Health Monitoring System Using Internet of Things (IoT) Sensing for Elderly People

Ibrar Hussain
University Institute of Information Technology
University of Arid Agriculture
Rawalpindi, Pakistan
ih147171@gmail.com

Sidra Tahir
University Institute of Information Technology
University of Arid Agriculture
Rawalpindi, Pakistan
stahir@uaar.edu.pk

Mamoona Humayun
Department of Information Systems, College of Computer and Information Sciences, Jouf University,
Sakakah 42421, Saudi Arabia
mahumayun@ju.edu.sa

Maram Fahhad Almufareh
Department of Information Systems, College of Computer and Information Sciences,
Jouf University
Sakakah 42421, Saudi Arabia
mfalmufareh@ju.edu.sa

N. Z. Jhanjhi
School of Computer Science and Engineering (SCE), Taylor's University,
line 4: Subang Jaya 47500, Malaysia;
noorzaman.jhanjhi@taylors.edu.my

Farkhanda Qamar
University Institute of Information Technology,
University of Arid Agriculture
Rawalpindi, Pakistan
farkhanda.qamar@uaar.edu.pk

2022 14th International Conference on Mathematics, Actuarial Science, Computer Science and Statistics (MACS) | 978-1-6654-6071-2/22/$31.00 ©2022 IEEE | DOI: 10.1109/MACS56771.2022.10023026

***Abstract*— Smart and linked health care is one of the many uses that the Internet of Things (IoT) has made possible. Getting everything in a hurry is one of the biggest demands of the contemporary world. People nowadays want to understand their current health state and demand prompt access to appropriate treatment. Even they have a great deal of challenges while trying to let someone know about their ailment. Networked sensors enable the collection of detailed data pertaining to our physical and mental health, whether they are worn on the body or integrated into our living spaces. Such data may result in a beneficial transformational shift in the health care environment if continuously collected, pooled, and skillfully mined. Specifically, the accessibility of information at already unheard of scales and worldly longitudes joined with another age of savvy handling calculations can: (a) work with a development in clinical practice from the momentum post facto analyze and-treat responsive worldview to a proactive structure for visualization of sicknesses at an early stage, combined with counteraction, fix, and generally speaking administration of wellbeing rather than illness; (b) empower personalization of medical services; and (c) work on the personal satisfaction for individuals by decreasing .In this study, we address the advantages and disadvantages of IoT in achieving this future health care goal.**

Keywords*— *Remote Health Monitoring, Internet of Things (IoT), Sensors

I. INTRODUCTION

The According to report 2015 of WHO i.e. World Health Organization on aging and health demonstrates that the issue of an aging global population is becoming worse. From 12 percent in 2015 to 22 percent in 2050, the percentage of the population over 60 will rise. In the next 35 years, there will be 2 billion senior people worldwide, expanding at a rate nearly twice as fast [1].

In terms of the steadily rising population of senior people, the situation in Asian nations is worse. For instance, Japan now has a population that is more than 30% older than average. China has experienced comparable circumstances. These young people are now grownups. Many of them find employment in metropolitan areas, while some of them pursue studies overseas. As a consequence, they decided to leave their parents in their hometown to raise their children on their own [2].

As While the number of medical facilities and staff is woefully insufficient, the medical systems in many nations are bearing a huge weight [3]. Incorporating wearable Internet of Things and computers (IoT) technologies into health monitoring services is one potential remedy [4, 5, 6]. It may modernize services provided by conventional medical facilities. In terms of everyday care, managing chronic diseases, rehabilitation, health training and consulting, etc., community health services may be improved [7]. For instance, since 2015, China's major cities have deployed Health Corners (also known as self-service medical facilities or body check rooms). Additionally, smartphone-based mobile healthcare apps are prospering. It demonstrates the tendency that, in the near future, healthcare services will become more widely available to families [8]. Health monitoring services will often use posture detection techniques employing smart devices with sensors [9, 10].

The following is how the paper is set up: The important relevant works in this field are highlighted in Section 2. We describe the architecture for wearable sensor-based remote health monitoring systems in Section 3 of this document. The findings are given in Section 4. In Section 5, we wrap up the whole story.

II. RELATED WORK

The author of paper [11] goes into depth on the elderly person's fall detection system and health monitoring system. The authors' method is based on an ARM9 controller and several kinds of sensors. Additionally, a connected PC via RS232 displayed the sensors' output. For transmitting notifications and position information, the authors additionally employed GSM and GPS [12].

A crucial aspect of taking care of one's health is maintaining body temperature. Particularly for elderly individuals since if their temperature rises, they may suffer from a stroke. On the other side, people with disabilities struggle with issues like weakness, fever, etc. [13]. Additionally, a human being's body temperature might alter at any moment. Therefore, it is necessary to design a gadget

978-1-6654-6071-2/22/$31.00 ©2022 IEEE

Authorized licensed use limited to: University of the West of England. Downloaded on February 06,2023 at 05:32:02 UTC from IEEE Xplore. Restrictions apply.