Chapter 10
Healthcare for the Elderly With Digital Twins

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ABSTRACT

Assistive technology for the elderly was the focus of the literature review that would help support the elderly's healthcare. This chapter discusses the potential of assistive technology in general to offer a cost-effective way of assisting healthcare services for the elderly; no systematic research on the expenses of these technologies for this population has been carried out. Throughout the process of evaluation, evidence of significance is considered. This chapter explains the methods and conclusions of the literature review. As a result of this chapter, the elderly will have better access to health care.

INTRODUCTION

Assistive technology is discussed and evaluated in this chapter, which focuses mainly on the elderly. Another benefit is that it aids in discovering metrics by which we may assess the potential implications and social effects of elderly treatment. The promising benefit is that it aids AI in sustainable health care, precision medicine, and privacy concerns (Santosh & Gaur, 2022). The economic and educational systems rely heavily on public health, which demands particular care. One such epidemic is COVID-19, a genuine case of an infectious illness. Health protection, illness prevention, and health promotion are at the heart of WHO's mission to provide public health systems that can meet the aforementioned critical challenges. For example, deep convolution neural networks, with their AI and machine learning capabilities, can positively affect public health in several areas (e.g., existing medical image-based detection of COVID-19) (Gaur et al., 2021). If we examine resource-constrained places, they are invaluable instruments not only for diagnosing and analyzing pathology but also for speeding up the decision-making process (e.g., infectious diseases: pneumonia and tuberculosis) (Mahbub et al., 2022).

Assistive technology for the elderly was the focus of the literature review that would contribute to supporting healthcare services for the elderly. In this chapter, the relationship between "Telecare and the

elderly," we used a comprehensive definition of assistive technology for this evaluation (Van Der Roest et al., 2017). Using telecommunication and automated systems, 'in-home healthcare and social services for those unable to leave their homes. This chapter reviews nursing homes and sheltered housing where people live in groups. The evaluation looked at both types of technology for official and personal usage. The features of care at home and assistance for informal caregivers are crucial in a legislative environment that is more oriented toward personalized services. Early on, the evidence base was fragmented; cost-effectiveness techniques were variable, and the outcome measures employed included many things (Edney et al., 2018). During the review process, this wide range of data and methods were found and looked at seeing if they should be included.

There is mixed information on assistive technology, including telehealth care, telemedicine, and Telecare. Even in the face of an aging population, assistive technology is a solution that could be efficient compared to how services are currently delivered. The Indonesian National Telehealth and Telecare Delivery Plan state as much. We cannot continue providing our services in their current form (Durrani & Khoja, 2009). Schröders (2021) reported that the breadth and quality of the reviews had been restricted. Cost and cost-effectiveness data were relatively lacking in reliability. It largely ignored the aging population in academic and policy literature, at least in Indonesia. They account for only 33% of the 21 million people who receive technology-based services. Rather than looking at a broader body of work, we narrowed our scope to devices geared towards the elderly.

METHOD

In terms of the method, refined search keywords were developed after initial searches to establish a compromise between specificity (identifying all-important studies but with a significant volume of irrelevant stuff) and sensitivity (more relevant research, but the risk of missing some important ones). It was around this time that the words were first introduced. They included assistive technology and any other expense consideration in the thorough, methodical evaluation of costs. With so much information accessible and little time, the study concentrated on articles published in recent years. Because this is a rapidly growing subject, implementation evidence rather than pilot studies is more important. I judged more recent articles more relevant. I reviewed more than half of the items during the previous five years. After the relevance of the abstracts was verified, fifty-nine texts were evaluated. Thirty-three of the fifty-nine candidates were discarded following a comprehensive text review.

The following were the exclusion and inclusion criteria:

A researcher read over each item in great detail. It was determined whether they were relevant enough to the research to warrant further evaluation using our proforma review method. Use this tool to collect information on each item's substance and conclusions and an attribute evaluation. As a result, the evaluation process thoroughly evaluated the research's overall quality (Komalasari et al., 2022).

RESULTS

This section presents the result of the literature discussing "advanced" technology, such as ICT and electrical parts. Applications that could be transferred from location to location comprised one-third of the applications, while those that could not be relocated comprised the other third. More than half of the

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