



REAL-TIME POSTPARTUM DEPRESSION DETECTION AND INTERVENTION

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Abstract : This ground-breaking project introduces "Wellbeing Companion," a specialized smartphone application, in an effort to address the pressing problem of postpartum depression. The software uses cutting-edge algorithms to dynamically modify the engagement model in response to user progress, in addition to personalizing daily wellbeing chores. Due to the current system's inability to fully capture the range of PPD symptoms, diagnoses were missed and treatment was put off. Conventional screening techniques entail laborious and unfeasible lengthy questionnaires, which can be particularly difficult for working mothers. An proactive approach to postpartum wellbeing is encouraged by this application, which provides a scheduled regimen for maintaining mental health.

I. INTRODUCTION

A large percentage of women experience postpartum depression (PPD), a frequent and crippling mood illness that follows childbirth. According to statistics, 1 in 8 women globally suffer from postpartum depression. Within the first few weeks or months following birth, PPD might manifest. If you don't address them, they could last for several months or even years. PPD can have serious consequences if left untreated for moms and their kids. Additionally, they may result in a weaker attachment between moms and their babies. Untreated PPD may exacerbate children's developmental deficits. Untreated PPD increases the likelihood that moms and their children may experience mental health issues. Improving early PPD detection and intervention is crucial, as the existing approaches have constraints. By addressing the existing shortcomings in PPD detection and treatment, this initiative aims to improve efficacy and accessibility. We suggest creating a mobile application that offers, Easy and accessible screening: This initiative makes use of approved instruments for self-evaluation, allowing for accurate and trustworthy data gathering. Customized self-care advice: Developing suggestions depending on each person's requirements for advancement, such as mindfulness exercises, relaxation methods, and healthful lifestyle advice.

II. LITERATURE SURVEY

A study by T. H. K. R. Prabhashwaree titled "Predicting Mothers with Postpartum Depression using Machine Learning Approaches" evaluates different machine learning algorithms to identify postpartum depression. Although it offers insightful information about various methods for detecting postpartum depression, it is deficient in specifics regarding the methodology and algorithms used. A overview of the literature on tools and techniques used in mobile app development is provided in the paper "Review on Mobile App Development: Tools and Techniques" by Rakhi Garg and Neha Koram. It provides insightful general information about creating mobile apps. Nevertheless, it is not as specialized as postpartum depression (PPD) management apps or healthcare. Random oversampling and random forest are two machine learning approaches that are used in the paper "Prediction of depression among women using random oversampling and random forest" by L. K. Xin, N. binti, and A. Rashid to accurately predict depression among women. Its shortcoming, though, is that it only addresses depression in general terms without explicitly addressing postpartum depression.

III. METHODOLOGY

1. After giving delivery, a large percentage of women are impacted by postpartum depression (PPD); data suggest that 1 in 8 women globally suffer from PPD. The goal of this project is to improve efficacy and accessibility in order to overcome the shortcomings in PPD detection and management. We suggest creating a mobile application that provides easy-to-use screening for self-evaluation, guaranteeing precise and trustworthy data gathering. The app will also offer customized self-care advice, such as mindfulness exercises, relaxation methods, and healthy living advice, based on each user's requirements and progress.
2. Requirements Gathering: In the requirements gathering phase, the emphasis will be on obtaining and evaluating the necessary elements needed to construct the application. This include figuring out what features are essential, creating an interface that is easy to use, assembling questionnaires for evaluation, resolving security issues, and gathering information on daily tasks that should be included.
3. System Design: After the requirements are established, the system design process is initiated. This means creating the architectural design of the program, which involves deciding the frameworks and design patterns to use. The system design takes performance, maintainability, and scalability into account. When creating user interfaces, the React Native framework is employed.
4. Development: Utilizing tools like VS Code, React Native, and Node.js, the development phase will entail writing code in languages like Python 3, HTML, CSS, JSX, and JavaScript. Implementing features like screening tool integration, algorithm development, and self-care suggestion user interface creation are among the tasks that need to be completed.
5. Deployment and Maintenance: Following the completion of development and testing, the software is made available to users in a live environment. Regular maintenance is required to correct any bugs, introduce new features, and guarantee that the application is up to date and secure.

IV. CONCLUSION

The app improves mother well-being and family life by addressing the critical requirement for early detection and efficient management of postpartum depression. Development, data analysis, content, and deployment are the four project modules that guarantee a comprehensive approach including psychology, technology, and user assistance. The app provides customized self-care suggestions and approved screening tools. customized assistance based on each person's requirements. The software can provide early detection, easily accessible resources, and continuous help. greatly lessen the impact of PPD and enhance maternal health.

IV. REFERENCES

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