Personal Assistance for Seniors Who Are Self-Reliant

TITLE

HABITAT: An IoT Solution for Independent Elderly

AUTHOR

Francesca Benass, Federico Chesani, Lorenzo Chiari, Andrea Galassi, Carla Raffaelli.

ABSTRACT

The main novelty of the paper is the system-level description of the platform flexibility allowing the interoperability of different smart devices. This research was developed within the framework of the operative project HABITAT (Home Assistance Based on the Internet of Things for the Autonomy of Everybody), aiming at developing smart devices to support elderly people both in their own houses and in retirement homes, and embedding them in everyday life objects, thus reducing the expenses for healthcare due to the lower need for personal assistance, and providing a better life quality to the elderly users.

HIGHLIGHTS

The review highlighted that the importance of health promotion and illness prevention throughout the life span especially in old age as the only and successful strategy to cope with the aging population phenomenon.

DRAWBACKS

Older adults often prefer to stay in their homes rather than enter a healthcare institution. Although in own-home assistance might appear as the better solution to elderly people, it may require efforts from informal caregivers such as family members, friends, neighbours, and volunteers hardly compatible with the family and social lifestyle.

TITLE

Understanding the care and support needs of older people: a scoping review and categorisation using the WHO international classification of functioning, disability and health framework (ICF).

AUTHOR

Sarah Abdi, Alice Spann, Jacinta Borilovic, Luc deWitte, MarkHawley.

ABSTRACT

The number of older people with unmet care and support needs is increasing substantially due to the challenges facing the formal and informal care system in the United Kingdom. Addressing these unmet needs is becoming one of the urgent public health priorities. In order to develop effective solutions to address some of these needs, it is important first to understand the care and support needs of older people.

HIGHLIGHTS

The review highlighted that older people living with chronic conditions have unmet care needs related to their physical and psychological health, social life, as well as the environment in which they live and interact.Findings of this review also emphasized the importance of developing care models and support services based around the needs of older people.

DRAWBACKS

There is a possibility that the screening process, the analysis and interpretation of the themes was influenced by the author's own perceptions or understanding of the topic.

TITLE

Using IoT technologies to develop a low-cost smart medicinebox

AUTHOR

Danyllo V.da Silva, Taisa G.Goncalves, Paulo F.Pires.

ABSTRACT

Regarding IoT scenarios, we applied a scenario-based technique named ScenarIoT. The scenario can be defined as a sequence of actions or an ordered set of interactions among parts.We choose ScenarIoT because it can be employed during requirements specification, architecture definition, documentation activities, and system's features idealization. This technique supports analysts during early development activities and suggests a list of IoT arrangements with their information catalogs

HIGHLIGHTS

This work proposed a low-cost smart medicine box system employing a robust architecture to support users and health professionals during medicines consumption.The proposed architecture enables to embody other types of devices such as wearable, electronic devices, home appliances,among others, offering infinite possibilities of applications and functions.

DRAWBACKS

This system can be improved, providing a more flexible way to schedule medicines consumption alarms such as twice a week, three times a week, every other day, among others.

TITLE

IoT-Based Smart Medicine Dispenser to Control and Supervise Medication Intake

AUTHOR

Gleiston Guerrero Ulloa, Carlos Rodríguez-Domínguez, Miguel J.Hornos, Ma Mercedes Fernández-Coello.

ABSTRACT

The dispenser emits a sound and lights up an LED to alert the patient that it is time to take his/her medication. When he/she is close to the smart medicine dispenser, it will identify him/her through facial recognition and deliver the prescribed medication. If the medication is not removed during the expected timings, a notification is sent to the caregiver through the mobile application so that she/he can act consequently.

HIGHLIGHTS

Using a facial identification mechanism, it recognizes the patients registered in the system and supplies IoT-Based Smart Medicine Dispenser them with the medicines they should take just when needed. Every time the dispenser provides a medicine box, it generates a sound and illuminates the corresponding compartment. The system also sends remote notifications to caregivers, informing them of the medicines dispensed to their dependents directly on their smartphone.

DRAWBACKS

To improve the proposed system, closing the dispenser compartments so that they only open when the camera detects the face of the caregiver who must place the medicine boxes in them. This would make it safer. It would also be good for the system to automatically detect which medicines and how many of them the caregiver has put in the different compartments; currently, he/she is who must provide these data through the mobile app.

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