

LITERATURE SURVEY

PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF-RELIANT

Date	25 SEPTEMBER - 2022
Team ID	PNT2022TMID39145
Project Name	Personal Assistance For Seniors Who Are Self-Reliant
Maximum Marks	4 Marks

LITERATURE SURVEY:

Different papers related to medication reminder were also taken into consideration. “Automatic Pill Dispenser” In this paper, a device consisting of no interference of human. This system makes use of the concept of rotating compartments in circular step wise motion using stepper motor which is used to store the pills. It also purvey built in alarming system with the device consisting of LED and Buzzer to indicate the time of medication. But the main disadvantage of this system is, it needs manual handling of system. Also they have used smartphone, which is mostly not used by elderly people [3] In “Pill Dispenser with alarm Via Smart phone notification” system, proposed a dispenser consisting of alarm system which helps to get alert in the form of notification on smartphones. They have used the available technology to send notification on the smartphone using instapush application. After receiving the notification user needs to press the dispenser button which is located at pill dispenser unit. But in this system, user needs to push the button on the dispensing unit which basically requires energy. Moreover it makes use of smartphone which is not used by many elderly people [4]. “The Autonomous pill dispenser” The healthcare will create medications schedule using android app and loads medication in device. At prescribed time, patient receives text message notification to take the pills. Android app sends signals to device via Bluetooth. Patient needs to flip the unit so that one pill gets trapped in tip of the cone and using vibrator it gets dispensed. So it requires following particular steps for dispensing of medicines which is not easy task for aged people and disabled people [5]

Also there are several patents published for various types of medication dispensing devices. A brief summary of the products proposed by each patent is included below: Timed Medicine Dispenser: This Product is basically a timed based dispenser which will give notification to the user about the medication. In the dispenser unit, the pills need to be pre-separated first in order to get correct dosage [14]

Medicine reminder and dispenser: This device consist of 28 compartments having slideable plate which supports for dispensing of medicines which are arranged in forms of rows and columns [16]. Med Center Medication Reminder: This device organizes a months worth of medication with 4 daily alarms. This consist idea of color-coding and verbal reminders, for helping people which have complicated medication routines. The medicines have to be pre-separated and kept in the appropriate pillbox [17]. Med Time: This product consist of a disk that rotates having several compartments consisting of pills separated within different compartments. It also contains alarm system and a timer, which can provide sound at particular schedule. For the overall operation the dosages must be separately put in the compartments which require the help of others [18]

Several online articles discussed about the hazards and problems people are facing now a days regarding their medication. One thing that was evident in these writings was that, following the doctor's prescriptions timely has become a big challenge for people now a days.

EXISTING SOLUTION:

S.NO	PROJECT	METHODOLOGY	LIMITATIONS
1	The Autonomous pill dispenser	Android app sends signals to device via Bluetooth. Patient needs to flip the unit so that one pill gets trapped in tip of the cone and using vibrator it gets dispensed	Elderly people find this difficult to flip the device and less likely to use android phone
2	Automatic Pill Dispenser	Makes use of the concept of rotating compartments in circular step wise motion using stepper motor which is used to store the pills. Notification on smartphone is provided	Smartphone s are less likely used by elderly people.
3	Pill Dispenser with alarm Via Smart phone notification	They have used the available technology to send notification on the smartphone using instapush application. After receiving the notification user needs to press the dispenser button which is located at pill dispenser unit	Smartphone rarely used by elderly patients. Cannot used by blind people, as it need to press the button on dispensing unit.
4	Timed Medicine Dispenser(Product)	Gives notification about medication . It has built in alarm system	In dispenser unit, the pills need to be pre-separated first in order to get correct dosage. Cannot be used by deaf person. 5
5	Medication Reminder with Medicine Dispenser	Prescription is scanned using image	Pi camera gives error sometimes and need

		processing. Raspberry pi B+ module is used . No manual setting of dosage of medicine is needed. As system is set automatically can be used by anyone including disabled people as well.	to reboot the processor
--	--	--	-------------------------

PROPOSED SYSTEM:

Inputs to the app include the capturing the number of pills,size ,color and when to take the pills in memory. Adding to this, the time and date for the dosage is loaded too. The system helps the user to set the time of dosage which will help to dispense multiple medicine at particular schedule. The notifications are intended to remind the user about medicine in **voice commands**. Get an alert that my medication is low.Looking up reviews on certain medicine before taking them. This system is useful not only for the normal people but also for disabled people.

REFERENCES :

[1] Kovac M “E-Health Demystified: An E-Government Showcase Computer”, vol.47, no.10, pp.34,42, Oct. 2014..

[2] Beena Jimmy and Jimmy Jose, “Patient Medication Adherence: Measures in Daily Practice”, Oman medical Journal.

[3] Mrityunjaya D H, Kartik J Uttarkar, Teja B, Kotresh Hiremath, ” Automatic Pill Dispenser”, International Journal of Advanced Research in Computer and Communication Engineering ISO 3297:2007 Certified Vol. 5, Issue 7, July2016

[4] Nurmiza Binti Othman and Ong Pek Ek, “Pill Dispenser with Alarm Via Smart Phone Notification”, 2016 IEEE 5th Global Conference on Consumer Electronics.

[5] Shaantam Chawla Mechatronics Research Laboratory Academy for Technology and Computer Science Hackensack, NJ 07601 USA,“The Autonomous Pill Dispenser:

Mechanizing the Delivery of Tablet Medication”, 7th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON) IEEE 2016

[6] R.S.H. Istepanian, E. Jovanov, Y.T. Zhang, “Guest Editorial, Introduction to the Special Section on M-Health: Beyond Seamless Mobility and Global Wireless Health-Care Connectivity,” IEEE Transactions on Information Technology in Biomedicine, Dec. 2004, 8(4): 405 - 414.

[7] D. Raskovic, T. Martin, E. Jovanov, “Medical Monitoring Applications for Wearable Computing,” The Computer Journal, July 2004, 47(4): 495-504.

[8] L.E. Burke, M.A. Styn, S.M. Sereika, M.B. Conroy, L. Ye, K. Glanz, M. A. Sevick, L. J. Ewing, “Using mHealth technology to enhance selfmonitoring for weight loss: a randomized trial”, American Journal of Preventive Medicine, Vol.43, Issue 1, July 2012, Pages 20–26.

[9] Merz, B. (2018). Forget to Take Meds? The Real Cost of Ignoring Your Doctor’s Orders.. [ONLINE] Available at: <http://www.theatlantic.com/sponsored/cvsinnovation-care/forget-take-meds-real-cost-ignoring-your-doctors-orders/89/> [Accessed 10 March 2018]

[10] Dobbels F, Van Damme-Lombaert R, Vanhaecke J, De Geest S. Growing pains: Non-adherence with the immunosuppressive regimen in adolescent transplant recipients. *Pediatr Transplantation*. 2005;9:381-390.

[11] Anon. Poor medication adherence increases healthcare costs. *PharmacoEconomics and Outcomes News*. 2005;480:5.

[12] Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med*. 2005;353:487-497.

[13] Praska JL, Kripalani S, Seright AL, Jacobsen TA. Identifying and assisting low-literacy patients with medication use: a survey of community pharmacies. *Ann Pharmacother*. 2005;39:1441-1445.

[14] Todd Ruppar, PhD, RN, Overcoming Barriers to Medication Adherence for Chronic Diseases. Us Department of health and human services. February 2017

[15] https://www.amazon.in/s?k=Timed+Medicine+Dispenser&ref=nb_sb_noss

[16] https://www.amazon.in/s?k=.+Medicine+reminder+and+dispenser&ref=nb_sb_noss

[17] https://www.amazon.com/s?k=Med+Center+Medication+Reminder&ref=nb_sb_noss

[18] https://www.amazon.com/s?k=med+dispenser+3+times+a+day&crid=3TL00T6K4KJO5&srefix=Med+Time+disp%2Caps%2C365&ref=nb_sb_ss_i_1_13