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Hand Hygiene Education for Older Adults: A Case-Based Approach in the Emergency Department

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Abstract

Background/Objective: *Preventable infections remain a major cause of morbidity and mortality among older adults due to age-related physiological changes, cognitive decline, and functional limitations. Hand hygiene is a fundamental infection-prevention strategy, yet it is often misunderstood or inconsistently practiced by geriatric patients. The emergency department represents a critical and frequently underused setting for brief patient education, as many older adults rely on it as a primary point of healthcare contact. This article aims to illustrate practical, evidence-informed strategies that nursing students can use to deliver effective hand hygiene education to older adults in the emergency department.*

Methods: *A case-based educational approach was used to demonstrate hand hygiene teaching for an older adult presenting to the emergency department. The case integrates common age-related barriers to hand hygiene, including limited mobility, joint pain, and misconceptions about infection prevention. Educational strategies were informed by established infection-prevention principles and adapted to the patient's functional and cognitive needs. No statistical analyses were performed, as this article is descriptive in nature.*

Results: *The case highlights how tailored, brief educational interventions can address misconceptions, improve understanding of proper hand hygiene techniques, and promote feasible practices aligned with the patient's abilities. Nursing student-led education emphasized clear communication, demonstration, and the use of accessible hygiene options. The approach demonstrated the potential to enhance patient engagement and reinforce infection-prevention behaviors during emergency department encounters.*

Conclusions: *Nursing students can play a meaningful role in improving hand hygiene knowledge among older adults through targeted education in the emergency department. Case-based teaching illustrates how simple, individualized strategies may help reduce infection risk in this vulnerable population. Incorporating structured patient education into routine emergency care may strengthen infection-prevention efforts and support better health outcomes for geriatric patients.*

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Introduction

Preventable infections remain one of the most significant causes of morbidity and mortality among older adults. Age-related changes such as decreased immunity, cognitive decline, skin fragility, and functional limitations increase vulnerability to communicable diseases [1]. Hand hygiene is a cornerstone of infection prevention; however, it is often poorly understood or inconsistently practiced among geriatric populations. Older adults may hold misconceptions about appropriate hand hygiene practices, rely on outdated habits, or experience barriers including arthritis, impaired mobility, skin irritation, and limited access to hygiene supplies [2,3]

The emergency department (ED) represents an important and often underutilized setting for patient education. Many older adults rely on ED visits as their primary or most frequent contact with the healthcare system, creating an opportunity for brief, focused teaching interventions [4]. Nursing students, who frequently interact with older adults during clinical rotations, are uniquely positioned to provide individualized and accessible patient education.

This document presents a case-based example of hand hygiene education for an older adult in the ED. The purpose is to highlight practical, evidence-informed strategies that nursing students can use to improve infection-prevention knowledge and promote feasible hygiene practices among geriatric patients.

Methods

This article uses a descriptive, case-based approach to illustrate geriatric-focused hand hygiene education delivered by a nursing student in the emergency department. No experimental design or statistical testing was performed.

Case Description

Patient Presentation

A 78-year-old patient presented to the emergency department with complaints of weakness, dizziness, and reduced oral intake for two days. The patient lived alone and had a medical history of hypertension, mild osteoarthritis, and early-stage cognitive decline. On admission, the patient was alert and oriented but required assistance with ambulation and some self-care activities. During routine assessment, the patient reported performing handwashing only when hands appeared visibly dirty and avoiding hand sanitizer due to concerns about skin dryness. The patient also reported infrequent hand hygiene before meals and after returning home from public places, citing forgetfulness and joint discomfort when using the sink.

Identified Learning Needs

The nursing student identified several barriers affecting hand hygiene adherence, including limited understanding of infection transmission, outdated beliefs regarding hand hygiene timing, concerns about skin irritation, reduced physical access to sinks due to joint pain, and forgetfulness related to early cognitive decline.

Educational Intervention

A five-minute, structured bedside teaching session was delivered using a patient-centered, case-based approach.

Plain-Language Explanation

The nursing student explained how germs spread during routine daily activities using simple and concrete examples, such as touching door handles, mobile phones, and food.

Demonstration of Technique

Proper hand hygiene using alcohol-based sanitizer was demonstrated step-by-step. The patient completed a return demonstration to reinforce learning and ensure

correct technique.

Addressing Misconceptions

Concerns regarding skin dryness were acknowledged and addressed by discussing strategies such as using moisturized alcohol-based sanitizers, applying lotion after hand hygiene, and performing shorter but more frequent hygiene episodes.

Environmental Modifications

The student recommended placing sanitizer pumps near frequently used locations in the home, including the bedside, dining area, and main entryway, to improve accessibility and adherence.

Memory-Support Strategies

To support cognitive limitations, the student helped the patient establish a simple routine: sanitize before meals, wash hands after bathroom use, and sanitize upon returning home. This routine was written on an instruction card and provided to the patient.

Results

Following the educational session, the patient demonstrated correct hand hygiene technique and was able to verbally recall at least three key moments for hand hygiene. The patient expressed improved understanding that germs are not always visible and acknowledged the role of routine hygiene in preventing illness. The patient also identified environmental placement of sanitizer pumps as a helpful strategy for managing forgetfulness and maintaining consistency [5]. Active engagement during the session suggested strong receptiveness to individualized education. Although long-term adherence was not assessed, immediate improvements in knowledge, technique, and confidence indicate that brief, structured, geriatric-focused education delivered in the ED can be effective.

Discussion

This case highlights several important considerations for nursing students providing infection-prevention education to older adults.

Geriatric-Focused Teaching Requires Simplification and Clarity

Older adults may experience difficulty processing complex or abstract explanations. Plain language, relatable examples, demonstrations, and return teaching improve comprehension and engagement [6].

Physical Limitations Must Be Addressed

Joint pain, reduced grip strength, and impaired mobility may interfere with frequent handwashing [1]. Environmental adaptations, such as bedside or easily accessible sanitizer dispensers, provide practical solutions.

Cognitive Support Strategies Enhance Retention

Older adults with mild cognitive impairment benefit from repetition, written reminders, predictable routines, and strategically placed supplies to reinforce behavior [5].

Nursing Students Provide Meaningful Educational Value

This case demonstrates that nursing students can effectively identify barriers, tailor education to individual needs, provide patient-centered care, and develop professional teaching skills early in training.

Emergency Department Encounters Offer Preventive Opportunities

Because many older adults rely on episodic ED care, brief educational interventions during these visits may reduce infection risk and potentially prevent future healthcare encounters [4].

Implications for Nursing Practice

Incorporating targeted geriatric infection-prevention education into routine emergency care may enhance patient safety [7]. Effective strategies include screening for misconceptions, using simple educational tools, encouraging return demonstrations, providing written instructions, addressing physical barriers, and promoting environmental cues in the home.

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Use of Artificial Intelligence (AI)

The author declares that ChatGPT was used in a non-

generative manner to optimize organizational structure of the manuscript using the authors' own words.

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