Geriatric Nursing 61 (2025) 718–719

Contents lists available at ScienceDirect

Geriatric Nursing

journal homepage: www.gnjournal.com

AALNA section

Understanding urinary incontinence and urinary tract infections as key contributors to falls in assisted living and memory care communities

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Introduction

Falls among elderly residents are a leading cause of injury and hospitalization, particularly in assisted living and memory care communities. Recent data highlight urinary incontinence (UI) and urinary tract infections (UTIs) as critical, often interrelated factors that increase fall risks. UI alone affects a significant portion of elderly residents. At the same time, UTIs add further complications, especially in memory care, where cognitive decline can make recognizing and responding to these issues more challenging. The combined effects of UI and UTIs heighten the risk of falls and contribute to increased morbidity, care costs, and a decreased quality of life for residents. This article explores the relationship between UI, UTIs, and falls, examining shared risk factors and discussing effective interventions to mitigate risks in these care communities.

The link between urinary incontinence, UTIs, and falls in elderly populations

Urinary incontinence and UTIs share several risk factors with falls, compounding the vulnerability of elderly residents in assisted living and memory care communities. Conditions like reduced lower extremity strength, sensory impairments, and cognitive decline increase the risk for UI and falls.[4] Frequent nighttime urination (nocturia) and urgent trips to the bathroom increase fall risks. The urgency caused by both UI and UTIs creates a situation where residents may make hurried, unsteady movements, often leading to falls.[8]

UTIs are a common complication in elderly populations, especially those with UI. Studies.[6] indicate that UTIs increase the risks of falls among older adults, particularly in residents with cognitive impairment. The symptoms of UTIs—such as confusion, agitation, increased urinary frequency, and pain—exacerbate the challenges faced by elderly individuals with mobility impairments. In memory care communities, UTIs often go unnoticed until symptoms intensify, making residents even more vulnerable to sudden changes in behavior and physical balance, which can result in falls.[5]

Research consistently demonstrates that older adults with UI have a significantly higher risk of falls. A meta-analysis found that those with UI are 1.76 times more likely to fall, with urgency incontinence presenting the highest risk.[3] Further studies on UTIs reveal that they are independently associated with increased fall risks, particularly their effect on mental alertness and physical stability. When UTIs and UI coexist, as they often do, the likelihood of falls increases significantly, particularly in cognitively impaired populations.[2]

Physiological and environmental mechanisms contributing to falls

Both UI and UTIs contribute to falls through several physiological pathways. Incontinence often prompts sudden, unplanned movements as residents try to reach the restroom, while UTIs can exacerbate confusion, fatigue, and muscle weakness, making these movements even riskier. Age-related decreases in muscle strength and coordination also heighten fall risks among residents with urinary urgency or infection.[4]

Cognitive impairments further affect a resident's ability to interpret bodily signals, leading to delayed or misinterpreted toileting needs. UTIs, especially in older adults, may worsen cognitive symptoms, causing increased confusion and agitation that can lead to challenges with balance and physical stability. Together, UI and UTIs are a significant challenge to maintaining balance and physical stability, leading caregivers to be attentive in recognizing and managing these conditions.[7]

Environmental factors in care communities can amplify the risks associated with UI and UTIs. Residents with UTIs may feel increased disorientation and fatigue, making navigation through a bedroom or community more challenging. Studies in hospital settings have shown that 36.8 % of falls were related to toileting needs, underscoring the critical role of a safe, accessible environment.[5]

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https://doi.org/10.1016/j.gerinurse.2025.01.002
0197-4572/$ – see front matter

Impact of cognitive decline on UI, UTIs, and falls

UI, UTIs, and fall risks in memory care communities may be due to cognitive decline and present unique managing challenges. Many residents with cognitive impairment may not recognize the need to urinate or may misinterpret bodily signals, leading to delayed bathroom visits and hurried movements. UTIs are particularly problematic in this population, as they often increase confusion and agitation, exacerbating the risk of sudden and unsteady attempts to reach the bathroom. Interventions specifically tailored for cognitively impaired residents, such as supervised toileting schedules and the use of incontinence aids, have proven effective in reducing both UI episodes and fall incidents, especially when UTIs are promptly identified and treated.[6]

Some of the stresses and challenges caused by UI and UTIs are psychological stress, social withdrawal, and reduced self-esteem, further impacting balance and attention. Residents experiencing recurrent incontinence or UTIs may be reluctant to engage in social activities, leading to reduced physical activity and muscle deconditioning, which compounds their fall risk. This isolation can lead to a cycle in which reduced mobility contributes to physical weakness and heightened fall vulnerability, highlighting the importance of addressing both the physical and psychological aspects of UI and UTIs to reduce falls.[4]

Practical intervention strategies to mitigate falls related to UI and UTIs

Structured toileting schedules, especially in memory care communities, have been shown to reduce episodes of UI and prevent fall-related injuries. Scheduling regular bathroom visits minimizes the urgency residents feel and allows caregivers to assist them in a controlled, safe manner. Environmental modifications—such as grab bars, well-lit hallways, and accessible bathrooms—further support residents by ensuring they can reach restrooms safely, even when dealing with the effects of UI or UTIs. These adjustments reduce the need for hurried movements, significantly contributing to falls in elderly populations.[2]

Training caregivers to recognize the signs of UI and UTIs is crucial in assisted living and memory care communities. Early intervention allows caregivers to prevent escalating symptoms that contribute to falls. Comprehensive assessment tools, like the Falls Risk Assessment Scoring System (FRASS), adapted to include specific risk factors related to UI and UTIs, can help caregivers monitor high-risk residents and provide timely interventions.[5]

Combining pharmacological and non-pharmacological strategies to manage UI and UTIs can reduce their impact on fall risks. At the same time, medications are effective in treating UTIs and managing some symptoms of UI, non-pharmacological interventions such as bladder training, pelvic floor exercises, clinical-grade absorbent products and are equally important. Non-pharmacological strategies are precious as they avoid medication side effects, one of which is balance issues. Several programs strengthen the muscles involved in bladder control, such as physical therapy, other exercises, and pelvic floor rehabilitation, and these programs can reduce urgency and enhance stability.[1,7]

Conclusion

Urinary incontinence and UTIs are substantial contributors to falls among elderly residents, particularly in assisted living and memory care communities. Both conditions affect balance and physical stability, with UTIs adding complications such as confusion and fatigue that increase fall risks. A practical fall prevention approach must address UI and UTI management, integrating environmental adjustments, structured toileting, and caregiver training to reduce risks.

To improve resident safety, assisted living and memory care communities should integrate UI and UTI management into comprehensive fall prevention plans. Community staff and caregivers should be trained to recognize early signs of UI and UTIs and respond with supportive interventions to minimize falls. By using tools to assess and monitor UI and UTI conditions, communities can proactively address the risks, which may reduce fall rates and improve residents' quality of life.

There is, at present, a paucity of research related to the tie-in between UTIs and falls. More research and development are needed to better understand the effects of urinary incontinence, urinary tract illnesses, and infections on the falls experienced by the geriatric population. More effective alerts, testing, and interventions to identify occult and active urinary tract issues before they become chronic or create incontinence and a higher risk for falls. Not all staff members are given the in-depth training they need to be more effective caregivers. Additional direct care staff and professional training, access to advancing technologies, and focus on prevention must be tailored to interventions for the combined impact of UI, UTIs, and cognitive impairment on fall risk. More studies exploring the value added and cost-effectiveness of implementing UTI and UI management protocols in senior living communities can add valuable insights and improve quality of life.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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