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Enhancing caregiving for older adults: meeting basic needs and overcoming challenges in e-homecare

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ABSTRACT

Ensuring proper care for older adults in their homes is becoming increasingly important as the older adult population grows. This paper investigates caregivers' perspectives regarding their care for older adults and their acceptance of e-homecare technology. This is a qualitative study with data collection through interviews with five caregivers representing a range of qualifications. A thematic analysis was conducted to gain insights into their experiences and preferences. The study reveals three primary findings that contribute to enhancing caregiving for older adults: i) the significance of meeting the basic needs of homecare technology, such as medication administration, vital sign monitoring, and nutrition management; ii) the caregivers' attitudes towards the acceptance and integration of e-homecare technology into their practices; and iii) the challenges faced in implementing and utilizing e-homecare technology effectively. These findings highlight the importance of addressing the fundamental requirements of e-homecare and overcoming the obstacles associated with incorporating technology, ultimately improving the quality of care provided to older adults in their homes.

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1. INTRODUCTION

The ageing population is proliferating worldwide, as reported by the World Health Organization [1]. In 2020, the number of people aged 60 and older exceeded that of children under 5. By 2050, the world's population over 60 years will almost double from 12% to 22%, reaching 2.1 billion. This demographic shift has led to increasing demand for long-term care as older adult individuals experience declines in their physical, cognitive, and emotional abilities, requiring assistance with daily activities. Traditionally, family members have assumed the role of caregivers, but the availability of family caregivers is decreasing due to changing family structures, demographic shifts, and geographic dispersion.

Caregivers, particularly family, community, and volunteer carers, are indispensable to the health care of elderly individuals [2]. Carers assist seniors in long-term, home-based, and community-based care systems [3]. These carers assume substantial caregiving responsibilities and frequently advocate and coordinate healthcare services [4]. Carers are responsible for assisting and supporting older adults to enjoy their daily lives, but they are more likely to be physically and mentally affected, resulting in a more significant decline in their quality of life

[5]. There are two different types of carers: formal and informal. Formal care for the older people typically refers to paid care services provided by a healthcare institution or private individual to a person in need [6]. Informal care is gratuitously provided by family, close relatives, friends, and neighbours [7]. Both types of caregiving entail various tasks, but informal carers are seldom adequately trained to perform them. Formal carers are field-trained, with varying degrees of training [8]. Formal care is organized following a complementary care model in which healthcare services supplement family care necessitating collaboration between professional and family carers and the exchange of high-quality, two-way information regarding needs and available services [4]. These demands can directly impact the health of carers, who may experience feelings of exhaustion and emotional distress [9].

Thus, it is essential to develop care management solutions that enable health services to better support families and carers. eHealth is an intervention that may help carers maintain their health and cope better over time. The healthcare industry increasingly employs e-health tools. E-health and m-health can refer to any electronic device or monitoring system used by healthcare professionals or individuals to monitor or improve their health status [10]. Carers' use of health information technology to access health records or find health information to inform their caregiving roles has become widespread [11]. Given the rapid and ongoing development of health technology, it is inevitable that policymakers, healthcare providers, and patients will face difficulties in adapting to new technologies [12]. E-homecare offers potentially cost-effective remote support for chronic disease self-management, as well as convenience, access flexibility, and individualized feedback [10]. E-homecare, which includes web-based communication, mobile phone apps, and smartwatches or wrist monitoring devices, has demonstrated promising intervention results for preventing and treating chronic diseases in older adults [13]. Reported advantages of e-homecare interventions over traditional face-to-face interventions include relatively simple scalability, broad accessibility despite socioeconomic and demographic differences among users, personalization, immediate delivery, and real-time feedback [14].

The study by Rochmawati *et al.* [15] provided information on acceptance and preference for existing health monitoring technologies, specifically among older people in Indonesia. However, research concerning caregivers' adoption and use of technologies in home-based care for older adults in Indonesia is still limited. Caregivers' perceptions and acceptance of e-homecare may be critical in its successful implementation. Understanding caregivers' attitudes towards e-homecare can help to identify the factors that affect the adoption of these technologies and inform the design of interventions to promote their use. With an ageing population, the demand for health and social care services is increasing, and the population is increasingly turning to mobile systems for assistance and information [16]. Hence, investigating factors associated with family caregivers' experiences regarding equitable access to information and involvement in decisions may illuminate areas of proper care with critical civil rights aspects. Exploring caregivers' beliefs, experiences, attitudes, and expectations regarding rapidly evolving e-health services enables us to comprehend the factors influencing adherence to these primary care tools [12]. By understanding these experiences and explaining them within the context of self-evaluation, we hope to expand the relevant body of knowledge and provide a solid foundation for future interventions and research. Therefore, we endeavoured to describe in greater detail the caregiving experience of these family caregivers and to determine how they feel, think, and behave in their challenging situations and what motivates them to persevere. This aspect of perception is essential in the context of developing e-homecare technology for use in Indonesia.

Based on the background above, this study's research problem is that the ageing population is growing worldwide, with an increasing demand for long-term care due to physical, cognitive, and emotional declines. The availability of family caregivers is decreasing, thus making it imperative to develop solutions that enable health services to better support caregivers. E-homecare interventions can provide potentially cost-effective remote support for the self-management of chronic disease, as well as convenience and access that is both flexible and convenient. Despite the potential benefits of e-homecare, the adoption and use of these technologies in home-based care is still limited. Understanding caregivers' attitudes towards e-homecare can help to identify the factors that affect the adoption of these technologies and inform the design of interventions to promote their use. Exploring caregivers' beliefs, experiences, attitudes, and expectations regarding rapidly evolving e-health services enables us to comprehend the factors influencing adherence to these primary care tools. This article aims to expand the relevant body of knowledge by understanding and explaining these experiences within self-evaluation to provide a solid foundation for future interventions and research.

2. METHOD

2.1. Design

This study aimed to explore caregiver perceptions in caring for older adult patients. A qualitative narrative method was adopted to understand caregivers' perceptions of caring for the older adult and their understanding of the need for features in e-homecare applications. This approach can provide a deeper understanding of what needs are based on the family's experience when caring for older adult patients, especially those related to assistance and information that health workers can replace. In addition, this approach can present

more accurate data based on the perspective of the informant and a more naturalistic experience in the natural environment [17]. The study was conducted under ethical approval from the Health Research Ethics Committee of Universitas Aisyiyah Yogyakarta (UNISA) No.1555/KEP-UNISA/IX/2022.

2.1.1. Setting

This study was conducted with a suburban family in Yogyakarta's Special Region. Most of the population is Javanese, and Javanese and Indonesian are the predominant languages. The majority of older residents in this region is retirees. A technique of purposive sampling was used to recruit participants for the study. The informants were selected based on their experience caring for older adult patients, ranging from older adults who had recently experienced illness to older adult patients who could not move due to degenerative diseases. In this case, the selected family is a family or caregiver who has directly cared for the older adult, although not entirely because of the shift in care in the family. The caregivers are those who have done caregiving to family members, taking into account variations in age and use of technology and experience using health-based applications or webs. Informants confirmed their volunteerism and willingness to be involved in the research when contacted directly for in-depth interviews. Informants consist of I1, who has a background as a family member who intensively cares for two older adults with diabetes and stroke. I2 has a background as an informal caregiver recruited by the family whose role in caring is limited to a substitute for the family. I3 has a background as a grandson who is directly caring for older adults but less intensive because they have other responsibilities, I4 has a background as a formal nurse who carries out professional work as an older adult nurse in a hospital, I5 has a background as a grandson who directly cares for old adult but only in short shifts because he is still in school. Further details of the informants can be seen in Table 1.

Table 1. Details of informants

Participant	Age	Sex	Educational background	Relationship with older adults	Caregiving durations
I1	72	Female	Bachelor	Daughter	Eight years
I2	51	Female	Primary School	Caregiver	Three years
I3	25	Male	Bachelor	Grandchild	Three months
I4	22	Female	Bachelor	Caregiver	One year
I5	22	Female	Bachelor	Grandchild	Four years

2.1.2. Data collection

Some of the questions asked in data collection through interviews were related to the needs of older adults. Some of the questions asked were related to the care needed in handling older adults, the outpatient needs of older adult patients, diseases suffered by older adults being treated, actors who took care of older adults at home, medications that older adults are needed, the data needed by the family in caring for older adults at home, how to control the physical and psychological health of older adults, the scheduling system for older adult activities at home, obstacles in managing the older adult, family acceptance of older adult care technology at home, features needed by families when using m-health technology system at home.

Data were collected using in-depth interviews with informants, and audio data was recorded. The data was collected in September 2022. The interviews aimed to ascertain the families' perception regarding the care of older adult patients and the acceptance of health technology in the treatment. In-depth interviews were conducted based on interview guidelines developed through the literature. Then in-depth interviews were obtained according to the informants' findings based on each informant's experiences. Needs and problems that occur. Interviews were conducted for 30 to 60 minutes, averaging 40 minutes. Interviews were conducted face-to-face at the informants' houses. Interview recordings were kept in a separate folder; only the research team could access the recorded data.

2.1.3. Data analysis

Thematic analysis was used to interpret and analyze the data [18]. The researchers read the transcripts multiple times to familiarize themselves with the data and to recognize and search for patterns of meaning and issues of interest within the data. Subsequently, codes were created through discussion, a colour was assigned to each code, and marginal notes were added to the transcripts. The researchers identified and grouped all codes with similar meanings to establish categories. In addition, themes were identified and labelled following the relationship between categories. Some themes were identified in vivo, providing verbatim participant response transcripts. As data evidence, the researchers then composed a narrative report supported by participant responses.

2.1.4. Trustworthiness

Trustworthiness was established by member verification. Member checking is a process for evaluating, validating, and grading the reliability of qualitative data [19]. For their verification, the participants received verbatim transcripts of the interview findings. The participant check procedure was taught via WhatsApp, and participants also received a transcript file. Participants had twenty-four hours to respond to the researcher's request for feedback; those who did not answer were presumed to have agreed with the written transcripts' results. The member-checking results were subsequently utilized in the data analysis process. Competent peer researchers can analyze and evaluate a study's transcripts, categories, themes, and ultimate results using this method [20]. In addition, a plan for interviews was devised as a result of these discussions.

3. RESULTS

3.1. Meeting basic needs in E-Homecare technology

The qualitative findings cast light on the subtheme of meeting the physical needs of older adults, such as administering medications, monitoring vital signs, and ensuring adequate nutrition. The severity of their health condition is a significant factor in determining the required level of treatment. Memory difficulties were identified as a significant concern in the case of the participants' father and mother-in-law, who had endured a stroke. To combat this, medication reminders were essential for ensuring proper administration. In addition, participants emphasized the importance of companionship and assistance with fundamental activities such as using the restroom. Older adults also participated in twice-weekly rehabilitation sessions focused on walking exercises to aid their recovery. In order to provide optimal care, thorough monitoring and control of the patient's medication by a physician were emphasized. These findings highlight the importance of addressing physical needs, providing medication reminders, monitoring vital signs, and ensuring adequate nutrition to promote the well-being of older adults under care.

> "*It depends on the severity of their suffering. Recently, both my father and mother-in-law experienced a stroke. The primary issue is that older adults frequently struggle with memory and require medication reminders. As previously mentioned, they should be accompanied if they require assistance to perform fundamental activities such as using the restroom. In addition, they undergo therapy twice per week, typically consisting of walking exercises. The physician must meticulously monitor and control the patient's medication.*" (I1)

The importance of addressing *overall health and enhancing the quality of life* for older adults was emphasized in the study. Prioritizing physical comfort and hygiene, the participants mentioned applying ointments to their daily care regimen. They emphasized that the health of their older adult loved ones significantly impacted the harmony and tranquillity of their home. This acknowledgement inspired the family to work assiduously together, emphasizing the significance of teamwork in providing essential care for their elders. These results highlighted the participants' holistic approach to enhancing their senior relatives' well-being and quality of life.

> "*When necessary, we must also apply ointments as part of our care for our elders. As far as nutrition is concerned, we provide them with Nutrisol milk. From our family's perspective, our elders' health significantly impacts the harmony and tranquillity of our home. Therefore, our family must work diligently to provide essential care for our older adult loved ones."* (I3)

Another basic need for older adult care is psychological monitoring and establishing interpersonal closeness. Engaging in conversation with older adults is a profoundly rewarding experience that brings pleasure and happiness to both parties. During leisure time, the participant actively seeks opportunities to interact with older adults, inviting them to share positive and joyful stories. This interaction generates passion and enthusiasm. However, the participant also knows the difficulties when older adults are left alone. During such periods, they may experience difficulties with feeding and overcoming emotional barriers. These findings emphasize the significance of psychological monitoring and establishing interpersonal intimacy with older adults to address their emotional well-being and ensure their happiness and contentment.

> *"Conversations with the older adult are a sincerely enjoyable experience when interacting with the older adult. It brings pleasure and joy to both parties involved. I prioritize inviting them to share happy and positive stories during my leisure time, which generates enthusiasm and excitement. It becomes apparent, however, that when they are left alone without anyone to converse with, they may experience difficulties, particularly with feeding and overcoming emotional obstacles."* (I2)

The qualitative findings emphasize the importance of professional assistance in caring for older adults. Participants acknowledged the existence of qualified and competent graduate nurses who assisted their older adult mothers. They observed that the nurses paid more attention to their mothers' dietary and physical requirements, resulting in a more pleasant and attentive experience. Participants valued the enhanced care and assistance provided by professional nurses, highlighting their competence and dependability in delivering quality care. This highlights the significance of professional assistance in assuring the health and well-being of older adults. In addition, the participants disclosed that they consulted physicians and online resources to learn about geriatric care, including treating specific conditions like uric acid. In addition, they esteemed the knowledge of family members with extensive experience in elder care. The findings highlighted the difficulties in comprehending the complex care needs of older adults, the need for comprehensive support beyond the provision of sustenance, and the importance of interpersonal interactions.

> "*Even though we can perform certain duties independently, we still require professional assistance. In this instance, nurses are accessible to assist the mother. Fortunately, the nurse assistant is a registered nurse graduate, ensuring high competency and dependability in their care."* (I1)

> *"My family obtained information regarding senior care from physicians and the internet. Due to the complexity of the task, inexperienced individuals may find it more challenging to provide appropriate care."* (I3)

The qualitative findings also indicate that *scheduling activities* for geriatric patients are essential to their care regimen. Although these schedules may not be explicitly documented, participants indicated that family members are essential in organizing and carrying out these responsibilities. Typically, the schedule includes cleansing and medication administration, ensuring that these essential tasks are consistently performed. This emphasizes the significance of coordination and planning within the family to ensure that older adult patients receive the necessary care and attention.

> *"Typically, the care routine for activities such as bathing and medication administration is organized, though it may not be explicitly documented. Frequently, family members play a significant role in organizing and implementing the schedule for these responsibilities."* (I1)

The findings from the qualitative data highlight the importance of the caregiver's proximity and participation in assuring medication compliance among older adult patients. Participants emphasized the existence of designated time slots for medication administration and accepted responsibility for ensuring that medications were administered at the appropriate times. On the medication packaging, clear instructions and dosage information were a helpful reference for adhering to prescribed dosages. Importantly, participants noted that any unused medications indicated noncompliance with the prescribed regimen. These findings highlight the critical role of caregivers in attentively monitoring medication intake and promoting medication adherence. Their near presence and active participation in medication administration are crucial in promoting medication adherence and general health for older adult patients.

> *"There are allotted periods for medication administration, and I ensure that the medications are administered appropriately. Instructions and dosage information are printed on the medication boxes, signifying the prescribed weekly dosage. If leftover medications are in the box, it suggests that the prescribed medications were not consumed as directed."* (I2)

When providing for older adults, it is essential to address mobility, hygiene, wound care, and dietary preferences, as indicated by the findings. Participants cited difficulties in treating wounds in damp areas of the body and the need for family members to learn about wound care. A focus was also placed on comprehending the preferences of mobile and communicative older adult individuals and addressing nutrition difficulties. The findings demonstrate the complexity of care for older adults.

> *"If the patient has a wound, especially in humid regions, it can be harder. Wound treatment prevents degeneration. Even with skilled wound care, family members must manage old wounds. Nurses and families of older adult patients who can move and speak struggle to understand their preferences. Poor taste, weakening swallowing muscles, and degenerative diseases might cause feeding problems in older persons. Having a heart problem complicates matters. Recognizing that older people's pleasure and contentment might be complex and unexpected, it is important*

to pay extra attention to these issues, especially since they are intimately tied to food consumption." (I1)

Social interaction and nearby activities are essential to prevent feelings of isolation and tension in older adults. To prevent isolating older individuals, it is necessary to strike a balance between surveillance and independence, according to the findings. Participants were concerned about the difficulties their older adult loved ones had with food, including differences in flavour perception and picky eating behaviours. Despite the ease of interacting with parents, the absence of explicit guidelines can make decision-making difficult in such circumstances. Providing older adults with opportunities for social interaction and nearby activities can reduce feelings of isolation and tension.

"It appears that you have no specific issues to address. Regarding the story of the person who escaped through a window, you believe the main point is to strike a balance between keeping older people under surveillance and being excessively restrictive. It is essential to avoid isolating them, as this can lead to feelings of dread and rage. Due to differences *in taste perception compared to younger individuals, older individuals, including your mother, may struggle with food. Additionally, they may exhibit picky eating behaviours. Without a distinct basis or guideline, it can be difficult to determine the best course of action, although relating to your parents is simple.*" (I1)

3.2. Accepting e-homecare technology

Seeking *prompt medical advice* about caloric intake and meal planning, including specific recommendations for evening and morning meals, can provide patients with fast support. Dietary considerations significantly impact overall health and should not be neglected. A consultation with a physician can ensure that the patient receives personalized advice and dietary options that support his or her health and nutritional requirements.

"*Consult a physician about the number of calories you need (for instance, how many calories should consume) and the type of food you should eat in the evening and the morning. Diet is also crucial.*" (I1)

The participant emphasizes the significance of prompt access to health concerns information. In particular, they are interested in meal timing, caloric intake, and comprehending common complaints among older adults that may indicate particular health conditions. They believe that having such information readily available through a technological application would be highly beneficial, allowing for improved decision-making and more effective treatment options in home care settings.

"I consider meal timing and caloric consumption to be significant. In addition, I am interested in learning about prevalent complaints among older adults *that may indicate particular health conditions. For instance, if a patient exhibits symptoms of elevated cholesterol, it would be beneficial to be aware of the most effective treatment options. The primary idea is that having such information readily available within the application would be extremely advantageous in the future."* (I4)

The participant reflected on their experience transporting their ailing grandmother to a distant hospital and the difficulties posed by older adults' health. They emphasize that mobilizing older adult patients for medical care can be complex and physically demanding. As an alternative, the participant suggests the convenience and advantages of having a physician make house calls to the geriatric. By receiving medical care in the luxury of their own homes, older adults can avoid the additional strain of transportation and may experience an improvement in their overall health.

"When my grandmother became ailing, we had to transport her to a hospital located a considerable distance away. Nonetheless, the complexity of caring for older adults *became evident. Even though we intended to seek medical treatment at the hospital, the lengthy car ride left my grandmother exhausted and uneasy. In such cases, having a doctor attend to older adults at home may be preferable to transporting them to a doctor's office or hospital. In this manner, they can receive necessary medical care without the added burden of travel."* (I5)

3.3. The challenge of adopting E-homecare technology

The participant agrees that technology cannot wholly replace the necessary warmth and human interaction when caring for older adults. They acknowledge that while technology can provide certain benefits, there are concerns about its capacity to completely supplant the compassionate care that older adults require. It may be difficult for technology to replicate the personal connection, empathy, and comprehension that human caregivers provide. This viewpoint emphasizes recognizing technology's limitations in caring for older adults.

> *"I appreciate your stance that technology cannot entirely replace the required warmth and human touch when caring for the older adult. Providing care for older adult individuals requires reliance on more than just technology. Even though technology can be useful in certain respects, it remains questionable whether it can entirely replace the compassionate care* older adults *require. The personal connection, empathy, and comprehension provided by human caregivers are valuable qualities that may be difficult to replicate using only technology."* (I3)

The participant is reluctant to use other caregiving applications, as they primarily rely on WhatsApp (WA) for family communication. Their focus is on primary caregiving duties such as feeding, bathing, and medication administration; they have not yet considered the role of digital technology in older adult care. This perspective emphasizes a potential generational divide in adopting and utilizing technology for homecare, as the participant's current approach is more rooted in conventional caregiving methods.

> *"As a caregiver, I hesitate to use other applications because I predominantly communicate with my family through WhatsApp (WA). When caring for older adults, I have focused on assisting them with feeding, bathing, and medication. I have not yet contemplated digital technology's role in senior care."* (I2)

4. DISCUSSION

Increasing numbers of older adults, especially those with disabilities, make the health of caregivers a vital public health concern [21]. The caregiver's age is a crucial characteristic for the reasons listed below. First, older adult caregivers who report poorer health than their younger counterparts are potential recipients of care [22]. Second, most of those using long-term care services are over 65 years old [23]. Moreover, due to changes in family structure and the traditional value and philosophy of filial piety, these older adult care recipients may provide care for each other [24]. Thirdly, the majority of people retire at age 65 and may not have any family or professional obligations that would prevent them from becoming caregivers [21].

Support for informal carers is dispersed throughout the social security system's various sectors. Creating a coherent policy to support informal carers is complex and requires a forward-thinking approach. Concerning the informal carer, who is best suited to monitor the progression of the patient's problem, the fragmentation of information regarding supportive policy measures is problematic [25]. The scope of Wasilewski *et al.* [26] study, which focuses on family carers, is highly relevant to our proposal. The study reveals that carers were satisfied with the usability and accessibility of the applications, but usage was generally low and decreased over time. Our evaluations confirmed that usage decreases over time, but not for all carers and that this is contingent on how the health team reacts to the information transmitted by the carer.

Regarding the preferences of family caregivers regarding technology, there is evidence that technology acceptance increases when designed to meet caregiver needs and expectations [27]. In addition, caregiver acceptance of technology increases when caregivers perceive the technology to be both beneficial for daily life and easy to use. This small but expanding body of research provides crucial data for the user-centred design of technologies to support family caregivers.

Numerous carers believe that technology will not surpass their current practices. Several social-cultural, ethical, and technical factors influence the adoption and scalability of technologies for family carers in light of the rapid emergence of many new technologies [28]. Culture manifests in various ways in people's attempts to more systematically comprehend social phenomena that reflect time, ageing, age groups, and social structures [24]. Parents of middle age were raised in a culture that traditionally emphasized a more vertical relationship between parent and child. The younger generation, in contrast, grew up in an environment that emphasized Western values of individualism or more equal relationships with parents [5].

Consequently, these generations have different cultural values, perceptions, behaviours, and expectations regarding caregiving. In their later years, parents are more likely to take care of themselves or to view elder care as the responsibility of the government or society [29]. Seniors who have not planned for their later years appear to rely on their children, hoping for assistance from relatives in times of illness or considering a nursing home as an alternative [24].

When designing e-homecare for family carers, multiple factors must be considered. Privacy and security were highlighted [30], as evidenced by the contrast between public and private messaging approaches and password-protected websites. Many of the details shared on websites are intensely personal and emotive. The website's design contributed to most reasons for rejecting and mistrusting a website, such as its complicated and cluttered layout, corporate appearance, and irrelevant content [31]. However, the reasons for selecting and trusting a website were primarily based on its content, including impartial information and personalized content [16].

Moreover, complexity is a concern. Some carers found functions such as private messaging, decision aids, and login screens difficult, which hindered their efficacy [32]. Using familiar-sounding language and a solid iterative approach, in which the intervention undergoes multiple development and optimization cycles, are two strategies for overcoming this obstacle [7]. Customization can reduce the amount of information and resources that carers must review, and carers may be more motivated to use a relevant intervention tailored to their needs. According to this review, carers found non-personalized interventions frustrating, and their needs were not met. The digital divide is the issue of internet literacy and access. A 2015 study found that almost all adults over 70 had trouble using the intervention, suggesting a divide between those who use or can use the internet and those who do not [16]. The study has limitations. First, the sample size of five carers limits our ability to conclude. The study's exclusive focus on Yogyakarta may overlook significant regional and cultural variations in caregiving. The lack of diversity among participants reduces the generalizability of the results, as different demographic groups have distinct care needs. Short duration and self-reported data may also contribute to bias. The lack of a control group and technological limitations diminish the study's validity. These limitations do not invalidate the study but call for additional research to improve generalizability and reliability. The future will require high-quality research that describes interventions, identifies crucial factors, and meets the needs of carer groups. Future research should also address the digital divide and employ theoretical frameworks to comprehend interventions that support carers.

5. CONCLUSION

This study illuminates the essential aspects of improving e-homecare for seniors. By examining the attitudes and experiences of home-based carers, we have gained valuable insights into meeting the basic needs of older adults and overcoming obstacles associated with their care. The findings emphasize the importance of addressing care's physical, psychological, and social aspects, including medication administration, vital sign monitoring, nutrition management, interpersonal interaction, and activity scheduling. In addition, adopting and implementing e-homecare technologies present opportunities and challenges for enhancing caregiving practises. The study highlights the need for a holistic, person-centred approach to caregiving that combines technological advances with human contact. By recognizing and addressing the specific needs of older adults and providing carers with the necessary tools and support, we can enhance the well-being and quality of life of older adults who live at home. Future research should investigate strategies for implementing and optimizing e-homecare technology while preserving the human element of caregiving.

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