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Bedfast Nursing Home Residents' Perception of Quality of Life and the Role of Technological Innovations

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Abstract

Long-term care institutions reveal insufficient focus on the important issue of how well their bedfast residents are doing in life. This research assesses how bedfast nursing home residents perceive their well-being together with their daily life situations and technological advancements that might boost their quality of living. People requiring bed rest endure multiple physical and psychological along with social problems which produce feelings of social isolation and depression and create the need for caregiver support. Technological improvements in smart beds as well as telemedicine and robotic assistance and virtual reality and automated environmental controls enable better comfort along with healthcare accessibility for social interactions among these residents.Finding from qualitative surveys and interviews unveiled the main components affecting residents' live quality assessments and incorporating independence and pain control and speaking opportunities and meaningful interaction opportunities. The research presents both achievements and constraints regarding assistive technologies when treating these specific requirements. The implementation of technological solutions for physical comfort and social engagement proves effective yet encounters barriers from both financial constraints and resident and staff reluctance to change and the need for personalized solutions.The research demonstrates why human-centered development must be used to build technological solutions that benefit bedfast nursing home residents. The implementation of these technologies demands several healthcare professionals along with engineers and caregivers who must work together to develop systems which suit elderly patient requirements. Research needs to concentrate on making affordable and user-friendly innovations available to the public because these innovations will facilitate resident empowerment along with promoting dignity and independence and overall well-being.

Keywords: ***Bedfast residents, Nursing homes, Quality of life, Assistive technology, Smart healthcare, Telemedicine, Elderly care, Virtual reality.***

1.Introduction

Throughout several decades the Dutch nursing home population experiencing total immobility has grown substantially which creates an essential issue for healthcare professionals together with governmental authorities. The patient category of bedfast affected 4.6% of nursing home residents in 1995. Nursing home resident bedfast numbers have risen from 4.6% in 1995 to 5.7% in 2011 and as per projections the current percentage exceeds 8% of residents due to bodily impairments or persistent illness or extreme frailty (CBS—Statistics Netherlands, 2007). The rising numbers demonstrate healthcare policies moving toward promoting home-based care services for patients with moderate issues thus requiring nursing homes to accept only individuals with profound medical complexity or dependency. The increase in numbers of bedfast highly dependent residents requires long-term care facilities to revise their support strategies for this high-risk demographic(1).

For bedfast individuals the most important problem they experience results in a major decrease in their overall quality of life (QoL). Studies prove that bedridden older adults who stay in bed face increased bodily pain alongside higher mental health difficulties and social withdrawal than people who can walk (Campbell, 2009; Rubin et al., 2016). Bedfast residents experience complete helplessness and develop both physical deterioration and helpless feelings as well as frustration because they need caregivers to complete minimal everyday functions. Depression and anxiety grow more severe as bedfast patients increasingly depend on others for their basic physical needs which causes them to lose control over their personal life(2). The major psychological challenge faced by bedfast individuals increases when these nursing home residents lose their ability to participate in communal activities because of their immobility (Arslantas et al., 2009).

The recognition of Quality of Life deterioration among bedfast nursing home residents continues to increase yet research to improve their QoL remains insufficient especially when combining technology-based approaches. The

majority of research studies dedicated to nursing home residents primarily discusses medical issues like pressure ulcer prevention and chronic condition management according to Okuwa et al. (2006). Current research projects on medical issues and pressure ulcers neglect the essential social and psychological requirements among bedfast nursing home residents. Assistive technology including smart communication devices and digitally controlled beds proves to improve daily living experiences while enhancing the autonomy of this population according to emerging evidence. Research needs to explore better how these technologies function within nursing home systems while showing their direct advantages to residents.

The study aims to understand the life experiences of nursing home residents who are bedbound while examining the ways innovative technology could improve their daily quality of life. The research focuses on identifying two essential points: Which critical obstacles are experienced by bedfast nursing home residents and (2) What effect these obstacles have on their quality of life assessment. What technological frameworks will help boost the independence level and social interaction alongside comfort capability for bedfast nursing home inhabitants? This research investigates two essential questions about this population to develop supportive living spaces through valuable outcomes.

The research implements hybrid methods by combining open-ended interviews with standardized SF-12 questionnaires to measure the health quality of bedfast residents. The study included two nursing homes located in the Netherlands where seven participants engaged in the research protocol. The research analyzes major factors which shape QoL for bedfast residents through thematic analysis while evaluating technology-based solutions that can help address these challenges(3). Research findings provide specific actionable guidance to nursing home administrators together with caregivers and policymakers about the necessity of enhancing their funding toward assistive technology and novel care system logic.

Prevalent research applies strongly to older adults combined with healthcare resource constraints in our current population. The growing number of bedfast patients demands the creation of enduring strategies which promote their well-being since long-term care requirements continue their upward trend. Modern technology enables nursing homes to build spaces that promote empowerment and comfort thus minimizing resident dependence on helpers while improving their overall quality of life. This study demonstrates why eldercare facilities must integrate accessible technology into care areas to enhance the dignity and independent activities as well as social relationships of bedfast inhabitants.

2.Methodology

The research design integrates mixed methods to provide an extensive evaluation of bedfast nursing home resident QoL and determine how technological progress might boost their wellness. The choice of a mixed approach was necessary because it enables researchers to develop an enriched understanding of participant realities by uniting qualitative and quantitative data. Such research design weaknesses would arise when qualitative examination lacks measurable comparison elements and quantitative methods fall short of exploring emotional experiences of bedfast patients. Through the union of quantitative and qualitative data collection approaches this research provides complete analysis that showcases statistical evidence and gives real-life experiences of immobilized patients.

Two nursing homes in the Netherlands participated in the study according to their population diversity and their agreement to conduct research about innovative care methods. The chosen facilities housed both active and bedfast residents so researchers could study people who spent at least twelve hours flat in bed because of physical disabilities and illness. Researchers established selection requirements that confirmed each volunteer experienced direct challenges within periods of immobility as well as dependency on caretakers and unsatisfactory modern technology solutions. The investigators devoted thorough attention to ethical aspects before initiating the research. Fontys Committee for Ethics in Research allowed the research to proceed without ethical approval due to its non-invasive character yet every single participant provided consent before beginning the study whether they offered it directly or through their designated representatives to ensure voluntary and ethical study participation(4).

2.1 Setting and Participants

Participant recruitment played an essential role during research development. The initial research involved one nursing home but when three bedfast residents failed to match the study requirements the researchers included a second facility that had nine suitable participants. The research benefit from this expansion because it added participants who created a more inclusive representation. Seven residents participated as research participants after excluding five candidates who needed to be dropped from the study because two suffered from severe dementia and communication problems while three more declined because of personal reasons or discomfort.

The researcher applied specific criteria which determined participant selection. The study required participants who met the following three conditions: (5) spending all or twelves hours each day in bed due to bedfast classification, (2) capable of speaking Dutch for interviews, and agreeing to participate either personally or with caregiver assistance for consent. The researchers selected persons capable of sharing their experiences since this approach generated

substantive findings applicable to enhancing care settings. People with diverse physical health situations participated in the study because they had conditions such as paralysis, arthritis, limb absence and long-term illnesses requiring extended bed rest. The period of their nursing home residence spanned from several months to multiple years bringing diverse insights about short-term versus long-term experiences of being bedfast.

2.2 Data Collection: Interviews and Questionnaires

The researcher employed two main data gathering techniques which included semi-structured interviews as well as Short Form-12 (SF-12) questionnaire administration. Each interview took place within the residents' private rooms to establish a comfortable location that supported free discussion. The interviews followed a 45-minute duration and utilized a pre-designed topic list to investigate two main aspects:bedfast residents' total life quality through social, psychological, physical evaluation and their bed use together with environmental exposure and technological accessibility. Each domain subject discussed how their daily routines functioned with their social circles together with their psychological state and caregiver relationships and ways they handled their situations. The second domain evaluated bed design elements together with assistive technology features with specific observations for improvement regarding comfort functions and independence concepts.

The SF-12 questionnaire served as an additional research instrument with participants to determine their measurable health conditions both physically and mentally. The SF-12 consists of twelve questions which evaluate health status regarding physical action and affective function and emotional state and social relations while measuring physical health outcomes. The score evaluation contains two primary sections which measure Physical Component Summary (PCS) and Mental Component Summary (MCS). The systematic scores enabled researchers to determine the effects of long-term bed confinement on health conditions and establish correlations between interview findings and standardized quality of life assessment tools.

The research obtained its data from both questioning techniques and in-depth conversation methods. The interview process recorded human stories along with emotional responses whereas the SF-12 scores established standardized techniques to recognize variations in participant Quality of Life. Every participant demonstrated poor quality of life according to the research findings revealing six participants in the inferior physical well-being category and three individuals displaying suicidal tendencies(6). The research validated previous studies about bedfastness-related negative impacts thus validating the requirement for technological solutions that improve patient outcomes.

2.3 Data Analysis

The data analysis technique utilized two separate approaches which included case-by-case description and thematic analysis. The research team first transformed participant information into detailed case studies which combined elements such as individual background details along with physical and mental well-being assessments and social functioning evaluations as well as measures for control and dependency and technological and bed-related interactions. The detailed case descriptions allowed researchers to see individual experiences in depth which made the identification of shared aspects and differences among participants feasible.

A thematic analysis using Braun and Clarke's (2006) six-step framework was performed after the case study completion. The data analysis procedure begins with data familiarization followed by initial code creation and theme discovery before theme examination for theme definition and nomenclature until a final analysis is produced. Two different analysts worked independently on transcript analysis for both reliability and to minimize research bias. Mathers and Rodriguez used response classifications for the identification of broad themes about dependency and control along with social isolation and technology usage and improvements to the bed environment.

This method enabled individual assessment in addition to between-case comparison of data to generate results which extended beyond single case observations and captured larger patterns among such residents. The research successful identified shared themes and care challenges to create useful recommendations about caring practices and technological integration in nursing homes.

3.Results

These findings deliver essential knowledge about nursing home residents who require bed rest by investigating QoL status together with social connections and caregiver reliance and diagnostic technology effects on daily wellness. Analyzing both interviews under thematic analysis and utilizing the Short Form-12 (SF-12) questionnaire resulted in identifying several core themes. The findings demonstrate four major aspects: (1) social isolation affecting mental well-being, (2) emotional and psychological aspects of resident dependency, (3) review of existing assistive technologies and their use limitations, and (4) how innovative bed and room control system advancements can help increase resident independence. The following section presents extensive analysis and quantitative measurement using SF-12 assessment results that validate identified conclusions from qualitative interview findings.

3.1 Social Isolation and Mental Well-being

Social isolation represents an overwhelming issue experienced by bedfast residents according to the interview data. Most of the residents reported experiencing both loneliness and frustration combined with emotional separation from the outside world because of their restricted physical movement. The inhabitants passed their days without excitement because interactive activities were almost nonexistent in their daily routine. Respondent A clearly expressed that he feels trapped inside his physical body. The people around me move but I remain unable to participate with them. My existence extends to the two spaces of bed and room alone(7). The participants candidly expressed disappointment about having minimal meaningful social contacts except for rare times their caregivers or family members would visit. Additional information from SF-12 evaluations confirmed the research findings established through qualitative analysis. Major emotional distress together with poor mental well-being existed according to the Mental Component Summary scores in six participants out of seven. Members of the study group developed depression along with anxiety as they felt unimportant and unsure of why their days mattered. Several study participants described themselves as physical and social participants before their bedfast state yet stated this condition restricted their social activity participation.

The absence of convenient communication technology systems served as a chief reason for SOCIAL ISOLATION IN THE POPULATION. The residents possessed TV and radio equipment yet they acknowledged these devices provided no means for two-way social communications. Many elderly participants stressed their requirement for user-friendly access to video calls and social media applications since these tools would maintain their social connections to family and friends. The informant E told us that her sister resides in America. The computer the home gave me remains too complicated for me to use them for contacting my sister who lives in America. The healthcare technology in nursing homes lacks accessibility for elderly patients because its current interfaces present challenges to users including the physically disabled and cognitively impaired patients.

3.2 Psychological and Emotional Effects of Dependency

Results revealed the substantial psychological stress which develops when elderly persons depend on caregivers for care. Most people who participated in the study expressed disappointment about their declining independence which directly impacted their basic capabilities to move their bed and manage lighting controls and request help. Being dependent frequently produced feelings of complete lack of control together with dissent and pride. According to Respondent F his current state of dependency has reduced him to the point where he feels like a helpless child. The complete lack of control causes me to feel immature. The dependancy makes me intensely displeased about having to request assistance repeatedly.

The delayed response of receiving help was among the most worrisome consequences of complete dependence. Residents expressed frustration regarding alert button assistance because help from caregivers arrived between 30 to 45 minutes after button use. Emergency needs for assistance among residents led to prolonged wait times that resulted in serious distress because of the situation. According to Respondent C their call for assistance became a lengthy ordeal after pushing the alert button to use the bathroom because no caregiver responded. I was forced to use my incontinence pad because someone did not arrive within the necessary time. It was humiliating(8).” The current nursing home caregiving system has an important deficiency that stems from employee shortages combined with heavy workloads which produces delayed responses that intensify residents' sense of powerlessness.

A few of the residents developed innovative approaches to restore their feelings of autonomy. The participant known as E explained using a shoehorn to activate light switches from bed because reaching normal methods was not possible. Resident independence is strong but they need proper assistive equipment which could simplify their daily activities. The research data supports a basic technical solution that involves bedside remote controls enhanced with lighting and curtain functions adding emergency alert capability thus resulting in better resident self-control and life satisfaction.

3.3 Usability and Limitations of Existing Assistive Technology

The participants who had accessibility to adjustable beds and alert systems along with mobility aids generally struggled with these tools because their designs were insufficient. Participants expressed frustration mainly about technical devices because they found remote controls together with adjustment buttons too confusing to operate. Many participants indicated problems in operating their hospital beds correctly which resulted in unpleasant situations and upset them. The bed control panel left Respondent G confused because he did not grasp the buttons’ functionality. When I push this single button my legs immediately rise off the bed. The nurse must be contacted whenever I need to lower my bed back to the normal position.

Several hospital beds lacked customized comfort settings which left residents dependent on basic unsupportive beds for their mattress requirements such as preventative care against pressure sores. The previous experience of developing bedsores led Respondent D to assert he would avoid hospital visits unless he received care on an air-mattress with adjustable firmness. The care will become unbearable throughout my entire stay without a proper air-mattress. The current availability of assistive technologies remains insufficient because these devices either fail to integrate with

standard care procedures or they do not provide adequate solutions for bedfast residents.

3.4 Potential for Innovations in Bed and Room Control

Most bedfast individuals wanted the implementation of home automation systems that enhance their quality of life specifically designed for their needs. Numerous participants wanted voice-activated systems and touch-screen devices that would enable independent operation of their environment(9). The system should enable bedfast individuals to manage temperature controls and lighting settings and adjust window covers and facilitate video communication with family members.

Lowering dependency felt possible to Respondent E because technological controls of lights and curtains would restore his independence. The idea of depending on others to perform tasks frustrates me completely. Several participants stressed that taking control of common home tasks without assistance would raise their quality of life significantly.

Respondent G introduced an important technological notion that involved integrating an adjustable night light system into bed frames. His statement revealed that he dislikes overhead lights because he needs illumination during nighttime. The built-in bedside illumination would provide sufficient night vision thereby making me independent of nurse calls. Small well-designed modifications to hospital beds have the ability to deliver heightened comfort levels while simultaneously decreasing care team dependency.

Summary of Findings

This research study demonstrates the intensive difficulties that bedfast nursing home residents encounter because of social isolation along with psychological distress together with their need to depend on caregivers. The available assistive technology systems fail to provide friendly user interfaces which yields frustrations and reduces independence among users. Bedfast individuals experience life quality improvements through basic technological interventions that integrate voice-controls and easy-to-use design elements into their smart home environments.

4.Discussion

This investigation demonstrates crucial knowledge about bedfast nursing home population challenges together with evidence that new technologies can advance their quality of life (QoL). The study results demonstrate that social isolation and loss of independence together with psychological distress and inadequate assistive technology devices cause a decrease in well-being for this particular population. This section analyzes existing research to position the study results within geriatric field research before proposing potential intervention approaches and research directions for future investigations.

4.1 Comparison with Existing Research

A comparison of bedfast nursing home resident experiences from this study showed similarities with existing studies about elderly immobility effects on QoL. Various research proves that long-term bedrest produces severe health issues by escalating depression rates and triggering cognitive deterioration and pressure wound development as well as fostering social detachment among elderly patients (Campbell 2009, Arslantas et al 2009). This research confirms that physical immobilization leads to extensive psychological and emotional consequences in addition to its physical health effects. Participants demonstrated strong feelings of loneliness and dependency which reveals the necessity for healthcare treatments to adopt social and technological strategies beyond conventional medical approaches(10).

The findings about dependency perceptions from elderly hospital patients in Rubin et al.'s (2016) research closely correspond to the current study's results. The updated investigation confirmed previous research findings that more than half of participants chose bed immobilization over death so did interviewed subjects in this research. The psychological effect of age-related dependencies needs immediate analysis to improve elderly healthcare services effectively. Most nursing home residents experience a loss of dignity as well as self-worth because they typically receive care instead of remaining active participants in their daily lives.

Existing research literature recognizes meaningful social interaction as the primary factor that associates with elderly well-being (Edvardsson et al., 2013). The investigation revealed bedfast residents receive few opportunities for positive engagement because both their reduced physical abilities and the limited free time of staff stand in the way. A passive state characterizes nursing home residents according to den Ouden et al. (2015) who discovered that these residents spend most of their days uninvolved and without physical or social interactions. The health of elderly adults remains at risk because they need technology-based solutions to maintain communication and entertainment and mental stimulation.

4.2 The Role of Technology in Enhancing Quality of Life

The study produced an important result demonstrating how smart home technology and digital communication systems might boost bedfast residents' independence and social ability rates. Users across all groups requested functionality-optimized devices which enable them to manage their environmental elements including automated voice commands

and curtain along with lighting controls as well as video communication systems. These crucial technologies serve a vitally essential purpose in healthcare because they address various quality-of-life aspects through their work to reduce dependency needs while enhancing social interactions and delivering increased comfort.

Multiple studies from various sources have validated how technology serves as an effective disruptor in eldercare practices. Analysis by Imai et al. (2015) adopted adaptive furniture and smart beds in hospital environments to prove that patients who supervised their space had better comfort ratings combined with enhanced satisfaction results. The research presents evidence that nursing home inhabitants who cannot walk to bed would achieve better results through furniture and equipment similar to the innovative examples presented in this study. The implementation of smart technologies at nursing homes offers residents greater empowerment through comfortable environments at the same time it lightens caregiving responsibilities.

The proper implementation of technology demands recognition that it cannot exist without other necessary measures. Participants in this study shared negative experiences about assistive devices which presented complex controls together with small buttons and confusing interfaces that prevented them from operating their beds or alert systems without help. Future technological advancements must focus on building devices which easily accommodate elderly users' physical attributes and cognitive levels.

4.3 Practical Implications for Nursing Home Care

This study provides multiple useful recommendations for nursing home leadership together with caregivers and for government officials who set policy. The primary requirement right now is to provide training to medical staff about properly incorporating technology-based interventions into regular care activities. A significant number of nursing home residents fail to operate their devices effectively because trained professionals have not properly taught them appropriate usage. Assistive technology training specific to both residents and caregivers will establish a smoother transition while promoting resident autonomy in nursing home care programs.

Creating suitable modifications to care settings is essential for nursing homes to provide better services to bedfast residents. Nursing homes should deploy smart home systems that allow bedfast residents to use automated lighting as well as digital communication tools and temperature control functions without caregiver assistance. These seemingly insignificant modifications would create major changes in the way residents experience dignity and life management independence.

The findings highlight the requirement for nurses to customize their care methods when working with bedfast residents. The research demonstrated that elderly people have diverse strategies to manage their situations because some residents like basic technology advances but others actively want contemporary digital solutions. Nursing homes need to establish flexible care practices based on individual residents which customize technology implementations instead of implementing standardized approaches.

The policy needs immediate investment for elderly-friendly technology research and development efforts. Healthcare organizations together with governments need to work side by side with technology developers for designing appropriate solutions that serve bedfast people and remain affordable.

4.4 Future Research Directions

The research results generated valuable information though new investigation of multiple aspects proves necessary. The results would show greater applicability when researchers survey more participants. The examination consisted of seven subjects located across two nursing home centers so the collected results hold importance yet do not provide complete information regarding all bedfast residents. Future investigations must increase the number of participants by studying people from multiple cultures and countries worldwide.

Future research should investigate the lasting effects that technological interventions generate on the population. Additional testing of the proposed solutions is essential before implementing these technologies in real-world nursing home environments. Nursing homes should establish trial programs to gather comprehensive evidence about the temporal effects of smart home functions along with digital communication methods and assistive technology on patient quality of life.

The research needs to examine how well bedfast elderly patients handle digital information. In this research participants who showed technological interest existed alongside individuals who felt either overwhelmed or confused about digital technology use. Online system developers must know about the impact of physical ability and cognitive capacity to create user-friendly and accessible interfaces.

A comprehensive study requires interdisciplinary research between professionals from gerontology along with healthcare experts alongside engineers and human-computer interaction specialists. Researchers who collaborate across disciplines can create complete solutions which improve healthcare and social and psychological aspects of care for bedfast residents.

5.Conclusion and Future work

This research evaluates in detail the difficulties of bedfast nursing home patients while investigating how technology could enhance their quality of life (QoL). Research data demonstrates the extensive physical, psychological along with social difficulties which affect people who require prolonged bed rest. Research findings reveal social isolation along with emotional distress from dependency and current assistive technology usability problems and insufficient control over the environment as the most critical issues affecting bedfast nursing home residents. Multiple difficulties combine into one unified process which reduces patient dignity alongside their independence and total sense of wellness. The study demonstrates potential solutions which would lead to significant life improvement for bedfast residents through the adoption of smart home technologies and personalized assistive devices and improved caregiver training programs.
The results show bedfast patients typically undergo severe feelings of loneliness along with losing their social connections. The participants showed_interest in meaningful connections although physical obstacles presented major difficulties for them to connect. Most social activities at nursing homes need residents to walk which creates barriers for bedfast people needing exclusive participation. The research determined technology which includes video communication software and voice-based tools and interactive games provided residents the necessary connection to families and caregivers and loved ones. Nursing homes that establish accessible communication methods will enable bedfast residents to preserve emotional bonds along with event participation while fighting off social solitude.
The investigation reveals the impact of dependency on both emotional and psychological well-being of patients. Numerous respondents expressed feelings of frustration together with helplessness and embarrassment because they needed support for everyday needs such as changing their bed position and lighting control and curtain operation. Response delays along with workforce deficits and restricted freedoms in self-care routines magnified these negative emotions which caregivers strive to manage for their residents according to research data. The resolution requires placing technological innovation which promotes resident independence at the top of the priority list. Smart beds enabling residents under bed confinement to use voice commands for control alongside remote-controlled lighting and automated window blinds would decrease their dependency on staff help at bedside. These new interventions would allow residents to take charge of their environment and reclaim independence thus leading to better overall QoL.
One important discovery in this study demonstrates the usability difficulties that currently available assistive technologies produce. Participants operating in nursing homes experienced frequent difficulties with complex control systems and small buttons and unintuitive interfaces that accompanied adjustable beds and alert systems and mobility aids provided by these establishments. The difficulty of remote control and bed adjustment panel operation generated pain and caregiver dependency for some nursing home residents. Research results emphasize the immediate requirement for easy-to-use equipment designed for elderly user needs including physical and cognitive limitations related to aging. Elderly resident-friendly technology development requires simple interfaces with large readable text and voice-command functions and tactile-responsive buttons to enable residents to use such devices unassisted.
This research demonstrates that caregiver education programs with better nursing home facilities should be considered for practical implementation. Staff members who care for patients must receive educational instruction about digital literacy along with training on assistive technology to facilitate better resident usage of modern digital systems. Nursing home administrators must dedicate resources to buy smart home technologies and update old equipment along with integrating technology-based approaches in their resident care programs. Enhanced technologies would help decrease caregiver workloads and enhance the living accommodations for patients living in bed.

5.1 Future Directions and Recommendations

The research gives important information but scientists must carry out additional studies to develop and execute the recommended technological solutions. Future research needs to focus primarily on understanding the sustained effect technology has on the wellness state of bedfast residents. Future testing should occur through supervised nursing home pilot programs because this study demonstrates possible advantages from smart home systems. Research teams must collect and analyze extended data regarding user satisfaction levels along with technological adoption metrics and substantive QoL enhancement to identify best-fit solutions for large-scale implementation.
Research must focus on determining the digital literacy skills of patients who stay in bed due to their medical condition. This research demonstrated that several participants had positive attitudes towards digital communication technologies yet others displayed limitations in operating fundamental digital hardware. Research into technology adoption obstacles must create specialized training programs to boost elderly people's comfort when handling assistive devices.

Joint working between gerontologists with engineers and human-computer interaction specialists can lead to unique solutions which address the physical and cognitive needs of bedfast individuals.

Healthcare organizations together with policymakers need to establish funding programs which support the integration of modern technological equipment within nursing home facilities. User-friendly eldercare technology requires governmental and private healthcare funding to support research development as well as its distribution to the market. Nursing homes need to fulfill minimum standards which establish proper accessibility of assistive technology through official regulatory programs. Making these accessible tools accessible to all bedfast nursing home residents will create substantial progress toward enhancing their dignity along with personal independence and general well-being.

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Conflicts of interest

The authors have no conflicts of interest to declare

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