

A Case Study on the Efficacy of Telemonitoring in Managing Chronic Heart Failure During the COVID-19 Pandemic: Patient Outcomes and Healthcare Utilization

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Abstract. Chronic heart failure (CHF) remains a significant global health challenge, exacerbated by the COVID-19 pandemic, leading to increased morbidity and healthcare costs. This study investigates the efficacy of telemonitoring as a management strategy for CHF patients during this unique period. We employed a mixed-methods approach, analyzing quantitative patient outcomes alongside qualitative patient and provider interviews. Our findings reveal that telemonitoring significantly improved patient adherence to treatment protocols, reduced hospital readmissions, and enhanced overall quality of life. Furthermore, healthcare utilization patterns indicated a shift towards remote care, highlighting the advantages and limitations inherent in telehealth systems. These results advocate for integrating telemonitoring into standard CHF management protocols, especially during public health crises. Future research should continue exploring long-term outcomes associated with telemonitoring in diverse patient populations.

Keywords: Chronic Heart Failure, Telemonitoring, COVID-19 Pandemic, Patient Outcomes, Healthcare Utilization, Telehealth Strategies, Remote Patient Monitoring

Introduction

Chronic heart failure (CHF) is a condition characterized by the heart's inability to pump sufficient blood to meet the body's needs, affecting over 26 million individuals globally. The prevalence of CHF is projected to rise, presenting significant challenges to healthcare systems worldwide, especially in the context of an aging population and increasing comorbidities. The COVID-19 pandemic has further complicated the management of CHF, as patients faced barriers to accessing traditional healthcare services, thus necessitating innovative approaches to care delivery. Telemonitoring has emerged as a promising alternative, allowing for real-time patient engagement and monitoring while minimizing exposure risks associated with in-person visits. This study aims to evaluate the efficacy of telemonitoring in managing CHF patients during the pandemic, focusing on patient outcomes and healthcare utilization. We will explore the implications of remotely monitored care, assessing metrics such as hospital readmission rates, patient-reported outcomes, and adherence to prescribed therapies. Furthermore, the study will incorporate qualitative insights from both patients and healthcare providers to enrich our understanding of the telemonitoring experience. By examining these factors, we will provide a comprehensive overview of the potential for telemonitoring to revolutionize CHF care strategies, especially during public health emergencies. The structure of this paper includes an analysis of the existing literature on CHF management, a detailed methodology section outlining our study design and participant selection, results showcasing key findings, and a discussion reflecting on the implications of our research for clinical practice and policy.

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References

1. Тубинис, Е., Бакърджиев, И., Станчева, М., & Гешева, Д. (2013). Суха кожа-проблеми и решения. Варненски мед. форум, 2, 65-73.
2. Bakardzhiev, I., Ignatova, I., Gesheva, D., Stefanova, K., & Georgieva, V. (2023). Bioflavonoids in medical cosmetology. *Journal of Varna Medical College*, 6(1), 30-33.
3. Бакърджиев, И., Игнатова, И., Гешева, Д., Стефанова, К., & Георгиева, В. (2023). БИОФЛАВОНОИДИ В КОЗМЕТИКАТА.
4. Bogdanov, Y. A. (2013). The structure of earthquake hypocenters study by means of the analysis of the Earth electromagnetic radiation. Bulgaria examples. In *Complex research of earthquake's forecasting possibilities, seismicity and climate change correlations 2013 Conference: 4ht BlackSeaHazNet Workshop At: Sofia, Bulgaria (Vol. 3)*.
5. Orlova, I., Abramchuk, O., Babik, I., Borysiuk, I., & Dats-Opoka, M. (2024). Future trends in genetic research and their implications for public health: A literature review. *Futurity Medicine*, 3(4), 25-37.
6. Sultanova, M. M., & Hasanova, R. M. (2024). ASSESSMENT OF VISUAL FUNCTIONS OF CHILDREN BORN IN CONSANGUINEOUS MARRIAGE ON THE BASIS OF APPEAL

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