

Age-friendly Care Models for Hospitalized Elderly Adults

Hastanede Yatan Yaşlı Yetişkinlere Yönelik Yaşlı Dostu Bakım Modelleri

 Gamze Uğur^{1,2},  Büşra Kul^{1,3},  Zeliha Tülek⁴

¹İstanbul University-Cerrahpasa, Institute of Graduate Studies, Medical Nursing Doctorate Program, İstanbul, Türkiye

²Yalova University, Faculty of Health Sciences, Division of Elder Care, Yalova, Türkiye

³Üsküdar University, Vocational School of Health Services, Division of Elder Care, İstanbul, Türkiye

⁴İstanbul University-Cerrahpasa, Florence Nightingale Faculty of Nursing, İstanbul, Türkiye

ABSTRACT

The aging population presents significant challenges for healthcare systems worldwide, particularly in the context of hospitalized elderly adults. This population is at increased risk of complications such as delirium, functional decline, and prolonged hospital stays due to the complex interplay of multiple chronic conditions and cognitive impairments. Therefore, care models specifically designed to address the needs of hospitalized elderly adults have been developed. The primary objective is to conduct a comprehensive assessment followed by the implementation of tailored interventions aimed at preserving and enhancing both cognitive and physical function. These care models emphasize the need for a multidisciplinary and holistic approach to address the physiological changes associated with aging and common geriatric syndromes and prioritize personalized care by considering the preferences and needs of elderly adults. In all these care models, special emphasis is placed on nurses for their active roles in the daily care of elderly adults, supporting their cognitive and physical functions, preventing delirium, and ensuring mobility. Nurses are key professionals in the implementation of age-friendly practices in the field. In particular, the active participation of nurses in practices and the adoption of patient-centered care are key factors determining the success of the models. This review emphasizes the critical importance of targeted interventions, interdisciplinary collaboration, and the creation of supportive health environments to improve care outcomes for elderly adults in hospital settings. This article will discuss the most well-described models of care in the literature that have been developed to reduce common problems such as delirium, functional and cognitive impairment, and sleep disorders in hospitalized elder adults: the hospital elder life program, the acute care for the elderly model, the age-friendly health systems, and the nurses improving care for healthsystem elders model.

Keywords: Aged, Patient-centered Care, Hospitalization, Nurses, Delirium

ÖZ

Yaşlanan nüfus tüm dünyada özellikle hastanede yatan yaşlı yetişkinler bağlamında sağlık sistemleri için önemli zorluklar ortaya koymaktadır. Bu nüfus, birden fazla kronik durumun ve bilişsel bozuklukların karmaşık etkileşimi nedeniyle deliryum, fonksiyonel gerileme ve hastanede kalış süresinin uzaması gibi komplikasyonlar açısından yüksek risk altındadır.

Zeliha Tülek, İstanbul University-Cerrahpasa, Florence Nightingale Faculty of Nursing, İstanbul, Türkiye

E-mail: ztulek@iuc.edu.tr / **ORCID ID:** 0000-0001-8186-6698

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Bu nedenle hastanede yatan yaşlı yetişkinlerin ihtiyaçlarını karşılamak için özel olarak tasarlanmış bakım modelleri geliştirilmiştir. Birincil amaç, kapsamlı bir değerlendirme yapmak ve ardından hem bilişsel hem de fiziksel işlevi korumayı ve geliştirmeyi amaçlayan özel müdahalelerin uygulanmasıdır. Bu bakım modelleri, yaşlanma ve sık görülen geriatrik sendromlarla ilişkili fizyolojik değişiklikleri ele almak için multidisipliner ve bütünsel bir yaklaşımın gerekliliğini vurgulamakta ve yaşlı yetişkinlerin tercihlerini ve ihtiyaçlarını göz önünde bulundurarak kişiselleştirilmiş bakıma öncelik vermektedir. Bu bakım modellerinin tümünde yaşlı bireylerin günlük bakımı, bilişsel ve fiziksel işlevlerinin desteklenmesi, deliryumun önlenmesi ve mobilitenin sağlanması konularındaki aktif rolleriyle hemşirelere özel vurgu yapılmaktadır. Hemşireler, yaşlı dostu uygulamaların sahaya yansımada temel profesyonellerdir. Özellikle hemşirelerin uygulamalardaki aktif katılımı ve hasta merkezli bakımın benimsenmesi modellerin başarısını belirleyen temel etmenlerdir. Bu derlemede, hastane ortamlarında yaşlı yetişkinlerin bakım sonuçlarını iyileştirmek için hedefe yönelik müdahalelerin, disiplinler arası iş birliğinin ve destekleyici sağlık ortamlarının yaratılmasının kritik önemi vurgulanmaktadır. Bu makalede, hastanede yatan yaşlı yetişkinlerde deliryum, işlevsel ve bilişsel bozulma ve uyku bozuklukları gibi sık karşılaşılan sorunları azaltmak amacıyla geliştirilmiş olan bakım modellerinden literatürde en iyi tanımlanmış olanları ele alınacaktır: hastane yaşlı yaşam programı, yaşlılar için akut bakım modeli, yaşlı dostu sağlık sistemleri ve sağlık sistemindeki yaşlılar için bakımı geliştiren hemşireler modeli.

Anahtar Kelimeler: Yaşlılık, Hasta Merkezli Bakım, Hastanede Yatış, Hemşireler, Deliryum

INTRODUCTION

The increase in the elderly adults, particularly in developing countries, negatively impacts healthcare systems, leading to challenges in providing adequate and comprehensive care in institutions. This demographic shift makes it essential to adopt age-friendly care practices in hospital settings, where elderly patients are particularly vulnerable to adverse effects. Hospital-acquired disability (HAD) is defined as a new or worsening loss of the ability to perform activities of daily living (ADLs) independently in elderly patients during hospitalization. In other words, it refers to the functional decline that occurs while a patient is hospitalized. HAD can develop in approximately 20-30% of patients within the first 24-48 hours of hospital admission and often persists through discharge, resulting in a loss of independence in at least one ADL. This condition is associated with an increased need for institutional care, higher rates of hospital readmissions, and greater susceptibility to geriatric syndromes, contributing to a more adverse clinical trajectory (1,2). Hospitalized elderly adults often have multiple chronic diseases, and the risk of experiencing various issues such as cognitive and physical impairments, sleep disturbances, and infection is higher in the elderly compared to other adults. Therefore, the accessibility of adequate and comprehensive care for elderly adults can

only be achieved through the adoption of age-friendly care practices in hospital settings. Age-friendly care practices are based on models that prioritize patient-centered care and aim to improve the quality of life of elderly adults during and after hospitalization. The goal is not only to treat the acute illness that led to hospitalization, but also to ensure that the care environment supports the overall health and independence of the elderly adult (3,4).

One of the key components of age-friendly care is the prevention and management of delirium, a common and serious condition among hospitalized elderly adults. Delirium, characterized by sudden onset confusion, disorientation, and impaired cognitive function, can lead to complications, prolonged hospitalization, long-term cognitive decline, and increased mortality if not properly managed. The prevalence of delirium in hospitalized elderly adults ranges from 10% to 80%, depending on the patient population and care setting. Given its prevalence and serious consequences, proactive measures are clearly needed to prevent the development of delirium (5). In this context, non-pharmacological approaches, in particular, have gained increasing importance in recent years. One of the most notable of these is the Hospital Elder Life Program (HELP), developed by Inouye et al. (6), which emphasizes the importance of early detection and

intervention in preventing delirium in hospitalized elderly adults.

Age-friendly care practices include broader interventions aimed at improving the overall hospital experience for elderly adults, in addition to preventing delirium. The CareWell program in hospitals serves as an example of an innovative approach to providing comprehensive, personalized care for elderly adults. This program combines comprehensive geriatric assessment with individualized care plans that address both the medical and social needs of each patient. The CareWell program ensures holistic care through interdisciplinary collaboration among various healthcare professionals, including geriatricians, nurses, social workers, and physiotherapists, addressing all the needs elderly adults face in the hospital environment (3). Studies have shown that the CareWell program is effective in reducing hospital readmissions, increasing patient satisfaction, and improving the quality of life for elderly adults during and after hospitalization (7,3).

Specialized care settings, such as geriatric monitoring units (GMUs), play a significant role in providing age-friendly care in hospitals. These units are designed to provide care focused on elderly adults with acute medical issues, offering a structured environment to monitor and manage age-related complications such as falls, poor management of polypharmacy, and cognitive decline. GMUs are staffed with healthcare professionals specially trained in geriatric care, ensuring that patients receive age-appropriate treatment. The primary goal of GMUs is to prevent physical and cognitive decline during elderly patients' hospital stays (8). Research has shown that GMUs can significantly improve outcomes for elderly adults, including reducing the frequency of complications and shortening hospital stays (9).

Regardless of the names of the care models for elderly adults, the key characteristics of these models include respecting the elderly adults' decisions, needs, and priorities, ensuring effective interdisciplinary communication and collaboration for the provision of holistic care, adapting physical environment to meet needs of the elderly adults, and establishing a robust record-keeping system. In

addition, it is emphasized that care should not be limited to the institution, and systems should be developed to monitor the elderly adults' health status and changing care needs (10). To be effective these practices should be integrated into the national healthcare systems. This review will address some of the most prominent age-friendly care practice models for hospitalized elderly adults, whose effectiveness has been demonstrated in numerous studies, including the HELP, acute care for elders (ACE) model, age-friendly health systems (AFHS), and the nurses improving care for healthsystem elders (NICHE) model.

Hospital Elder Life Program (HELP)

The HELP is an evidence-based, multicomponent, non-pharmacological intervention aimed at preventing delirium, preserving physical and cognitive function, maximizing independence at discharge, and preventing hospital readmissions in hospitalized elderly adults (11). As is well known, the development of delirium is associated with both predisposing and precipitating factors. HELP targets six modifiable risk factors, including disorientation, sleep deprivation, physical inactivity, vision impairment, hearing impairment, and dehydration (6,12). The program emphasizes a team approach in implementing these interventions, with geriatric-trained nurses, geriatric specialists, a volunteer coordinator known as the elder life specialist, and trained volunteers all participating in the care (13).

From the moment elderly adults are admitted to the hospital, they are assessed for delirium risk factors and the presence of delirium through both observation and the use of scales and assessments by geriatric-trained nurses and geriatricians. The written standard interventions of the HELP program are personalized by nurse-led team members and implemented in a manner that aligns with the preferences and abilities of elderly adults. (14). Trained volunteers visit elderly adults three times a day, conducting interventions during these visits such as providing information about the daily schedule and introducing team members to ensure orientation, playing card and word games for cognitive stimulation, and discussing daily events. Additionally, nurses in the clinics collaborate with

volunteers to provide non-pharmacological interventions for elderly adults experiencing sleep deprivation, such as offering warm milk, massage, and preventing daytime napping, and take measures to ensure quiet in the ward (e.g., setting alarms to vibration mode, etc.). They also review timing of interventions that interrupt nighttime sleep (6,15). Other interventions in the program include encouraging early mobilization through walking in the room or corridor, supporting the elderly adults during walking, or providing joint range-of-motion exercises in bed to ensure mobility; monitoring the elderly for signs and symptoms of dehydration; reminding elderly with visual issues to use glasses or contact lenses, ensuring their cleaning, adjusting lighting to suit the elderly adults, and in cases of hearing problems, reminding elderly who use hearing aids to use them, ensuring their cleaning, communicating from the better-hearing side, and speaking in a way that allows lip reading (6,12).

The foundations of HELP were laid in the early 1990s through the hospital outcomes project for the elderly, conducted by Margitić et al. (16). In 1999, under the leadership of Inouye, it was further developed by the Yale School of Medicine faculty and named the elder life protocol (17). In the following years, it was modified and used in studies across various countries, adapting to different healthcare systems and cultures under the name HELP (15). The HELP is implemented in many hospitals in the United States, where it was developed. In addition, pilot applications have been carried out in some countries, such as the Netherlands, Australia, China and Iran. Currently, HELP is implemented in over 250 hospitals worldwide, including emergency departments, intensive care units, and both inpatient medical and surgical clinical settings. The program has also been used in numerous institutional and individual studies (12,18). In a meta-analysis published in 2018, it was reported that the likelihood of delirium development in elderly patients who received HELP was 53% lower compared to the control group (14). The HELP intervention was also found to be effective in maintaining functional capacity, reducing falls in the hospital, and lowering care costs (12). According to the NICE guidelines, the implementation of HELP is

associated with a decrease in delirium incidence, shorter hospital stays, and improved patient outcomes (19,20).

Acute Care for Elders (ACE) Model

Acute illnesses can be a highly stressful experience for elderly adults, especially those who already have chronic conditions. In addition to this, hospitalization can lead to negative hospital-associated outcomes such as loss of independence in performing daily living activities, cognitive decline, falls, and catheter-associated urinary tract infections. The ACE model is a care model designed to prevent the loss of independence in daily living activities and to prevent the development of hospital-associated negative outcomes from the time of hospitalization to discharge (3,21). The ACE model, a multicomponent intervention, includes five main elements: creating a physical environment that supports the elderly adults' independence and safety, patient-centered care, comprehensive discharge planning involving different disciplines starting from the admission, informing the patient about the discharge plan, and controlling medication prescriptions, as well as reviewing care to ensure continued clinical management quality (21,22).

In the first ACE unit, the physical environment was designed to resemble a home setting in order to prevent delirium, falls, anxiety, and immobility. This change, which was seen as a major innovation in the 1990s, later spread across the healthcare system as hospital environments were adapted to similar standard protocols based on the principles of ACE. These protocols include, as in the ACE model, non-slip flooring, noise-reducing features, elevated toilets with grab bars, furniture in patient rooms designed ergonomically for patients, and lighting suitable for night vision (21). To minimize the risk of delirium development, daily mental activities and initiatives that support communication and memory are utilized. Additionally, reducing bed rest, ensuring mobilization by physiotherapists and nurses, and encouraging the elderly to move are other important aspects of the model. In the ACE model, a multidisciplinary team consisting of a geriatrician, geriatric nurse, care coordinator, social worker, pharmacist,

physiotherapist, and dietitian collaborates to plan care while considering the elderly adults' habits, preferences, and needs (23). The planning and implementation phase of care is combined with discharge education, where each team member provides education to the elderly adults and their family in their area of expertise to prepare for discharge. Another responsibility of the ACE team is to hold meetings to review the medications the patient is using and the implemented care, identifying any shortcomings and taking actions to improve care (21).

The first ACE unit, developed at University Hospitals of Cleveland, was funded by the John A. Hartford Foundation in 1990. The ACE model is currently implemented in Switzerland, Germany, and the United States. Studies have reported that, compared to traditional care, ACE units result in a reduction in functional decline and the incidence of delirium. Additionally, meta-analysis results have shown a decrease in hospital length of stay and readmissions, as well as a reduction in the need for institutional care. The incidence of falls was reduced by 49% to 73% in ACE units compared to regular care units or general medical wards (3,22,23).

Age-friendly Health Systems (AFHS)

Another system developed to minimize hospital-related risks in elderly adults is the AFHS, which was developed in 2015 in collaboration with the John A. Hartford Foundation, the Institute for Healthcare Improvement, the American Hospital Association, and the Catholic Health Association of the United States. The AFHS model is implemented in the United States, Canada, Australia, and the United Kingdom. Aiming to enhance the quality, effectiveness, and personalization of healthcare services, the system is based on evidence-based practices and follows a framework known as the "4Ms" (24-26).

The first "M" in the "4M" framework represents a starting point of the question "What matters?" It involves asking questions to identify what is important in both the healthcare and personal lives of elderly adults receiving care in participating institutions. This process helps uncover the goals, preferences, and values of the elderly adults, and

clinical care is aligned with these goals and preferences (26,27). The second 'M' in the system's components refers to Medications. Due to elderly adults often having multiple chronic conditions, they may be prescribed numerous medications, and due to changes in metabolic processes, they become more susceptible to the effects and side effects of these medications (27). Given these factors, it is crucial to question the necessity of prescribed medications, closely monitor the effects and side effects in elderly adults, and minimize the number of medications, especially those considered high-risk for elderly adults (such as opioids, benzodiazepines, anticholinergics, etc.). These interventions significantly reduce the likelihood of medication-related side effects and drug-drug interactions and support the preservation of cognitive and physical functions (26). The third "M" refers to Mentation, which involves the prevention, identification, treatment, and management of dementia, depression, and delirium. Interventions related to this component include making environmental adjustments appropriate for elderly adults, determining methods to facilitate effective communication with the elderly, and conducting cognitive assessments, all carried out by a multidisciplinary team (25). Additionally, family members of the elderly adults are informed about the signs of potential mental health issues in their loved ones, to better prepare them for providing care (26). Finally, the fourth 'M' refers to Mobility, which means ensuring that elderly adults move safely each day to maintain their physical functions and engage in what is 'important' to them (28). This involves encouraging elderly adults to get out of bed at least three times a day and remain as active as possible with the goal of preserving or improving functional status. Ensuring mobilization of elderly adults in the hospital improves both physical and mental health outcomes, helps prevent falls, and reduces the length of hospital stay (26).

The 4M framework facilitates the personalization of care for elderly adults, supporting nurses and other team members in assessing, planning, and implementing care. Thus, the focus of the provided care is not on the caregivers but on the elderly adults receiving care (21). Studies have reported that interventions applied within

the 4M framework led to a decrease in the number of reported adverse events related to medications, a reduction in the incidence of delirium, and improved recognition of mental symptoms, which greatly benefited the planning of the care that the elderly adults would need in the future (28).

Nurses Improving Care for Healthsystem Elders (NICHE)

The NICHE program, developed in 1992 and piloted between 1993 and 1995, is an evidence-based model designed to improve the care provided to hospitalized elderly adults. To date, there are 580 acute care hospitals that are members of the NICHE program in the United States, Singapore, Canada, Mexico, and Bermuda (3,28,29). In this nurse-led model, the goal is to provide care based on the needs of elderly adults through interdisciplinary collaboration, similar to other models and programs (30). A distinctive feature of the NICHE program is its focus on ongoing and up-to-date education, as well as fostering collaboration not only within institutions but also across them.

In institutions where the model is planned to be implemented, the Geriatric Institutional Assessment Profile (GIAP), a comprehensive 68-item assessment, is first conducted by the NICHE coordinator to evaluate the competence, knowledge, and skill levels of the team members (31,32). After the GIAP results are reviewed and a profile of the team is created, the next step is training the team members, with a focus on nurses and other healthcare professionals involved in caring for elderly patients. This training, managed by the NICHE coordinator and delivered online, covers fundamental topics such as physiological changes in elderly adults and effective communication strategies with elderly patients and their families. The goal of this education is to increase the awareness of team members towards the needs of elderly adults and encourage their active participation in initiatives to improve care for elderly adults, while promoting the use of evidence-based care protocols (33).

After the basic information, the training module focused

on evidence-based, specialized care protocols for elderly adults is introduced. This module includes training on preventing, early identifying, and effectively managing various geriatric syndromes, such as pressure ulcers, incontinence, falls, delirium, and depression. The training is reported to last approximately five months. During each phase of the training, participants, whose roles and qualifications may change, actively participate in the program's implementation in the institution for about one year, under the guidance of the NICHE coordinator (32,34,35). After one year, the GIAP is re-administered to the team members, and any changes in the team profile are assessed. Studies examining these changes have found that the implementation of the NICHE program enhanced nurses' clinical knowledge and increased their awareness of how to apply individualized and patient-centered care tailored to the preferences and needs of elderly adults (36,37).

This model has been highly successful not only in the education of all team members, particularly nurses, but also in improving the care provided to elderly patients. The use of this model has enabled the provision of higher-quality care for elderly patients at a lower cost through strong and effective communication, interdisciplinary collaboration, and coordination (35). A systematic review comparing the results of studies examining the impact of the program revealed that with the use of NICHE, the frequency of falls, pressure ulcers, and hospital-acquired infections in institutions decreased, and delirium management improved. The model is also noted to have shortened hospital stays, reduced the likelihood of elderly patients requiring institutional care after discharge, and decreased the frequency of readmissions (29,34).

CONCLUSION AND RECOMMENDATIONS

The models and programs discussed in this review provide solid frameworks for improving care while also highlighting some additional needs. One of the fundamental needs is the integration of age-friendly practices across all hospital settings, particularly in environments dedicated to geriatric care, ensuring that they do not remain isolated as local

practices. Additionally, there is a need for continuous education and training to ensure that healthcare personnel are equipped to effectively implement these initiatives. By adopting age-friendly care practices, hospitals can reduce the frequency of hospital-related problems, increase patient satisfaction, prevent complications and rehospitalizations, and potentially reduce healthcare costs.

In conclusion, age-friendly care practice models in hospitals are crucial for addressing the complex needs of elderly adults. These practices, grounded in geriatric principles, are implemented through various models and programs that focus on preventing functional decline, managing chronic conditions, and maintaining quality of life. The success of these interventions relies on collaboration among different healthcare professionals, as well as approaches that create supportive care environments tailored to the needs of elderly adults. As the global population continues to age, the adoption of age-friendly care practices in hospitals will become increasingly important to ensure that elderly adults receive the holistic and effective care they deserve.

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Conflict of Interest

No conflict of interest has been declared by the authors. All authors read and approved the final manuscript.

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Author Contributions

Concept: ZT, GU, BK, Data curation: BK, GU, Writing - original draft: GU, BK, Writing - review and editing: ZT

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