Geriatrics Nursing 2020: An indoor positioning system for monitoring the behaviour of older people in their homes

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Abstract

The increase in older people wishing to live alone in their own homes has increased studies of monitoring systems to improve the quality of life of older people, their families and carers. The aim of the communication is to present the results of the evaluation of the degree of acceptability and satisfaction with the Senior Monitoring application. At the end of the study, an acceptability scale was passed to the 11 elderly participants (six women and five men) with an average age of 68 years and a standard deviation of 8 years. The scale consists of six Likert items with five response categories that assess two dimensions: usability and satisfaction. The average usability was 12.18 points (SD = 1.99) and the average satisfaction was 12.91 points (SD = 2.21); quite high values. As a qualitative assessment, several people expressed the wish that the device would be able to place the person away from home. The Senior Monitoring application has been evaluated satisfactorily by the study participants. New studies are opened in the use of conversational devices that allow the evaluation of aspects such as loneliness, depression, well-being through the analysis of behavioral data collected at home through conversational devices. This devices can be able to connected with bluetooth and wifi through internet, they can also be used to track physical activity,the conversional devices can help in tracking their mental health, and well being. The elderly behavior monitoring system used magnetic switches to record movement in rooms, infrared sensors to detect activities, and sound sensors to determine the types of activities.

The Senior Monitoring application has been evaluated satisfactorily by the study participants. New studies are opened in the use of conversational devices that allow the evaluation of aspects such as loneliness, depression, well-being through the analysis of behavioral data collected at home through conversational devices. The bed-exit detection system can detect the person is in the bed or starts counting time when the elderly totally gets up and leaves the bed. The toilet alarm system can keep recording the time that elder in the room. If the suspecious activity are observed, the monitoring system will signal an alert to caregivers who can check the real condition of the elder people and help them to get of the trouble immediatly,the time for treatment can be fastend Experiments were conducted and the results could illustrate the effectiveness and instantaneity of this system, the accuracy of the Systrem was around 98% it not long until we achieve the 100% accuracy the present growth rate of the information technology.This system is gaining the popularity in 21sr centuary due the increased population of old age people, according to the statistics the population of elders might surpass the mid aged people by the mid centuary and Some emergencies in the daily life of the elderly, including tumbling or falling off the bed, are difficult to be found and handled in time. This consequently delays the time for treatment.hence it is very critical to develope such kind of system so that elderly people can live in good health in their remaining years,apart from constant monitering from Docters and nurses, it has become difficult for the care givers to take care of elderly with this kind of system it willl be easy to track the Elderly activity, even tough being away from home for work or any stituation where they had to stay away from them.To improve the living quality of the elderlythe research on comprehensive indoor monitoring system for daily activities anf the behaviour of older people in their homes is of great importance. And is in the growing demand, experiments were conducted and the results could illustrate the effectiveness and instantaneity of this system. This kind of system can be also used in Nursing homes and at the hospitals apart from the domestic utilitya nd is becoming the popular option, therefore reducing the pressure of contioues observation and giving good care to the old aged people and the patients . Ensuring well-being of the elderly and provide them support when required is of special concern.

Elderly care at home is a matter of great concern if the elderly live alone, unforeseen problematic circumstances might occur that affect their well-being. Technologies that assist the elderly in independent living are essential for enhancing care in a cost-effective and reliable manner to be taken into account while designing such systems are also pointed out. This research work is an attempt to get insight into differing types of ambient-sensor-based elderly monitoring technologies within the home. With the aim of adopting these technologies, research works, and their outcomes are reported. Elderly behavior monitoring technology could also be a promising field, especially for long-term elderly care ,monitoring technologies should be taken to subsequent level with more detailed studies that evaluate and demonstrate their potential to contribute to prolonging the independent living of elderly people assisted living technologies will be needed in the future to take care of elderly people and help them to live independently.

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