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A Comprehensive and Modern Framework for Cloud-based Mobile Maternity Data Management

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Abstract

The pregnancy period holds great significance in a woman's life, and maternity healthcare plays a crucial role in society's overall healthcare system. However, there are various issues and limitations associated with existing services aimed at supporting pregnant women. Firstly, there is a lack of an electronic system for sharing maternity data between hospitals and clinics. The current systems do not effectively utilize web and mobile technology, and there is a lack of a comprehensive and widespread system. Most health clinics still rely on traditional approaches. Secondly, approximately 20% of pregnant women require hospitalization for varying durations due to complications such as bleeding or low placenta. Unfortunately, there is no monitoring service available at home to minimize the number of hospitalized pregnant women. Additionally, rural pregnant women, who tend to have higher poverty rates and poorer health, face additional difficulties due to limited access to doctors, hospitals, and healthcare resources. Currently, there is no monitoring system specifically designed for rural pregnant women. Utilizing mobile devices for monitoring pregnant women provides a potential solution to these problems. Mobile maternity monitoring offers an opportunity to share maternity data and monitor pregnant women at home, reducing the need for hospitalization. However, maternity monitoring through mobile devices may also give rise to other technical challenges. The first challenge pertains to the quality, availability, accessibility, security, and privacy of patients' data. The second challenge involves the limitations of mobile devices, including memory, battery life, and processor speed. This study addresses these problems through a comprehensive literature review on maternity data management, pervasive mobile healthcare systems, cloud computing, and mobile healthcare systems on cloud computing. Subsequently, a new architecture is proposed to tackle these challenges.

Keywords: Deep Learning, Feature Extraction, Conventional Machine Learning, Nail Fungus

I. Introduction

The pregnancy period is a special moment in a woman's life, and maternity healthcare plays a vital role in society's overall healthcare. However, existing services face several limitations in supporting pregnant women. The lack of an electronic system to share maternity data between hospitals and clinics is a significant problem. Current systems underutilize web and mobile technology, failing to establish a pervasive and ubiquitous system. Most health clinics still rely on traditional approaches, hindering effective data management [1].

Another problem is the high number of pregnant women who require extended hospital stays due to complications such as bleeding or low placenta. Currently, there is no monitoring service available at home to reduce hospitalization rates. Additionally, rural pregnant women, who often face higher poverty rates and limited access to healthcare resources, encounter even more difficulties in receiving adequate care. The scarcity of doctors, hospitals, and other health resources in rural areas poses significant challenges for them. Currently, there is no monitoring system specifically designed for rural pregnant women [2-4].

VI. Conclusion

In conclusion, the pregnancy period holds immense significance in a woman's life, and effective maternity healthcare plays a vital role in society's overall healthcare system. However, existing services designed to support pregnant women suffer from various limitations and shortcomings. The absence of an electronic system for sharing maternity data, underutilization of web and mobile technology, and the lack of pervasive and comprehensive systems hinder efficient healthcare delivery. Additionally, the absence of monitoring services at home contributes to a high rate of hospitalization among pregnant women, particularly those experiencing complications. Rural pregnant women face even greater challenges due to limited access to healthcare resources and higher poverty rates. Furthermore, the utilization of mobile devices for maternity monitoring introduces technical issues related to data quality, availability, accessibility, security, and privacy, as well as device limitations. To address these issues, this paper conducted a comprehensive literature review on maternity data management, pervasive mobile healthcare systems, cloud computing, and mobile healthcare systems on cloud computing. The findings highlighted the potential of leveraging mobile devices and cloud technologies to overcome existing problems in maternity healthcare. Based on these insights, a novel architecture is proposed to enhance maternity data management and support remote monitoring of pregnant women, thus reducing the need for hospitalization. By leveraging mobile technology, we can create an opportunity to share maternity data, monitor pregnant women at home, and provide more accessible and personalized care. Overall, this research endeavors to contribute to the advancement of maternity healthcare by offering comprehensive solutions that address the limitations and challenges currently faced. By embracing modern technologies, we can enhance the quality, efficiency, and accessibility of maternity healthcare services, ultimately improving the well-being of pregnant women and society as a whole.

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