Personal Assistance for seniors who are self-reliant

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Introduction:

According to the census 2021, India has 138 million older people constituting 16.9% of overall population. The largest consumers of healthcare dollars, resources, and medications. Yet, over 55% of them do not take their medications properly.

The current common techniques used in market for the reminder includes the normal alarm with a pill box. But this does not check for overdose and wrong dosage among the patients and doesn't notify the user which medicine is depleted.

It only uses a clock, which on passage of a set time generates an alarm. Moreover the timely alerting for the re-filling of the pill box to user is also absent resulting often in breaks in the course of therapy. The sensing of slots of the pill box can be done by both Load Sensing methodology and by Light based sensing.
The advantages of the slot based sensing is that individual moment sensing is possible for detecting over dosage problems and incorrect dosage issues. The survey for various modes of sensing the slots has been performed both analytically and practically and comparisons between the modes have been performed.
Different methodologies and platforms have been used to create a number of medical treatment systems.Numerous studies in these sectors have evolved as a result of the rising popularity of remote healthcare and medical apps.
Several medication reminder systems have been introduced as part of it.
The researchers in the study developed a prototype of an at-home healthcare and medication management system based on interactive and intelligent packaging and an intelligent medicine box. Similar system is proposed in, where a medicine reminder app that manages prescription schedules and alerts for reminding patients about the type and time of the medication according to the prescribed medicine schedule. Despite receiving written and verbal information, 27% of older people discharged from hospital after heart failure were classed as non-adherent within 30 days. The majority remembered receiving oral information, but less than one in four recalled any written information they were given. Almost one in ten did not remember receiving any information at all.30 minutes after taking their medications, seniors can't remember if they took them, and thus take them again. Half the patients surveyed could not recall

the dose of their medication and nearly two-thirds did not know what time of day to take them.

As pills have taken such an important role in everyday life there has been the past years an increase in the number of medical neglect cases related to incorrect medication given to patients, such as the case of the nurse who gave a patient a paralytic instead of an antacid that was prescribed by the doctor, causing the patient's death. After seeing so many of these cases it is evidently crucial that the correct pill is taken by the correct person at the correct time, otherwise taking an incorrect one or not taking one at all may expose the patient to several dangerous situations, ranging from mild health issues up to death.

Literature Survey:

This chapter's goal is to evaluate existing research on personal support for independent seniors.The major current efforts on this topic are presented in this chapter.

1.**Sultan Ahamad** published on Prince Sattam bin Abdulaziz University

There are many people around us who are the victims of chronic disease. Most of them suffer from dementia. Some people overlook to take care of their health. Because of the lack of an expert system, people are forced to submit to frequent health related problems. By analyzing the data, an internet of things (IoT) based reminder system has been developed. It is designed to assist the patient who forgets to take medicine. The proposed system consists of an IoT enabled device and an android application. It mainly focuses on dementia patient. But it is beneficial for all. Patients will no longer have to worry about daily medication. The application will send a notification when it's time to take medicine. The mobile application is used for keeping the record in medicine details and reminding the schedule of medicine. We have used the IoT enabled Arduino device for monitoring the whole system. The device can sense whether a patient has taken medicine or not with the help of the infrared (IR) sensor.

2. **M. Mehala** and **J. Viji Gripsy**

The patients can leave taking medicines to just our app.whenever the time f or the medicine is up, they will be notified and they only have to take their prescriptions during that time, and no other time. If implemented properly, this

will drastically decrease overdose of medicines due to forgetfulness and the patients will also be reminded to take their medicines.he Medicine update framework will have one obligation and that is reminding the client that he is expected to take the prescription. We are attempting to ensure that the client always remembers to take the prescription and thus we do the update in three different ways. One is that we have a visual marker which would be the light. We additionally felt that if an individual isn't sitting near pill box he may not see the lights henceforth we have likewise included a ringer which will give a sound-related sign that the drug should be taken. For the situation that patient is outside, we have a versatile update application which will remind utilizing portable notices for that time. The versatile application can be introduced in the android gadgets. It will add repeating occasions to the portable's schedule and will caution the client when he needs to take the drug with the rundown of meds and its endorsed measurement.

3. **Ifeoluwa Jenyo** And **Elizabeth Amusan**

The Android based medication reminder and adherence system is a system in which an alarm and notification system is implemented and also provides a platform for doctors, healthcare givers and patients' interaction. Patients can set a customized alarm tone in their local language or select from a list of default tones. The application allows specialists to automatically see the list of patients connected to them and their chat messages. Specialist can send health tips and other broadcast messages to his entire patients or fix an appointment date with any of their patients at will. Agile software engineering process was used for the development of the system. The front end was implemented using android studio and the back end was designed using firebase frame work. The android based application runs on mobile devices, such as smart phones, tablet computers and PDAs. The application was implemented and tested on the mobile phones of several patients, healthcare givers and Computer programmers, it was found to be very helpful in care management and easing travelling stress and fatigue and the reminder system assisted in medication adherence. Survey results shows 100% likes for the system's reminder and notification module, 80% likes for the chart module, another 80% likes for the search for specialist module while 70% likes were recorded for broadcast messages. This paper presents the development of the reminder and adherence system. The application is light weight, very easy to use and support medication adherence. The application will assist patients with chronic illness like Cancer, Diabetes, Asthma.

4. Samir V.Zanjala and Girish. R. Talmale

A Medicine Dose Controller of Ubiquitous Home Environment (2009), Home automation and wireless sensor network which have enhancing the quality of life by providing security, information and comfort. Here had discuss a centric home server with three main roles: use of existing Interfaces on registered systems for remote monitoring and Control, serving the surrounding system as a data gateway and Providing content adaptive user interfaces enhanced by Belongings of end-user client devices, the ubipill device had implemented to remind people for elder and for monitoring purposes ubipill and home server have been design to reliably monitor the medicine box activity by web browser.
Kliem et al5 proposed Security and communication architecture for networked medical devices in mobility- aware eHealth environments (2012), Telemedicine concept is cost efficient and lo cation autonomous monitoring system, the suitable and secured medical data can be transferred with different devices with attention towards security and privacy issue. Emergency situations need on the flutter network integration and data transmission fluctuating from domains like patients home, medical practices, ambulances and, hospitals, where each domain may parallel to a different authority so, mobility aware approach allowing out of the box medical device integration and authentication, and simultaneously fulfilling the typical security and privacy requirements of e-health environments.

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