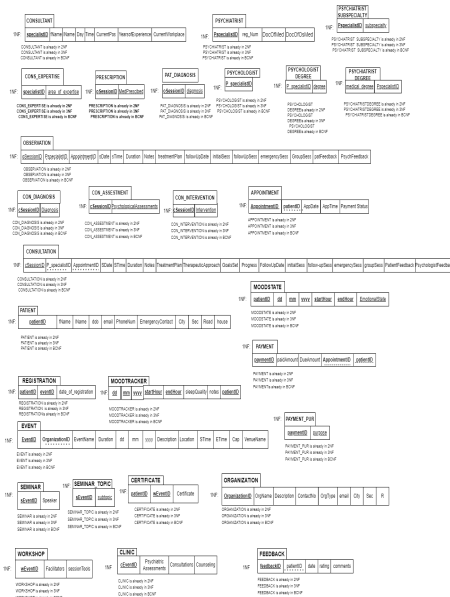


Fig. 5. Normalized Schema

Normalization is the process of organizing data to reduce redundancy and improve data integrity. The goal of normalization is to eliminate duplicate data, minimize anomalies (such as update, delete, and insert anomalies), and ensure that the

data adheres to rules known as normal forms. After designing the schema, we have gone through that for normalization, with a goal to make the relations more precise and clear. The schema is already normalized in every steps, Figure 5 shows that, the schema we have designed earlier is already normalized.

V. IMPLEMENTATION

A. Input Design

Users need registration to get services. Users are asked to input information and create an account. For example name, date of birth, email phone number are mandatory fields. Users need to set a password and finish the registration process.

Fig. 6. User Registration Form

B. Output Reports

Upon registration, user redirects to the user dashboard. In Happy Mind system patient and specialist have different dashboard.

Patient can manage appointments take consultations, see medical history, track mood, update profile and make payments from dashboard.

Fig. 7. User Dashboard

In doctors dashboard doctors can manage appointment schedule, see feedback and rating and manage emergency, and see events.

Patient can use mood tracker to keep track of emotional state and well-being. Patients can manage events and check

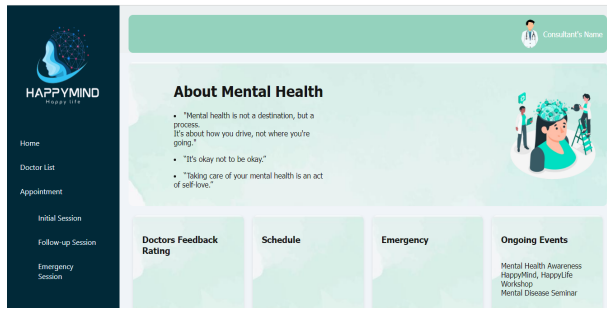


Fig. 8. Doctors Dashboard

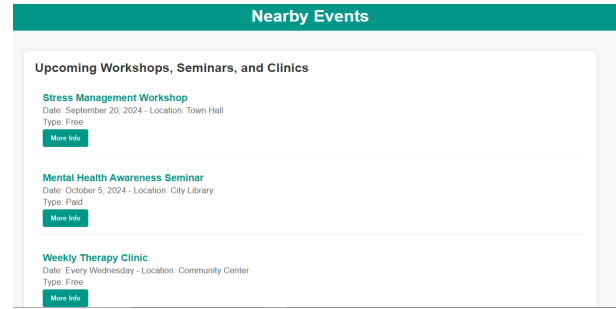


Fig. 10. Nearby Events

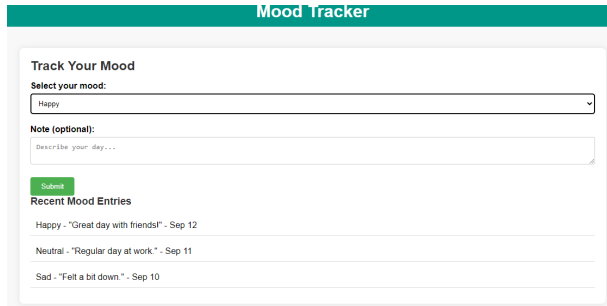


Fig. 9. Mood Tracker

location also can register for the event if its paid then patient can make payment through the system

VI. CONCLUSION

The "Happy Mind" platform presents a viable and innovative solution to the growing need for accessible, personalized, and effective mental health care. Through the integration of digital tools, the platform aims to address existing gaps in mental health care by offering a user-friendly system that enhances communication between patients and mental health professionals, offers personalized support through features such as mood tracking and specialist recommendations, and increases overall accessibility. The research objectives were successfully met by demonstrating how digital innovations can create a more user-friendly and supportive mental health care experience. However, the implementation of this system also uncovered areas for further research and development, particularly in enhancing the user experience for older adults, ensuring data privacy, and scaling the system for wider use across diverse populations

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