Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3, 2801-2810
2025
Publisher: Learning Gate
DOI: 10.55214/25768484.v9i3.5877

Research to activate and strengthen the continuous use of digital healthcare services for the silver generation

Jai-Woo Oh[1*]
[1]Department of Health Management & Education, Kyungdong University, Gangwon 26495, Korea; sbaby692001@naver.com (J.W.O.).

Abstract: The study explores factors influencing the adoption and sustained use of these services by seniors, highlighting the potential benefits of digital healthcare in managing chronic diseases, ensuring safety, and improving the quality of life. A case study approach was adopted to analyze various senior digital healthcare services, both domestic and international. The research examined factors such as user interface design, service reliability, device integration, and policy support. The study also identified barriers to service adoption, including the digital divide, high costs, and complex technologies. The study found that user-friendly interfaces, service reliability, integration with digital devices, and policy support are crucial for the successful adoption and expansion of senior digital healthcare services. It also highlighted that digital literacy, cost, and technology complexity are major barriers for seniors in using these services. The study suggests enhancing digital literacy education programs for seniors, expanding policy support to reduce costs, and developing more user-friendly technologies. It also recommends improving the integration of digital devices and fostering collaboration between public and private sectors to create more effective digital healthcare services for seniors.

Keywords: *Chronic disease management services, Dementia care services, Digital healthcare, Senior digital healthcare, Senior safety services.*

1. Introduction

Global population aging is progressing rapidly, and South Korea is one of the countries experiencing the fastest aging rates [1]. Having already entered an aged society in 2017, South Korea is expected to become a super-aged society by 2025, with over 20% of its population being 65 years or older. This demographic shift poses various challenges across society, with the increased demand for elderly care and rising healthcare costs becoming significant social burdens [2]. The elderly population accounts for a substantial portion of overall healthcare expenditures, and the proportion of medical expenses for those aged 65 and older continues to rise. In this situation, traditional healthcare systems are increasingly struggling to meet the demands generated by aging populations. To address these issues, digital healthcare services have emerged as a crucial alternative. In particular, technologies are being developed to manage various health problems faced by the elderly in daily life more effectively, including chronic disease management, safety monitoring, and dementia care. Digital healthcare services offer the advantage of being accessible anytime, anywhere, and provide personalized health management. This has led to the expansion of the "Aging in Place" concept, which supports elderly individuals in living safely in their own homes. However, despite the potential of digital healthcare services, many elderly individuals have not yet adopted these technologies, and the utilization rate remains low. This can be attributed to various factors, including discomfort with using technology, a lack of digital literacy, and concerns about reliability. Therefore, there is a need for strategies to enhance accessibility to digital healthcare services for the elderly and to encourage their

History: Received: 13 January 2025; Revised: 17 March 2025; Accepted: 21 March 2025; Published: 29 March 2025
* Correspondence: sbaby692001@naver.com

sustained use. Increasing service loyalty is particularly important, as it plays a crucial role in helping the elderly manage their health over the long term through digital healthcare, ultimately reducing healthcare costs. Accordingly, this study aims to explore strategies for activating senior digital healthcare services and enhancing loyalty, with the goal of improving the quality of life for the elderly and reducing social and economic burdens.

The purpose of this study is to explore strategies to enhance the activation and adoption of digital healthcare services among the elderly, with a focus on increasing their loyalty to these services. This research aims to identify the key factors that influence the adoption and continued use of digital healthcare services by analyzing recent trends and case studies. Ultimately, the goal is to propose actionable strategies that can improve elderly participation and satisfaction with digital healthcare services, thereby enhancing overall health outcomes and quality of life.

I have organized the content on digital healthcare and senior digital healthcare for this study as follows.

Digital healthcare refers to the integration of advanced technologies of the Fourth Industrial Revolution with healthcare, aiming to provide personalized and precision medicine. Specifically, it leverages information and communication technologies (ICT) such as the Internet of Things (IoT), cloud computing, big data, and artificial intelligence (AI) to collect and analyze healthcare data, offering efficient healthcare services regardless of time and location [3]. Digital healthcare extends beyond diagnosis and treatment, emphasizing well-being and prevention, and shifting the paradigm toward encouraging active participation in personal health management [4]. Senior digital healthcare refers to the application of these digital healthcare technologies to provide healthcare services specifically tailored for the elderly. It focuses on the concept of "Aging in Place," which supports seniors in living healthily in their own homes as they age, and includes services designed to address various health issues such as safety, chronic disease management, and dementia care [5]. These services utilize technologies that monitor seniors' health status and daily activities, allowing for prompt responses when needed [6]. Key services include wearable devices, smartphone apps, and AI-based monitoring systems, which enable tracking of seniors' location, activity monitoring, medication reminders, and emergency response [7]. For example, a smartwatch can continuously monitor a senior's heart rate, blood pressure, and activity levels, and immediately alert caregivers or healthcare providers if abnormal patterns are detected. Seniors often require ongoing care due to health issues like chronic diseases or dementia, and safety concerns are particularly critical for those living alone [8]. Senior digital healthcare can play a significant role in addressing these issues, contributing to reduced medical costs, ensuring safe living environments at home, and improving the overall quality of life for the elderly [9]. Additionally, these services help reduce the burden on families and caregivers responsible for managing the health of seniors, enabling more effective care [10].

2. Materials and Methods

This study mainly used the case study method to derive a plan to revitalize digital healthcare services for seniors. In the course of the research, we analyzed the current status and problems of senior digital healthcare through various literature materials and actual service cases. Specifically, the research methods used are as follows

2.1. Literature Review

In order to derive strategies for the revitalization of digital healthcare services for seniors, a literature research method was used to systematically analyze various literature data.

2.1.1. Literature Selection According to the Purpose of the Study

The literature review on senior digital healthcare services was conducted by systematically searching and selecting various topics aligned with the research objectives. The following key topics were considered.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

Concept and Definition of Digital Healthcare: The development of digital healthcare technology and its application in healthcare services were analyzed through existing studies.

Healthcare Services for Seniors: Research focused on the characteristics of the elderly population and the healthcare services they require, with a review of literature addressing the necessity and effectiveness of senior digital healthcare services.

Challenges of an Aging Society: The global trend of population aging and the associated social and economic challenges were analyzed, exploring how digital healthcare services can address these issues.

Policy and Case Studies: The literature examined key policies and case studies that influence the activation of senior digital healthcare services, analyzing successful policy implementations and service adoption in various countries.

2.1.2. Databases and Material Sources

In the literature review, a variety of academic databases and public resources were utilized to gather relevant literature. Key databases included PubMed, IEEE Xplore, ScienceDirect, and Google Scholar, with a particular focus on analyzing the latest research papers and review articles related to digital healthcare. Additionally, government publications, reports from international organizations, and materials presented at academic seminars were also used as primary sources for the literature review.

2.1.3. Literature Analysis Methods

The collected literature was systematically analyzed using qualitative analysis methods. The following analytical approaches were applied.

Content Analysis: The primary themes and research findings were summarized, focusing on the main content of the literature, and categorized according to the objectives of this study. Particular attention was given to the effectiveness of senior digital healthcare services, user acceptance, and factors supporting policy.

Comparative Analysis: Policies and case studies related to senior digital healthcare services in various countries were compared to identify common success factors and differences based on regional characteristics. This approach aimed to understand service activation strategies across different policy environments.

Meta-Analysis: Results from existing studies were synthesized to draw comprehensive conclusions about the effectiveness of senior digital healthcare services and to strengthen the theoretical foundation of the research.

2.2. Case Study

This study adopted the case study method to derive strategies for activating senior digital healthcare services. Case studies are a qualitative research method useful for deeply analyzing specific phenomena or cases to derive generalized theories. They are particularly effective in understanding complex and multi-layered phenomena like senior digital healthcare services.

2.2.1. Case Selection Criteria

In this study, representative cases were selected from various senior digital healthcare services being operated domestically and internationally. The criteria for selecting these cases are as follows:

Innovation of the service: Whether the service includes unique and technologically innovative elements.

User acceptance: The extent to which senior users accept and utilize the service.

Effectiveness of operation: Evaluation of whether the service has a positive impact on the health and safety of seniors.

International representativeness: Cases were selected for their international representativeness to compare how senior digital healthcare is applied in various countries, including South Korea, the

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

United States, and Europe.

2.2.2. Services to be Analyzed

In the case study, the following domestic and international senior digital healthcare services were analyzed in depth:

TouchCare: An AI-based remote elderly care service developed in South Korea that monitors seniors' living patterns and provides personalized care through an AI agent. TouchCare detects seniors' activities using smartwatches and attached tags, enabling health management and safety monitoring based on the collected data [11].

CarePredict: A senior digital healthcare service in the United States that tracks the daily activities of seniors through wearable devices, detecting falls and changes in health conditions to alert caregivers. CarePredict focuses on enhancing the safety of seniors, particularly through collaboration with nursing homes [12].

WellCheck: A chronic disease management app from South Korea that allows seniors to record their health data and share it with their primary care physicians for personalized treatment. WellCheck is particularly focused on managing hypertension and diabetes, offering an intuitive interface that is easy for senior users to navigate [13].

2.2.3. How to Analyze a Case

The following methods were used to analyze each case:

Service operation structure analysis: We examined how each service is designed and operated, including the technical infrastructure and service delivery methods.

User experience and acceptance investigation: To understand how senior users accept and use the service, we analyzed user experience (UX) research and interview data.

Effectiveness evaluation: We assessed the impact of the services on improving seniors' health conditions, ensuring safety, and enhancing convenience in daily life. This was reviewed through changes in health indicators before and after the service implementation and user feedback.

Analysis of success and failure factors: We analyzed the success factors and challenges identified in each case to derive strategic implications for the expansion of senior digital healthcare services.

2.2.4. Significance of Case Studies

Through these case studies, we were able to identify the key factors for the successful implementation of senior digital healthcare services. Additionally, by comparing the operational methods of various services, we have suggested potential areas for development and improvement in senior digital healthcare. The findings from this case analysis are expected to contribute to policy recommendations related to the expansion of senior digital healthcare services

3. Results and Discussion

This study analyzed various cases to promote the activation of senior digital healthcare services, and the key findings derived from this analysis are summarized as follows

3.1. Analysis of the Current Status of Senior Digital Healthcare Services

The major senior digital healthcare services analyzed in this study were developed and operated with a focus on senior safety, chronic disease management, and dementia care.

Senior Safety Services: Services like South Korea's TouchCare and the United States' CarePredict focus on detecting and preventing potential risks in the daily lives of seniors. TouchCare monitors seniors' living patterns using AI-based spontaneous ignition detection and has a system in place to immediately alert caregivers if any anomalies are detected. CarePredict uses wearable devices to track seniors' activities in real-time, enabling early detection and response to falls and other health issues [14, 15]. (as seen in Table 1).

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

Table 1.
Status of Senior Digital Healthcare Services (Elderly Safety).

Service Name	Service Provider	Main Service	Main Technology	Operation Method
TouchCare	DNX	Collect and analyze elderly lifestyle pattern data and suggest behavior improvement through text messages or AI speaker 'Sooni'	Smartwatch, tag, mobile app, AI speaker	Operating 'AI Senior Citizen Safety Service' in cooperation with local governments
Dasomi	Wonderful Platform	AI-based conversational companion, Dialogue and movement, etc. life pattern data collection and analysis, Emergency situation detection and emergency call	AI robot (screen AI speaker), mobile app for guardians only	Operate care services in cooperation with local governments
Galaxy Watch	Samsung	If a fall is detected and there is no response within the period, a text message and call is connected to the designated contact.	Accelerometer Smartwatch	Commercialization
Care Predict	Care Predict	Collect and analyze daily activities and behavior patterns through wearable tempo and measure risk situations through small changes	Temposmart Wearable, Touchpoint Caregiver App	Service Delivery through Nursing Homes
Alexa Together	Amazon	Elderly monitoring and emergency phone consultation service through AI speaker interaction	Amazon AI Speaker, Alexa Mobile App	Commercialization
Care@Home	Essense Smart Care	Continuous daily life monitoring, advanced fall detection, telemedicine	Multidimensional fall detection sensor, emergency caller, gateway, app for guardians	Service provided in partnership with overseas companies (currently operating in 25 countries)
Apple Watch	Apple	Detects a fall and if there is no movement within a certain period of time, a text message and call is sent to the designated contact.	Accelerometer and Gyro	Smartwatch Commercialization

Chronic Disease Management Services: South Korea's WellCheck and the United States' Livongo Health were primarily developed for managing chronic diseases. WellCheck allows users to input data such as blood pressure and blood sugar levels, which can then be shared with their primary care physician for personalized treatment. Livongo Health provides chronic disease management services through health insurance, enabling users to access these services without additional costs [16]. (as seen in Table 2).

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

Table 2.
Status of Senior Digital Healthcare Services (Chronic Diseases in the Elderly).

Service Name	Service Provider	Main Service	Main Technology	Operation Method
Wellcheck	Mcircle	Collects health and daily life data and sends it to the attending physician to provide customized treatment to patients with chronic diseases	Mobile app for patients, medical treatment system for doctors linked with mobile app data	Provided as a smartphone app (Android, iOS), hospital members sign up on the Wellcheck site
Doctor Diary	Doctor Diary	Provides personalized diabetes management methods using AI, personalized diabetes education content, personalized health reports	AI, linking app user records and medical data (EMR-PHR linkage)	Provided as a smartphone app (Android, iOS)
Cart One Sky	Sky Labs	Collects bio-signal data and processes it into meaningful data that can be used for medical judgment through AI technology	EKG/photoplethysmography sensor ring-shaped wearable device,	Prescription approved by the Nursing Care Travel Agency
Livongo	Livongo Health	Collect health data via Livongo's Bluetooth blood glucose and blood pressure monitor, and Livongo Coach provides personalized action plans	Bluetooth-enabled blood glucose and blood pressure monitor, user mobile app	Provides services to health insurance and Medicare beneficiaries
CureApp	CureApp	For patients : Hypertension treatment through personalized lifestyle changes For medical staff : Improving the quality of medical services by checking patient lifestyle changes	Artificial intelligence	Plans to launch the app after going through insurance application procedures
Empatica	Care Empatica	A remote patient monitoring platform that allows medical professionals or guardians to monitor patients' health data	E4 Smart Band, mobile app, web portal	Providing Empatica care services to healthcare providers and researchers
Iora	Iora Health	Doctors diagnose, treat, and manage chronic diseases in the elderly via telemedicine	Third-party video call system	For Medicare beneficiaries

Dementia Care Services: Some services offer specialized care for seniors with dementia, focusing on maintaining and improving cognitive functions in the early stages of dementia [17]. (as seen in Table 3).

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

Table 3.
Status of Senior Digital Healthcare Services (Elderly Dementia).

Service Name	Service Provider	Main Service	Main Technology	Operation Method
Dementia Check	Central Dementia Center	Dementia risk check, dementia prevention, dementia information service, dementia campaign participation, missing elderly prevention service, care service	Mobile app	Provided as smartphone app (Android, iOS)
Lucy	Luxid Labs Platform	Early detection of elderly people at risk of mild cognitive impairment using eye gaze and brain waves, cognitive health training and management	Virtual reality (VR) headset with brain wave electrodes attached	Service pilot operation planned in Seoul, Gangwon-do, and Gwangju
Pio	Wydots	Providing cognitive intervention programs through AI robots and tablet PC apps	AI robots, tablet PC apps	Care service in cooperation with local government
MyndVR	MyndVR	Provides video content through virtual reality (VR) to alleviate dementia symptoms	VR headset, mobile app for caregivers	Provides services in partnership with nursing homes
NouKNOW	Cogstate	Self-assessment of brain performance based on cognitive test algorithm	CogstateBriefBattery, a cognitive function test	Service in Japan in partnership with Eisai
Embodies Labs	Embodies Labs	Immersive education service for dementia caregivers using virtual reality (VR)	VR headset with dementia patient scenarios	Service provided in partnership with nursing homes

3.2. Activating Factors for Senior Digital Healthcare Services

Through the case studies, several key factors were identified as critical for the successful activation of senior digital healthcare services.

User-friendly Interface: The research emphasized that for seniors to continue using digital healthcare services, the service must be user-friendly. Features tailored to the digital literacy level of seniors, such as adjustable font sizes, voice support, and simple controls, were shown to positively impact service adoption rates.

Reliability and Stability: The reliability and stability of a service were found to be crucial in building trust among senior users and their families. For example, the TouchCare service gained high trust from users due to its AI agent's spontaneous ignition detection feature and the accuracy of its data analysis, leading to continued use of the service.

Integration with Various Devices: The ability to integrate with various digital devices, such as wearable devices, smartphone apps, and cloud-based data storage, was identified as an important factor in enhancing service utilization. This integration allowed for continuous monitoring of seniors' health data and enabled immediate responses when necessary [18].

Policy and Institutional Support: Policy support from governments played a significant role in activating senior digital healthcare services. For example, Germany's Digital Healthcare Act allows digital healthcare apps to be prescribed, enabling seniors to access services with costs covered by health insurance. This policy has been a key factor in increasing service adoption rates [19, 20].

3.3. Barriers to Senior Digital Healthcare Services

The study also identified several key barriers to the activation of senior digital healthcare services.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

Digital Divide: Seniors with limited access to digital devices and technology found it difficult to benefit from these services. In particular, seniors unfamiliar with using smartphones or the internet faced challenges in utilizing these services.

Cost Issues: Some services had high initial or maintenance costs, making them less accessible to seniors. For instance, in the case of CarePredict, the high price of the wearable device and the monthly service fee posed barriers to wider adoption.

Complex Technology: Technologies that were too complex or difficult to use became burdensome for seniors. The more complicated a service, the less frequently seniors used it, which ultimately had a negative impact on the sustainability of the service.

3.4. Proposed Strategies for Activating Senior Digital Healthcare Services

This study proposes the following strategies to promote the activation of senior digital healthcare services:

Strengthening User Education: It is necessary to enhance digital literacy education programs to help seniors effectively utilize digital healthcare services. This will support seniors in understanding and using digital devices more easily.

Expanding Policy Support: Governments and public institutions should provide greater policy support to promote the adoption and expansion of senior digital healthcare services. This includes policies such as financial support for service usage, tax benefits, and regulatory relaxation.

Technology Development and Improvement: User-friendly technologies should be continuously developed to ensure seniors can use them conveniently, while also enhancing the reliability and stability of services. Additionally, integration with various digital devices should be improved to enable seniors to seamlessly use the services in their daily lives [21].

Strengthening Public-Private Cooperation: Cooperation between the digital healthcare industry and the senior care industry should be strengthened to facilitate demonstration projects and pilot programs. Furthermore, the needs of seniors should be reflected from the early stages of service development [22].

4. Conclusion

This study analyzed the factors influencing the adoption and continued use of digital healthcare services among seniors through various case studies, in an effort to explore activation strategies for senior digital healthcare services. The results of the study revealed that user-friendly interfaces, reliability and stability, integration with various devices, and policy support are crucial for the successful introduction and expansion of senior digital healthcare services. In particular, it was emphasized that for seniors to continue using digital healthcare services, the services must be intuitive and easy to use, while providing reliable data and stable performance. Furthermore, maximizing user convenience through integration with various digital devices, such as wearable devices and smartphone apps, is essential. The study also confirmed that the digital divide, high costs, and complex technologies are major factors hindering the use of digital healthcare services by seniors. To overcome these barriers, it is necessary to strengthen digital literacy education programs for seniors, expand policy support to reduce financial burdens, and develop user-friendly technologies. The activation strategies proposed in this study aim to promote the expansion of senior digital healthcare services, improve the quality of life for seniors, and reduce social and economic burdens. As more senior digital healthcare services continue to be developed and expanded, ongoing research and policy support are essential to ensure that these services provide meaningful assistance in managing seniors' health. Through these efforts, it is expected that an environment will be created where seniors can use digital healthcare services to live safely and healthily in their homes, effectively addressing various issues arising in an aging society.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Acknowledgment:

This research was supported by Kyungdong University Research Fund, 2024.
This research was supported by Gangwon Regional Innovation System & Education (RISE) in 2025.

References

[1] OECD, *Health at a glance 2021*. OECD Publishing. https://doi.org/10.1787/ae3016b9-en, 2021.

[2] H. Ga, "Long-term care system in Korea," *Annals of Geriatric Medicine and Research*, vol. 24, no. 3, p. 181, 2020. https://doi.org/10.4235/agmr.20.0036

[3] A. Chatterjee, A. Prinz, M. Gerdes, and S. Martinez, "Digital interventions on healthy lifestyle management: Systematic review," *Journal of Medical Internet Research*, vol. 23, no. 11, p. e26931, 2021. https://preprints.jmir.org/preprint/26931

[4] D. S. Ting, H. Lin, P. Ruamviboonsuk, T. Y. Wong, and D. A. Sim, "Artificial intelligence, the internet of things, and virtual clinics: Ophthalmology at the digital translation forefront," *The Lancet Digital Health*, vol. 2, no. 1, pp. e8-e9, 2020. https://doi.org/10.1016/S2589-7500(19)30217-1

[5] D. V. Dimitrov, "Medical internet of things and big data in healthcare," *Healthcare Informatics Research*, vol. 22, no. 3, pp. 156-163, 2016. https://doi.org/10.4258/hir.2016.22.3.156

[6] J. Sumner, L. S. Chong, A. Bundele, and Y. Wei Lim, "Co-designing technology for aging in place: A systematic review," *The Gerontologist*, vol. 61, no. 7, pp. e395-e409, 2021. https://doi.org/10.1093/geront/gnaa064

[7] Y. M. Yi *et al.*, "Development of a community-based integrated service model of health and social care for older adults living alone," *International Journal of Environmental Research and Public Health*, vol. 18, no. 2, p. 825, 2021. https://doi.org/10.3390/ijerph18020825

[8] G. A. Wildenbos, L. Peute, and M. Jaspers, "Aging barriers influencing mobile health usability for older adults: A literature based framework (MOLD-US)," *International Journal of Medical Informatics*, vol. 114, pp. 66-75, 2018. https://doi.org/10.1016/j.ijmedinf.2018.03.012

[9] B. Leff, L. V. DeCherrie, M. Montalto, and D. M. Levine, "A research agenda for hospital at home," *Journal of the American Geriatrics Society*, vol. 70, no. 4, pp. 1060-1069, 2022. https://doi.org/10.1111/jgs.17715

[10] G. Arsenault-Lapierre, M. Henein, D. Gaid, M. Le Berre, G. Gore, and I. Vedel, "Hospital-at-home interventions vs in-hospital stay for patients with chronic disease who present to the emergency department: A systematic review and meta-analysis," *JAMA Network Open*, vol. 4, no. 6, pp. e2111568-e2111568, 2021. https://doi.org/10.1001/jamanetworkopen.2021.11568

[11] TouchCare, "How TouchCare works. DNX Co. Ltd," 2024. Retrieved: https://play.google.com/store/apps/details?id=kr.dnx.ble.android.touchcare&pcampaignid=web_share&pli=1. 2024.

[12] CarePredict, "CarePredict at home. CarePredict," 2024. Retrieved: https://www.carepredict.com/at-home-3/. 2024.

[13] WellCheck, "Customized app program for chronic disease patients Mcircle," 2024. Retrieved: https://www.well-check.co.kr/. 2024.

[14] K.-i. Kim, S. S. Gollamudi, and S. Steinhubl, "Digital technology to enable aging in place," *Experimental Gerontology*, vol. 88, pp. 25-31, 2017. https://doi.org/10.1016/j.exger.2016.11.013

[15] F. Shu and J. Shu, "An eight-camera fall detection system using human fall pattern recognition via machine learning by a low-cost android box," *Scientific Reports*, vol. 11, no. 1, p. 2471, 2021. https://doi.org/10.1038/s41598-021-81115-9

[16] J. Lemay, M. Waheedi, S. Al-Sharqawi, and T. Bayoud, "Medication adherence in chronic illness: Do beliefs about medications play a role?," *Patient Preference and Adherence*, vol. 12, pp. 1687-1698, 2018. https://doi.org/10.2147/PPA.S169236

[17] MyndVR, "Provides video content through virtual reality (VR) to alleviate dementia symptoms. MyndVR Inc," 2024. Retrieved: https://www.myndimmersive.com/vr-based-digital-therapeutics. 2024.

[18] K. H. Lee *et al.*, "Concept and proof of the lifelog bigdata platform for digital healthcare and precision medicine on the cloud," *Yonsei Medical Journal*, vol. 63, no. Suppl, p. S84, 2022. https://doi.org/10.3349/ymj.2022.63.S84

[19] C. Y. Chiao, H. S. Wu, and C. Y. Hsiao, "Caregiver burden for informal caregivers of patients with dementia: A systematic review," *International Nursing Review*, vol. 62, no. 3, pp. 340-350, 2015. https://doi.org/10.1111/inr.12194

[20] P. Subramaniam and B. Woods, "The impact of individual reminiscence therapy for people with dementia: Systematic review," *Expert review of Neurotherapeutics*, vol. 12, no. 5, pp. 545-555, 2012. https://doi.org/10.1586/ern.12.35

[21] B. Afram *et al.*, "Reasons for institutionalization of people with dementia: Informal caregiver reports from 8 European countries," *Journal of the American Medical Directors Association*, vol. 15, no. 2, pp. 108-116, 2014. https://doi.org/10.1016/j.jamda.2013.09.012

[22] D. K. Shaw, "Overview of telehealth and its application to cardiopulmonary physical therapy," *Cardiopulmonary Physical Therapy Journal*, vol. 20, no. 2, pp. 13-18, 2009.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 3: 2801-2810, 2025
DOI: 10.55214/25768484.v9i3.5877