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CHALLENGES FACING SOCIAL WORK WHEN USING AI APPLICATIONS TO PROTECT THE ELDERLY

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ABSTRACT

The study aims to clarify the challenges encountered by social work in the application of artificial intelligence technologies to provide social protection to the elderly. It utilized the descriptive method, which draws upon existing literature on the topic, either directly or indirectly, to show these challenges. The study addressed its inquiry by categorizing the challenges faced by social work into two distinct types: the first pertains to the professional training of social workers, while the second concerns the elderly's understanding of technology and the applications of artificial intelligence. The study culminated in a series of recommendations, the most significant of which are training social workers to utilize and implement technical knowledge in the field of social work and hiring social workers with technical expertise to engage in elderly care, while emphasizing ongoing training for them prior to and during their employment regarding the most recent technological advancements. The government of the Kingdom of Saudi Arabia is proactively preparing for the future by keeping pace with the latest advancements in technology and adhering to global best practices in data and artificial intelligence. This includes the adoption of cutting-edge technologies to foster digital transformation initiatives, embracing modern innovations, and striving to fulfill Vision 2030. Various ministries, public entities, and institutions have shown a strong commitment to providing numerous services for the elderly. In light of this the kingdom established legislation and systems to address their needs and safeguard their rights, as articulated in Article 27 of the Basic Law of Governance, which explicitly emphasizes the state's responsibility towards the elderly as they age. The Kingdom has introduced a dedicated framework for their care, known as the System of Rights and Care of the Elderly. Numerous initiatives have been launched to improve their quality of life and ensure their rights are protected. Additionally, the Ministry of Human Resources and Social Development seeks to promote Islamic values that advocate for the respect and honor of the elderly, highlighting their contributions to community development and their ongoing capacity to contribute, while also enhancing the utilization of their professional and academic expertise, raising awareness of their rights, and supporting both local and international efforts aimed at this demographic. Working with the elderly represents a field of professional practice. Given the differing abilities and readiness of the elderly, it is natural for social work to face some challenges related to the use of artificial intelligence to facilitate work with them and provide social protection. The researcher, in light of the above, attempts to clarify these challenges with the aim of serving and protecting the elderly.

KEYWORDS: Challenges, Artificial Intelligence, Social Protection, Elderly.

1. STUDY PROBLEM

In recent years, there has been a notable increase in research focused on artificial intelligence applications for the elderly, especially regarding the utilization of social work to support this demographic. An article (BMC Geriatrics, 2025) titled "A Systematic Review of the Effectiveness of Artificial Intelligence in Geriatric Healthcare: A Critical Analysis of the Current Literature" analyzed 31 studies and found little consensus on the effectiveness of these initiatives for the elderly. It was also established that social robots increase social interaction and improve mood. The article revealed some bias in the studies, ranging from moderate to severe, due to weak methodological design, making it difficult to determine whether AI-complementary technologies are significantly beneficial. Despite the encouraging results, more studies are needed.

The article (J Rehabil Assist, 2024) titled "Implementation of Socially Assistive Robots in Elderly Care Institutions" discussed the study's results, which indicated that professionals generally view robots as a positive means of assisting the elderly. It also highlighted the necessity of educating and training all stakeholders, as well as raising some financial and ethical issues related to the introduction of these technologies.

Al-Mahdar's (2024) research emphasized the importance of improving cognitive and skill competencies, particularly in relation to the applications of artificial intelligence among social workers. It also highlighted the necessity for social workers to enhance their comprehension of these AI applications.

Similarly, a study done by Ali & Mohammed (2024) advocated for the development of training programs aimed at equipping social workers with the skills to utilize artificial intelligence in the management of educational institution programs.

Also, Tiffany Leung's study (2023), titled "Application of Artificial Intelligence in Elderly Care," sought to investigate the collaborative networks involved in the implementation of AI in elderly care over the last 23 years. This was achieved through an analysis of research published on the Web Science network, revealing a considerable interest from researchers and suggesting the need for further investigations in this area.

The research conducted by Alomar, N., & Moulahi, B. (2023) presents a critical examination of the policies regarding elderly care in Saudi Arabia through the framework of institutional theory. The findings indicate a reduction in the integration of artificial intelligence and tele-health services among the elderly population, and it is recommended that digital literacy programs be implemented.

Additionally, the investigation by Al-Sayyad (2023) identified several barriers to the incorporation of artificial intelligence within professional settings. These barriers include challenges associated with the utilization of AI technologies, inadequate infrastructure for wireless communications and programming, as well as the necessity for a shift in societal attitudes.

Furthermore, the outcomes of the research by Al-Anzi (2023) revealed that there are significant challenges hindering professionals from effectively leveraging digital tools and applications. The most notable of these challenges is the insufficient financial and administrative backing required to facilitate digital transformation.

Ibrahim (2023) suggested the necessity of offering training and raising awareness among social work students about the ethical and responsible application of artificial intelligence in their professional practice areas. Furthermore, it emphasized the need for additional studies and research to comprehend the effects of artificial intelligence on social work.

The study by Alshammari, S & colleagues (2022), entitled "Social Support Networks and Quality of Life among Saudi elders," sought to explore the correlation between social support networks and the quality of life (QoL) of Saudi elders. The findings indicated that family significantly contributes to the provision of support and care, with the quality-of-life index being associated with the emotional support extended to the elderly.
Al-Shahrani (2022), the objective was to identify the challenges encountered by the elderly in the digital transformation occurring in Saudi society and to propose a series of solutions to help with these challenges. The findings pointed to the administrative and economic challenges were more prevalent, followed by psychological challenges, and subsequently personal and social challenges.

The research by Al-Harbi, Khalid (2021) focused on social isolation and its effects on the mental health of the elderly in Saudi Arabia. It aimed to assess the degree of "social isolation" experienced by the elderly population and to analyze the "correlational relationship" between social isolation and mental health.

The study (Almutairi, K & colleagues 2021) titled "Barriers to Accessing Healthcare for the Elderly in the Kingdom of Saudi Arabia: A System-Level Analysis" pinpointed the primary obstacles (such as transportation issues, prolonged waiting times, and

the absence of specialized facilities in geriatric medicine) and advocated for the enhancement of tele-medicine and mobile clinics.

In light of the urban transition and the shift from conventional institutional approaches to contemporary technology, a significant number of elderly individuals encounter difficulties in utilizing it and require education and training to navigate modern technological tools. Numerous studies have explored the effects of digital illiteracy on the social and cultural isolation experienced by the elderly, which is regarded as a significant challenge impacting their psychological well-being. Data from the Kingdom for the year 2018 reveal that only 29.05% of elderly individuals (aged 65 and above) utilized smartphones, in contrast to 58.90% who relied on non-smartphones. The engagement of elderly individuals (65 years and older) in the Kingdom with mobile smartphones was notably low, as their phone usage predominantly consisted of making calls, accounting for 99.30%, while the overall percentage of elderly individuals accessing the Internet was merely 15.97% (General Authority for Statistics, 2019).

An analytical examination of the results and suggestions from earlier research indicates a widespread interest in artificial intelligence within the realm of elderly care, aligning with the goals of Vision 2030. Additionally, there is a notable interest in social work as a humanitarian profession specifically addressing this demographic. The results indicate that the integration of technology among the elderly has not achieved the anticipated level of success in enhancing their quality of life. The advantages remain constrained due to the presence of groups experiencing digital illiteracy, which may stem from a lack of knowledge and awareness regarding its application and their capacity to recognize its substantial and holistic benefits. Furthermore, it is observed that research highlights the employment of robots in delivering certain health care services and recreational activities for the elderly as an auxiliary technology, suggesting that traditional service delivery methods are still prevalent. This varies based on the cultural and educational background and social standing of the elderly, with a degree of caution exercised in the adoption of technology due to various economic challenges related to its cost and the willingness of the elderly to embrace its use. The researcher also points out those prior studies have concentrated on the relationship between artificial intelligence and the health conditions and economic status of certain patients and hospital inpatients. This raises the question: what about the other elderly individuals residing with their families or in nursing facilities? Where are the elderly who possess skills that could be harnessed for development in accordance with the vision of the Kingdom of Saudi Arabia? Through an analytical analysis of elderly care policies in Saudi Arabia has uncovered a minimal dependence on artificial intelligence for remote healthcare services among the elderly population. Researchers have emphasized the necessity for implementing digital literacy programs. Furthermore, studies have shown that the elderly perceive their quality of life as predominantly associated with family care. Investigations into elderly care within the Kingdom, alongside the function of social work, have identified significant challenges in care provision, primarily administrative and economic hurdles, followed by psychological issues, and subsequently personal and social difficulties. Evidence has established a link between social isolation in the elderly and mental health issues, exacerbated by the digital divide stemming from generational disparities in technology usage, along with concerns regarding prolonged waiting times. This situation prompts the inquiry: where is the technology that enhances efficiency in service delivery? Additionally, findings reveal a deficiency in facilities dedicated to geriatric medicine, leading this study to advocate for the adoption of tele-medicine. In light of the aforementioned analysis, which underscores the limited application of artificial intelligence despite the innovative nature of these studies reflecting the current societal and institutional landscape, it becomes evident that social work encounters significant challenges in integrating artificial intelligence applications for the elderly. Consequently, the core issue of this study is to analyze the obstacles faced by social work professionals engaged in elderly care when utilizing artificial intelligence to ensure social protection for this demographic, grounded in the principles of elderly rights and the provision of contemporary means to facilitate a dignified existence.

1.1. Study Objectives

Clarifying the challenges facing social work when incorporating artificial intelligence applications to provide social protection for the elderly.

1.2. Study Question

What are the challenges facing social work if artificial intelligence were used to provide social protection for the elderly?

1.3. Study Importance

The study derives its importance from the significance of using modern technologies and employing them to facilitate services and satisfy needs in all areas, particularly with regard to the elderly, as they constitute a segment that cannot be ignored in the Kingdom of Saudi Arabia, as shown in the following table:

Table 1: Shows the Elderly Population Category According to the 2022 Annual Census.

N	Age Group	Total
1	65 to 69	368.459
2	70 to 74	205.343
3	75 and up	288.047

The data presented in Table 1 above, regarding the distribution of various age demographics, reveals a considerable population of elderly individuals in Saudi Arabia that warrants attention. This observation highlights the variety of experiences and competencies among the different age groups depicted in the table. Furthermore, it underscores the presence of numerous and varied needs, particularly concerning technology utilization. Consequently, there is a necessity for a holistic approach to social care, which is characterized by a spectrum of institutional services aimed at their support. This approach must consider the importance of providing opportunities for those capable of contributing to engage in community service through the technological resources of institutions, thereby facilitating the achievement of the Kingdom's vision for elderly care. Additionally, it is essential to monitor the challenges associated with the implementation of artificial intelligence technologies, especially in relation to professional social work practices.

2. STUDY METHODOLOGY

A descriptive desk-based approach was used, relying on what has been written on the subject, either directly or indirectly, in order to clarify the challenges facing the use of social work for artificial intelligence applications in the care and protection of the elderly.

Study Analysis: Content analysis and it is considered as one of the methods of descriptive research.

Conceptual Framework and Theoretical Orientations:

The conceptual framework and theoretical orientations in this study address the discussion of "challenges – artificial intelligence – social protection – the most vulnerable groups." They also address the theoretical treatment of the main issue of the study through the ecological approach in general social work practice.

1- Study Concepts

Challenge Concept: The Oxford Encyclopedia defines them as complex problems or difficult situations that require innovative solutions, resource mobilization, and strategic adaptation to achieve the desired results. (Oxford University Press, 2018).

From a sustainable development perspective (United Nations), they are defined as non-routine obstacles that require solutions beyond traditional approaches (UN DESA, 2020).

The researcher defines challenges as:

-Difficulties faced by social work while using artificial intelligence applications.

-Limitations on the ability of social workers to employ technology in the field of elderly care.

-These challenges require effort and innovation to overcome them by social work colleges and institutes in the preparation process on the one hand, and the readiness of technical institutions to provide their services on the other.

Artificial Intelligence Concept: There is no agreed-upon definition of artificial intelligence, but in general it can be defined as a field of computer science that focuses on building systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, and self-improvement. (Saudi Data Authority 2023).

The IEEE (the leading professional organization) defines artificial intelligence as the theory and development of computer systems capable of performing tasks that require human intelligence, such as visual perception, speech recognition, decision making, and translation (IEEE Standards Association, 2019).

It is also defined as the study of agents that receive inputs from the environment and perform actions. Each agent applies a function that transforms a sequence of inputs into actions (Russell, S., & Norvig, P. 2021).

It is defined as systems that use technologies capable of making predictions, generating content, providing recommendations, or making decisions with varying levels of autonomy (Saudi Authority 2024).

The researcher defines artificial intelligence as a field that helps social workers assist the elderly by:

- Automating routine tasks to help save time and

effort for the elderly.
- Various technologies to enhance the abilities of the elderly to satisfy their needs and invest their abilities in serving the community.
- Various institutional systems and programs that take into account the knowledge, skill, and health levels of the elderly in all institutions that provide services and care for them.

Social Protection Concept: It is considered an essential component of the social contract that binds citizens and residents to the state, and represents a universal human right and an integral part of social and economic rights. Social protection encompasses an integrated system of policies and programs for which the state bears primary responsibility for managing and delivering, to ensure that all individuals have access to a minimum income, as well as basic goods and services that guarantee their well-being and secure a decent standard of living throughout their life cycle. By providing this support, social protection enhances individuals' ability to participate actively in society and enables them to access opportunities for prosperity (Arab Region Forum on Social Protection).

The International Labor Organization (ILO) defines social protection as all policies and programs designed to reduce and prevent poverty, vulnerability, and social exclusion throughout the life cycle (ILO, 2021).

The World Bank refers to social protection systems as consisting of interventions aimed at supporting the poor and vulnerable by strengthening resilience, building human capital, and promoting opportunities (World Bank, 2018).

The World Health Organization (WHO) has indicated that social protection includes cash or in-kind benefits to ensure financial security and access to essential services, especially during crises (WHO, 2020).

The United Nations (UN) defines social protection as a human right to access basic health care, basic financial security, and support for families with children (United Nations, 2020).

The researcher defines social protection as:
- Efforts made by social work to provide for the needs of older adults.
- Various facilities and services provided to different groups of older adults.
- Improving the standard of living and quality of life and protecting older adults from fraud or theft when using technology.

3. THEORETICAL GUIDELINES FOR GENERAL SOCIAL WORK PRACTICE IN THE FIELD OF ELDERLY CARE

The environmental approach is one of the approaches to general social work practice in the field of elderly care, as it clarifies the mutual influence between humans and the environment in which they live in terms of providing various services to satisfy needs or the emergence of problems that affect the interaction of the elderly with others. The general perspective of practice takes this mutual dependence into account, and this approach requires social workers to have a knowledge and skill base for working with individuals, groups, organizations, and communities, as well as knowledge of the methods of providing mutual support among them. Also general social work practice in the field of elder care can be defined as a modern approach involving organized professional efforts by general practitioners with the elderly, based on an ecological perspective and a problem-solving model. It requires the general practitioner to perform many professional roles, based on the cognitive, value, and skill foundations of the profession in the present day, which is characterized by the use of modern technologies. The increase in the number of elderly people has become an issue of concern to researchers and the institutions that care for them in light of the Kingdom's Vision 2030. A study (Al-Shammari, 2023) recommended changing the perception of the use of modern technology by the elderly from being merely a means of entertainment to a means of enhancing their quality of life. It also recommended that social workers employed by institutions and official bodies should be familiar with digital technologies and applications that serve the elderly and use them in their work.

Answering Study's Questions:

Technological advancements have significantly changed our world in terms of work, education, leisure time, social communication, and many other activities that take place in the digital space. It is important to dispel the misconception that older generations do not use technology, as many of them are now familiar with technology, which varies from one community to another and even within the same community. It has become important to promote a culture of healthy aging in which older people are fully integrated into the digital economy. It is important to encourage them to use accessible digital technologies and digital skills designed to meet the needs of older people. Despite this encouraging trend towards the use of modern technology, there are a number of challenges facing the use of artificial intelligence in social work to assist and protect older people.

In discussing the challenges facing the use of artificial intelligence in the field of social work to provide social protection for older adults, the researcher relies on the results of previous studies and the conceptual and theoretical framework of this study, as follows:

First: Challenges arising from the professional training of social workers: The results of previous studies have shown that social workers need training in the use of artificial intelligence technologies in their professional practice, especially in the field of social protection for the elderly.

The most important challenges associated with professional training can be summarized as follows:

- Lack of experience among social workers due to their recent use of artificial intelligence applications.
- Insufficient training on the use of technology in the workplace.
- The novelty of the use of computer technologies in social work practice.
- The curricula for social work students in social work institutes and colleges need to include courses in the field of artificial intelligence.
- Lack of a technology guide on how social workers can benefit from artificial intelligence applications.
- Weak financial and administrative support for digital transformation in some educational institutions.
- Weak infrastructure in wireless communications and electronic programming in some areas.

Second: Challenges related to older adults' knowledge of AI applications: There is an undeniable fact that individuals of all ages, especially older adults, have different abilities. Each individual is unique, and as they age, they retain the ability to learn. Not all older adults necessarily face these challenges. Although statistics and research indicate that challenges exist, the reality is that older adults' experiences and abilities vary.

We note that many of them have been able to overcome these challenges with ease, but many factors in an older adult's life can affect their ability to use technology, including the following:

- Lack of technical skills.
- Explicit fear of using technology.
- Language and terminology.
- The high cost of using technology.
- Physical and cognitive changes in some older adults make it difficult for them to navigate modern devices and platforms and use artificial intelligence applications.
- Resistance to change among some people.
- Website design and security policies sometimes bore users.
- Limited experience and exposure to technology among some older adults may leave them vulnerable to exploitation.
- Some older adults rely on others to use computer and mobile applications and other services.

4. RECOMMENDATIONS

The integration of technology into social work practices broadly, and specifically within the realm of elderly care, necessitates addressing the various challenges associated with the implementation of artificial intelligence applications. This requires a focus on a series of criteria essential for the digital transformation of social work practice, which must be fulfilled as follows:

First: Providing training for social workers on the utilization and application of technical methods within their professional practice.

Second: Emphasizing the significance of digital transformation to align with contemporary demands and the capacity to tackle current social issues in social work education and practice.

Third: Instructing social work students and practitioners on methods for knowledge acquisition, strategies for its application, and how to leverage it effectively, alongside incorporating courses into the curriculum that cover technology and artificial intelligence applications and their use in serving various units within practice fields.

Fourth: Educating and training social work students to utilize technology to develop the skills necessary for their professional endeavors.

Fifth: Considering the individual differences among older adults regarding their engagement with technology, including their knowledge, readiness, physical and psychological capabilities, and educational background.

Sixth: Endeavoring to close the gap that leads to isolation among the elderly, specifically addressing digital illiteracy.

Seventh: Creating digital platforms that are accessible to all levels of elderly individuals to receive a variety of services, including technologies that enable them to utilize their abilities for contributing to social development.

Eighth: Implementing training and educational programs for older adults on all technological advancements, such as system updates or the introduction of new systems, to enhance their usability.

Ninth: Qualify individuals who are approaching the legal retirement age in government agencies to

welcome the new phase and benefit from technology in a way that makes their lives easier, as well as similar groups in the private and charitable sectors, reaching all groups in society.

Tenth: Expand the use of technology in social institutions that provide services to the elderly and focus on providing adequate technical training to service providers to enable them to provide high-quality services and overcome the difficulties of waiting and transportation for the elderly.

Eleventh: Encourage researchers to conduct research in the field of using artificial intelligence applications in service delivery and optimal use for all groups, especially the elderly, as they are the most in need due to their physical, psychological, mental, and social characteristics.

Twelfth: Employ social workers who have the technical skills to work with the elderly and ensure their continuous training before and during their work on new technologies.

Thirteenth: The study calls for the development of national policies regulating the use of AI technologies in the provision of social work, with defined standards for privacy, security and transparency in data handling.

Fourteenth: Issue an ethical guide on the use of artificial intelligence with vulnerable groups, particularly the elderly, to ensure that they are not subjected to any form of fraud, discrimination or abuse.

Fifteenth: Involve social workers in all stages of the design and implementation of artificial intelligence technologies to ensure their suitability to the social and psychological needs of the elderly.

Sixteenth: Allocate financial and research resources to encourage applied studies and pilot projects aimed at employing artificial intelligence in social work, especially in the field of elderly care.

Seventeenth: Develop and expand the digital infrastructure in institutions concerned with elderly care, while ensuring that these services reach population groups in remote areas.

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