



MediEase: A Medicine Routine Assistant for Your medication scheduling and Medicine Monitoring

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Abstract— As personalized and accessible healthcare becomes increasingly crucial, the need for innovative and economical medical support has risen sharply. "MediEase" stands out as a leading solution in this field, offering comprehensive scheduling and reminder services for medications. The evolution of healthcare has prioritized both accessibility and personalization to effectively address various medical needs. "MediEase" delivers a distinctive approach through its intelligent mobile application, connects medicine management with tailored assistance. MediEase allows users to plan their medication schedules and receive timely notifications for their doses, ensuring that no medication is overlooked. This paper explores the role of MediEase in delivering accessible, affordable, and compassionate medical assistance while evaluating its impact on enhancing users' healthcare experiences.

In a world where most services are merely a click away, managing medication intake should also be simple and efficient. MediEase aids users in monitoring their medication schedules, alleviating the stress associated with potentially missing doses. The study investigates the primary aim of MediEase, considering how it acts as a link between the management of medical resources and individual health needs. It highlights how MediEase transforms medicine management by integrating affordability, reliability, and empathy into its services. The approach introduced by MediEase has the potential to change how individuals view medicine management, particularly during challenging times when caring for loved ones. By utilizing MediEase, users can focus on the well-being of their family members without worrying about missed doses, which makes healthcare more manageable and reduces stress.

Index Terms— Personalized healthcare, Medicine Scheduling, Medication Reminder, Bridging the gap, Mobile Application, Timely Alert, User friendly Interface, Convenient healthcare



Fig 1:Features of app

I. INTRODUCTION

The healthcare sector, continuously evolving, transcends traditional barriers by embracing groundbreaking advancements

that revolutionize accessibility and improve the standards of care. MediEase represents a significant milestone in the evolution of medical management, transforming the traditional standards of healthcare. It goes beyond being just a reminder tool; it offers a holistic and compassionate approach to healthcare, ensuring that users not only get notifications about their medications but also receive guidance throughout their healthcare journeys.

MediEase does not limit itself to mere scheduling services; instead, it extends a compassionate hand that recognizes the manifold challenges individuals face – encompassing emotional, economic, and physical strains – during their medical journeys. Focusing on prompt medication notifications and ease of use, MediEase strives to streamline healthcare management, making it accessible to everyone in society.

The shifting dynamics within the healthcare landscape have catalyzed the need for innovations finely tuned to individual needs. Accepting these advancements holds the potential to create a more patient-centered, efficient healthcare system that emphasizes individualized care, preventive care, and better overall health outcomes [1].

MediEase transcends the status of a simple application; it epitomizes the embodiment of compassionate care, delivered directly to users, with the explicit goal of alleviating the burdens individuals face while navigating the complexities of their medical schedules.

MediEase embodies the core principles of patient centered healthcare, recognizing that medical assistance extends well beyond mere reminders for medication.

II. LITERATURE REVIEW

The evolving landscape of healthcare services has witnessed a significant shift towards accessibility, convenience, and personalized care. MediEase stands out as a groundbreaking solution, transforming the approach to medication management by integrating timely reminders, easy accessibility, and smooth service, all provided directly to users. A thorough review of literature in this domain underscores the importance of such advancements in enhancing healthcare experiences.

a) Patient-Centered Care and Personalized Assistance:

Personalized healthcare is gaining prominence as an essential aspect of modern medical services. The move towards personalized care has demonstrated enhancements in patient satisfaction and adherence to treatment plans. MediEase plays a pivotal role in providing customized medication schedules, catering to each user's unique needs and ensuring that no dose is missed. Patient-centeredness was defined as "Healthcare that establishes a partnership among practitioners, patients, and their families...to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care." [2]. There are proponents of other terms and concepts that seem similar to patient-centered care, but, depending on the user, may be defined differently. These include "people-centered care" (see: <https://healthstandards.org/generalupdates/people-vs-patient-centred-care-whats-difference/>), "person-centered care" [3], and "person focused care" [4].

b) Accessibility and Convenience in Healthcare Services:

According to the latest report of National Healthcare Quality and Disparities Report [Internet] 2021, the demanding situations people face in gaining access to nice health-care due to escalating prices and logistical limitations [5]. Recent healthcare studies highlight a significant obstacle individuals encounter: keeping up with their medication schedules due to forgetfulness and hectic lifestyles. MediEase addresses this issue by offering a convenient mobile application that sends timely reminders, making it easier for users to adhere to their prescribed medication routine.

c) Quality Standards and Reliable Reminders:

Quality healthcare systems value reliability and consistency. MediEase guarantees that users receive precise and timely notifications for their medications, promoting a sense of trust and dependability. Its design emphasizes the user experience, enabling effortless navigation and efficient health management without added stress. In a survey, participants were split into two groups: the intervention group, which got daily reminders about their medication, and the control group, which received no notifications. An evaluation call was conducted to assess the results after eight days.

Data were gathered from 763 participants in the intervention group and 435 in the control group. After receiving SMS reminders, participants in the intervention group saw a 78.8% reduction in missed doses, while the control group experienced a 46.4% decrease. Additionally, missed doses decreased by 90.1% in the intervention group, while the control group experienced a reduction of 61.1%. [5][6]

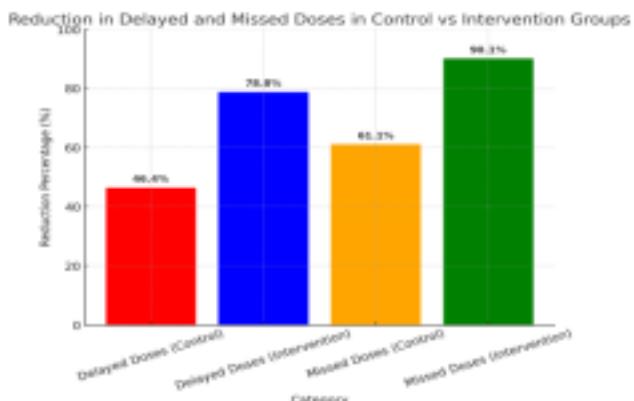


Fig 2: Reduction in delayed and missed doses in control vs intervention Groups

d) Transformational Impact on Healthcare Experiences:

MediEase's introduction into the modern healthcare ecosystem marks a significant and transformative advancement in how individuals manage their daily medication routines. By providing a user-friendly, reliable, and intelligently designed solution for medication management, MediEase empowers users to take proactive control over their health and well-being. The

application not only simplifies the process of scheduling and taking medications but also ensures consistency through timely reminders, which are crucial in improving adherence and avoiding missed doses.

With its intuitive interface, customizable alert system, and support for multilingual communication, MediEase caters to a diverse audience, including elderly patients, individuals with chronic conditions, and busy professionals who may otherwise struggle to keep up with complex medication regimens. Integrating technology into healthcare settings fosters a culture of accountability and responsibility among patients, leading to improved treatment outcomes, decreased hospital admissions, and better public health.

Supporting the relevance of such digital interventions, eleven published randomized controlled trials conducted between the years 1999 and 2009 have provided substantial evidence regarding the effectiveness of reminder-based systems. These studies compared medication adherence between groups who received regular reminders and those who did not. Adherence was measured by evaluating the number of doses taken against the number prescribed within a defined period. The meta-analysis of these trials demonstrated a statistically significant improvement in adherence among patients receiving reminder interventions, underlining the importance of structured and consistent communication in health management [7].

In conclusion, MediEase represents more than just a mobile application—it signifies a shift toward smarter, patient-centric healthcare delivery. Through its accessible features and evidence-backed functionality, it holds the potential to revolutionize how medication adherence is approached, ultimately contributing to more efficient healthcare systems and healthier lives.

The meta-analysis indicated a statistically significant rise in adherence among groups using reminder interventions compared to controls (66.61% versus 54.71%, 95% CI for mean: 0.8% to 22.4%).

Self-reported and electronically monitored adherence rates did not significantly differ (68.04% versus 63.67%, $P = 1.0$). Out of the eleven studies, eight demonstrated a statistically significant improvement in adherence for at least one of the reminder intervention groups when compared to the control groups that did not receive reminders. [8]

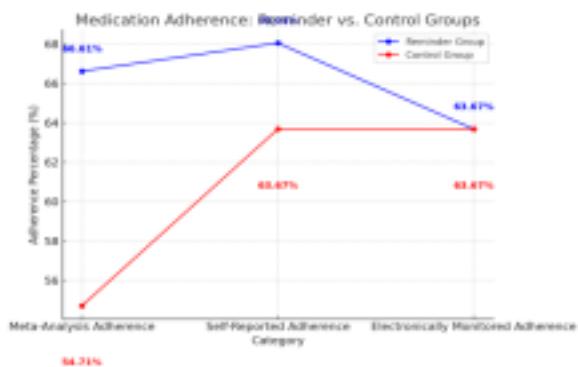


Fig 3: line graph comparison of reminder vs Control Groups

III. METHODOLOGY

A. Research Design:

For this study, a mixed-methods approach will be employed to comprehensively evaluate the effectiveness and usability of MediEase as a mobile application for medicine scheduling and reminders. The research design will integrate both qualitative and quantitative methods to gather data from multiple perspectives. The initial phase involved understanding the practical implementation of the application and identifying the necessary resources. A critical challenge was ensuring user trust, given that the application deals with sensitive health-related information. Additionally, understanding user preferences regarding medication reminders played a key role in shaping the application's features.

B. Data Collection:

The data collection process required prolonged investigation to evaluate user requirements for medication scheduling applications. The study sought to gather opinions on the utility and effectiveness of MediEase in promoting adherence to medication routines.

1) Quantitative Data:

- Surveys:** Structured questionnaires will be distributed among users and medical staff to gather quantitative data on satisfaction levels, service efficiency, ease of use, and perceived benefits of utilizing Medi-Ease.
- User Metrics:** The analytics software will track Serve-Ease website user interactions alongside service requests alongside response times and geographical user regions.

2) Qualitative Data:

- Interviews and Focus Groups:** In-depth interviews and focus groups will be conducted with users to understand their experiences, challenges, and suggestions for improvement.
- Observations:** Direct observations of user interactions with the app will be recorded to gain insights into the overall usability and interface effectiveness.

C. Data Analysis:

The obtained information will be carefully examined to assess how well the application works in improving medication adherence and user satisfaction.

1) Quantitative Analysis:

Statistical analysis will be applied to survey responses and user metrics to derive quantitative insights. Descriptive statistics, correlation analysis, and regression analysis will be utilized to identify patterns and relationships between app usage and adherence rates.

2) Qualitative Analysis:

Thematic analysis will be performed on interview transcripts and observational notes to identify emerging themes related to user experiences, challenges, and suggestions for improving the application.

C. Ethical Considerations:

- All participants will be fully informed about the study's purpose, confidentiality, and voluntary participation rights.
- Participants' data will be kept confidential, and their identities will remain anonymous in all research findings.
- Informed consent will be obtained from all participants prior to data collection.

D. Limitations:

- The generalizability of the study may be restricted to the specific demographics and regions represented in the sample.
- Reliance on self-reported data from users might introduce response bias.
- The investigation fails to measure external elements that influence patients' adherence to medications including socioeconomic situations and health literacy levels.

E. Deployment:

1. User-Friendly Interface:

- The mobile application development places equal importance on designing an easy-to-use interface that brings users a smooth interaction experience.
- The app layout will be simple and easy to navigate, catering to users across various age groups.

2. Responsive Design:

- During development MediEase will receive responsive design capabilities which will make it work well on a variety of mobile devices as well as smartphones and tablets.
- This adaptability is crucial for reaching a broader user base and accommodating varying technological preferences.

V. RESULT

The introduction of MediEase into the healthcare environment has led to significant positive outcomes in the way patients manage their medication schedules. The application has empowered users by placing them at the center of healthcare decision-making, allowing greater autonomy and engagement in their treatment routines. As a result of its timely and dependable reminders, patients have demonstrated improved medication adherence and a noticeable reduction in missed doses. The application reduces mental stress by streamlining the process of remembering medication schedules that become complicated during sick or treatment periods. MediEase has transformed digital assistance into a compassionate and accessible service, offering prompt alerts and reassurance during critical moments. Its user-friendly design and personalized scheduling capabilities have contributed to more efficient, affordable, and patient-centric healthcare delivery. Beyond its memory system capabilities the application functions as a trusted reliable system that demonstrates digital advancement to build confidence.

IV. CONCLUSIONS

MediEase, a beacon in healthcare, redefines access by bridging medical assistance and personalized care. Healthcare provides operational changes that center on patient needs in healthcare delivery. Fundamental to this transformation is the increasing recognition of patients' role in healthcare delivery and design. Medicine scheduling applications, as a cornerstone of healthcare services, are undergoing major developments to support the active involvement of patients. By using the mobile application as a medium, patients are given more freedom in decision-making about their preferences for medicine schedules and have improved access. The paper examines how digitalization transformed assistance services into affordable and high-quality service delivery for users. Offering an intuitive scheduling system, MediEase connects individuals with personalized medicine reminders, reshaping healthcare experiences. Its prompt accessibility to scheduled alerts eases concerns during critical times, transforming perceptions and offering invaluable support. This application serves both as a functional tool to provide medicine reminders and it demonstrates compassionate care which improves medical access experiences for everyone who needs assistance. This research underscores MediEase's essence as more than just a service but as a catalyst for change in how people perceive and approach medicine adherence during times of need. It highlights the crucial importance of timely and reliable reminders, especially during moments when patients are managing their health or undergoing medical treatments. MediEase's capability to alleviate the burden of remembering medicine schedules and reduce the anxiety associated with missing doses underscores its invaluable role as a support system.

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