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MEDI-REM, A MEDICINE REMINDER APP

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ABSTRACT

It is a frequent observation that people give more preference to their work and other material things than taking care of their health. If smart, working adults can forget taking proper medications, the situation can only be worse for our parents and grandparents. This paper focuses on the development of a mobile application to help to provide an effective health care system. This is an Android-based application in which an automatic alarm ringing system is implemented. Patients need not remember their medicine dosage timings as they can set an alarm on their dosage timings. The alarm can be set for multiple medicines and timings including date, time and medicine description.

Keywords: - Reminder System, Healthcare, Old People, Medicine Reminder, Android Application

1. INTRODUCTION

Healthcare is the basic need of human being. The category of patients involves all human beings housewives, businessmen, students, teachers, service men and also all of them have a busy hectic schedule. Today's life is full of responsibilities and stress. So, people are prone to diseases of different types and it is one's own duty to make themselves fit and healthy. Many health maintenance organizations, health practitioners and medical researchers have realized that increased use of patient reminders can significantly increase the treatment of chronic illness and delivery of medical services to the patients who need it.

So we are introducing an Android application whose objective is to remind the patients of their dosage timings through Alarm Ringing system so that they can stay fit and healthy. This application focusses on the people who forget to take medicines on time. It allows users to set an alarm along with the fields of date, time and medicine description which will allow them to set alarm for multiple medicines at different time intervals. The notification system will send a notification after setting an alarm. The user can activate or deactivate the notification accordingly.

2. PROBLEM FORMULATION

The remarkable problem is that patients forget to take the proper medications in the proper proportion and at the proper time.

Drug adherence, which refers to the degree or extent to which a patient takes the right medicine at the right time according to a doctor's prescription, has lately come up as a serious issue because numerous studies have reported that non-adherence may critically affect the patient, thereby raising medical costs. medicine non-adherence is a common, complex, and expensive problem that contributes to poor treatment outcomes and consumes health care resources.

Furthermore, some patients are so occupied with their day-to-day activities that they just forget to take their medications. This is particularly true for old patients who have to take more than one medicine at more than one time in a day.

3. LITERATURE REVIEW

Several medication reminder systems have been built upon different concepts and on different platforms.

MedsLog, an application only for iPhone users, is a really complex application as compared to others. The users need to spend much more time with the software to understand its functionalities adequately. The main problem with the system is it has a "consumed by" box where a user is supposed to fill his username in the given space. Still, the system shows "no people". In contrast, the proposed system is really more us er-friendly because it's made for people of all age groups. So, one can use the time in using the system rather than wasting the time in understanding the software. The users can manage their profile without any problem.

My MediHealth is a medicine reminder system built specifically for children. It runs on smart phones and provides user interface for managing prescription schedules and alerts for reminding patients about the type and time of the medication according to the prescribed medicine schedule.

Medsy is also an app that tries to give a drug reminding system but it's loaded with lesser features. If the user is supposed to take medication three times a day yet this app doesn't allow them to set an alarm accordingly. But in our work, we have tried to overcome these disadvantages by allowing users to set multiple alarms and notifications.

4. METHODOLOGY

Medication reminders help in decreasing medication dispensing errors and wrong dosages. The proposed system is based on Android Operating system which will remind the users to take medicines on time through notification and automatic alarm ringing system.

Set Alarm module- It helps in reminding about the medicines. User can add details of his dosage schedules. Using the date field one can enter the starting and ending dates between which, he has to take medicines. The time field shows the time of dosage and on that time the alarm will get rung. The user can add the description of the medicine, including name, purpose and other related description. All the information will be saved in the database. This makes any time availability of the patients' records. They can change the ringtone of the alarm from the r ingtones stored in the devices.

Get Notification module: Once the alarm is set then the user gets the notification. The users can activate or deactivate this accordingly. If he does not require the notification, he can turn off it.

1. storing the doctor's prescription - The user has to fill the details of doctor's prescription in the form and then that data will be stored in the MongoDB

2. Adding Reminders for taking medicine - The user is verified firstly by using Google authentication, then user fills the form which is then used to add the reminders in the user's calendar according to the time slot and recurrence specified in the form

3. Showing the list of medicines with their dosage at prescribed time - The user gets a notification in his device at the time of taking a medicine, and that notification contains the list of medicines to be taken along with their respective dosage

To configure the app, the user has to enter the following details:

A. Name of the Patient (helpful for future prescriptions)

B. Age of the Patient (helpful for future prescriptions)

C. Prescription Duration - the duration for which the patient has to take the medicine

D. Number of Medicines - field is mandatory to generate further option

E. Names of the Medicines - to keep track of what medicines are taken by the user and to remind the user later of the medicine to take

F. Dosage Time - the time at which to remind the user, whether in morning, evening, night or a combination of the three

G. Dosage Quantity - the quantity of dosage to be taken for each medicine

Healthcare Module: In it, the patients can read different posts, articles, new technology in medical sciences, tips and other information of staying fit because staying fit is important for a good social life , becoming a good wellbeing , looking and feeling better, and a happy healthy life. Patients can get knowledge of new treatments.
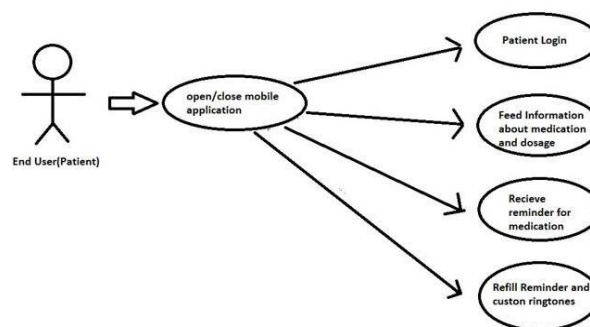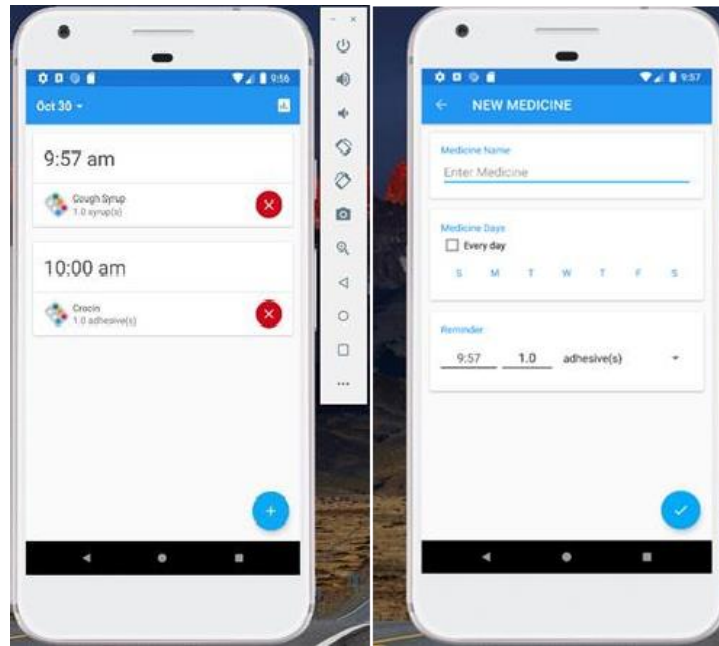

FIgure 1: Use-Case Diagram

5. RESULT DISCUSSIONS

This application is mostly targeted at an elderly audience with a focus on accessibility and usability. The user will be able to enter their medical information and prescriptions and the application will send a push notification when it is time for the user to take their inputted medication. We have kept in mind the common isolation of senior citizens while creating Medi-Rem.

The application gives reliable reminders, good user interface, nice user experience and it supports many new features supporting medication adherence. We made a survey of 100 people including people of all ages.

6. CONCLUSION

Medication non-adherence reduces the effectiveness of a treatment and imposes a financial burden on health care systems. The patients will get the schedule of medicine in-take time with medicine description, starting and ending date of medicine, notification through message or email, automatic alarm ringing system and navigation system. The scheduled reminder will not suggest any kind of medicine which is not prescribed by the doctor that will assure the safety of the patient and also will avoid wrong dosages. The patients can also search doctors disease wise (depending upon the specialization of the doctor), which provides easy searching facility to the users and saves the time.

The patients will get the schedule of medicine in-take time with medicine image, starting and automatic alarm ringing system and doctor's contact details. The scheduled reminder will not suggest any kind of medicine which is not prescribed by the doctor that will assure the safety of the patient and also will avoid wrong dosages.

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