

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 health care dollars, resources, and medications. Yet, over 55% of them do not properly take their medications. Studies indicate up to 30% of all hospital readmissions are due to medication non-adherence .

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.

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.

Several medical treatment systems have been built using different approaches and platforms. With the growing popularity of remote healthcare and medical apps, a lot of researches in these fields have been evolved. As part of that, several medication reminder systems have been introduced. In the researchers proposed a prototype of an in-home medication management and healthcare system based on intelligent and interactive packaging and 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:

The purpose of this chapter to review the previous researcher on personal assistance for seniors who are self-reliant. This chapter will present the main recent works on this.

There is a rising concern in designing options for elderlies residing in a society with an increased population ageing. IoT is a revolutionary phenomenon that transforms our life entirely as well as aims to revolutionize current healthcare into a more individualized, precautionary and inclusive approach to treatment. In order to integrate these two main problems, this research provides an IoT-ready approaches for elderly living treatment that can track and record critical details for patients in emergencies and include protocols for activating alarms. The strong low / low-cost / wireless capabilities make this approach into a secure and convenient wristband, perfect for anywhere and anywhere.

1. MARIA GABRIELLA MELCHOIRE Published on "IRCCS INRCA-National Institute of Health and Science on Ageing...2022". Caring help is essential for carrying out everyday activities when older persons age alone and become weak with functional limitations. The current study set out to examine the role and features of privately employed Personal Care Assistants (PCAs) who provide care for elderly people in Italy in light of the family's decreasing capacity to provide care and the under-resourcing of governmental services. In the "Inclusive ageing in place" (IN-AGE) project, 120 qualitative interviews with elderly persons in their homes in the Italian regions of Lombardy, Marche, and Calabria were conducted in 2019. Along with some basic quantifications of assertions, a content analysis was done. Results revealed that PCAs were helpful in 27 situations, mostly when older citizens' health difficulties were raised.

2. GUNTHER EYSENBACH Published on "JMIR M health U health 2021".

With the benefits of hands-free and eyes-free engagement modalities to manage requests, voice assistants based on smart speakers promise to support the elderly population. The advantages of this kind of gadget are seen differently by older persons, although little is known about this. The ease of a speech-based engagement contributed to the favourable first reception to voice assistants. Particularly, it was common to finish an engagement with a voice assistant by expressing gratitude or providing criticism on the quality of the responses. Asking queries about health care and streaming music were the two main themes of orders given during the first conversation. However, the majority of the subsequent responses were negative due to the challenges in creating a structured language for a command.

3. Mithra Venkatesan published on 2021 IEEE Pune Section International Conference (Pune Con)". The robot for the elderly discussed in this essay is made up of numerous electrical components that can be changed in the future and utilised to create new robotic appliances that may be used in a domestic setting. A personal assistant robot called "Robo care for Elderly" is a prototype that will one day be utilized to care for and accompany the elderly. The Raspberry Pi microcomputer, an ultrasonic sensor, a PIR sensor, a temperature sensor, LEDs, an integrated Bluetooth module, a Dc motor, a servo motor, speakers, etc. are all part of this system. The major goal of the created work is to create a personal assistant robot prototype that is affordable and usable in every home, improving the usage of technology

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