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MANAGEMENT OF GERIATRIC NURSING IN ELDERLY AT RISK OF FALLS AND DECLINING AUTONOMY: A CASE REPORT

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Abstract

Background: Falls are a common issue among the elderly, leading to reduced functional independence, disability, and a lower quality of life. Identifying fall risk factors early is essential for preventing injuries and preserving older adults' functionality. This case report demonstrates gerontological nursing care based on Comprehensive Geriatric Assessment (CGA) for elderly individuals at risk of falls. **Case Summary:** An 84-year-old man living in the community underwent a gerontological nursing assessment. He presented with intermittent shortness of breath, a productive cough, dizziness, and visual disturbances. His medical history included smoking and cataract surgery. While he was mostly independent, he often depended on nearby objects for support and exercised caution in his activities. **Investigation and Diagnosis:** Examination revealed a blood pressure of 150/60 mmHg, a pulse of 90 bpm, a respiratory rate of 26 breaths per minute, and crackles. The Mini-Mental State Examination (MMSE) score of 18 indicated possible cognitive impairment, and the Barthel Index score of 19 showed mild dependency. A Timed Up and Go Test (TUGT) result of 14.3 seconds indicated an increased fall risk, and the Mini Nutritional Assessment (MNA) highlighted malnutrition risk. The patient was diagnosed with multifactorial fall risk and mild dependency in daily activities. **Management:** Nursing interventions included educating the patient on fall prevention, modifying the home environment, supporting independence, managing respiratory symptoms, and involving family in care. **Outcome:** One important limitation of this case report is that standardized geriatric assessment instruments, including the Timed Up and Go Test (TUGT), Barthel Index, and Mini-Mental State Examination (MMSE), were not repeated during follow-up. Consequently, the patient's clinical outcome could only be evaluated through clinical observation, nursing assessment, and reports from the patient and family. **Conclusion:** This case report demonstrates that comprehensive gerontic nursing management supported by Comprehensive Geriatric Assessment facilitates early identification of multifactorial fall risk, strengthens clinical reasoning, and guides individualized nursing interventions.

Keywords: case report; clinical reasoning; diagnosis; management; outcome

INTRODUCTION

The global increase in life expectancy and advancements in healthcare have led to a significant rise in the elderly population. This demographic change poses substantial challenges for healthcare systems, particularly due to a rise in chronic diseases, geriatric syndromes, functional decline, and a growing need for long-term care. Falls stand out as a major health concern for older adults, recognized as a pressing public health issue due to their effects on morbidity, disability, quality of life, and mortality.

According to the World Health Organization, falls rank as the second leading cause of unintentional injury-related deaths worldwide, following traffic accidents. Annually, falls result in around 684,000 fatalities and over 37 million medical interventions. Older adults face heightened risks of severe injuries or death from falls. The repercussions extend beyond physical injuries, often resulting in loss of independence, increased long-term care needs, and reduced quality of life (Montero-Odasso et al., 2021).

Falls among the elderly represent a significant global challenge. In various countries, 20% to 33% of older adults report experiencing at least one fall each year. These incidents lead to both fatal and non-fatal injuries, often requiring emergency care, hospitalization, and increased healthcare costs. Psychologically, the fear of falling can limit activity levels and accelerate functional decline (Montero-Odasso et al., 2021).

A major consequence of falls is the deterioration in the ability to perform activities of daily living (ADL), which indicates an elderly individual's functional status and independence. Limitations in mobility, balance issues, and fear of falling can hinder basic tasks such as bathing and walking, leading to increased reliance on caregivers and decreased quality of life.

Research indicates a clear link between falls and functional decline. Cross-sectional Study Rasyid et al., (2026) Statistical analysis revealed a significant negative correlation between Barthel Index scores and TUGT completion time ($r = –0.904$; $p < 0.001$), indicating that higher functional independence was associated with lower fall risk. A cohort study by Adam et al., (2024) involving 2,901 elderly individuals showed that fall incidents correlate with a 42% increased risk of ADL impairments (HR = 1.42; 95% CI = 1.32–1.52), with 19% of older adults experiencing lasting ADL impairments post-fall (Montero-Odasso et al., 2021).

To mitigate these risks, international guidelines recommend a multifactorial approach to fall prevention, which encompasses comprehensive risk assessments, balance training, muscle strengthening, environmental modifications, and family involvement (Montero-Odasso et al., 2022). This case report will focus on gerontological nursing management for elderly individuals at risk of falls and declining independence, including assessment processes, clinical decision-making, and interventions.

Falls and functional decline among older adults are extensively documented; however, existing research predominantly focuses on epidemiological data and post-fall interventions. There is a notable deficiency in detailed case reports regarding the application of Comprehensive Geriatric Assessment (CGA) in gerontological nursing, specifically for the identification of intrinsic fall risk factors prior to their manifestation in community-dwelling seniors. Addressing this deficiency is crucial for the early detection of cognitive, mobility, visual, and nutritional issues. This case report illustrates how CGA enhances clinical reasoning, facilitates early identification of fall risks, and enables customized nursing interventions to preserve functional independence in older adults.

CASE PRESENTATION

An 84-year-old male living with family underwent a gerontological nursing assessment. His primary complaints included intermittent dyspnea, productive cough, and dizziness, with auscultation revealing wheezing. Symptoms began suddenly and are managed with nebulizer therapy three times daily and Fowler’s position during episodes. He also uses traditional remedies like starfruit and water spinach leaves with shallots.

History : Smoking history linked to health issues, Previous hospitalization for cataract treatment, No known allergies or past accidents. Daily Activities : Independent in most tasks but needs support while walking, Decreased night vision. Nutritional and Social History : Consumes three meals daily, No major elimination or sleep issues, Engages positively with family and community, experiencing no stress. Physical Examination : Glasgow Coma Scale: 15, Vital signs: BP 150/60 mmHg, HR 90 bpm, RR 26 bpm, Temp 36.0°C, Weight: 50 kg, Height: 155 cm, Lab results: Postprandial glucose 120 mg/dL, uric acid 6.2 mg/dL (both normal).

CLINICAL REASONING

The clinical reasoning for this case focuses on identifying factors related to fall risk and decreased autonomy in the elderly patient. Although there is no previous fall history, several intrinsic factors heighten fall vulnerability: Advanced age (84 years), Visual impairments from cataracts and difficulties in low light, Possible cognitive impairment indicated by Mini-Mental State Examination (MMSE) results, and Mobility restrictions, as shown by reliance on nearby objects for support.

Extrinsic factors, such as the risk of malnutrition and chronic respiratory issues like dyspnea and productive cough, may further impair the patient's functional capacity and activity tolerance.

The primary nursing diagnosis identifies fall risk due to visual disturbances, suspected cognitive impairment, reduced mobility, and age-related changes. A secondary concern is mild dependency in daily activities, which could lead to significant autonomy loss if not addressed. Alternative diagnoses, like acute neurological disorders or musculoskeletal injuries, were excluded due to a lack of clinical signs and advanced testing.

DIAGNOSTIC ASSESSMENT

The diagnostic evaluation was conducted utilizing the Comprehensive Geriatric Assessment (CGA) approach, which encompasses physical, functional, cognitive, psychological, nutritional, familial support, and fall risk aspects (Montero-Odasso et al., 2022).

Table 1. Summary of relevant diagnostic findings and clinical significance

Assessment Component	Findings	Interpretation	Clinical Significance
MMSE	18/30	Probable cognitive impairment	May impair judgment, attention, and safety awareness
Barthel Index	19/20	Mild dependency	Indicates early functional decline
TUGT	14.3 seconds	Increased fall risk	Suggests impaired mobility and balance
MNA	10/14	Risk of malnutrition	May contribute to muscle weakness and frailty
Family APGAR	10/10	Good family support	Facilitates implementation of care plans and fall prevention strategies

The findings revealed several interrelated geriatric vulnerabilities in the patient. A Mini-Mental State Examination (MMSE) score of 18 indicates probable cognitive impairment, potentially affecting decision-making capabilities and safety during activities. The Barthel Index score of 19 reflects mild dependence in activities of daily living. Additionally, a Timed Up and Go Test (TUGT) result of 14.3 seconds signifies an elevated fall risk.

Nutritional status is also concerning, as the Mini Nutritional Assessment indicates a risk of malnutrition, which may contribute to muscle weakness, decreased balance, and increased fall risk. Overall, the diagnostic assessment concludes that the patient exhibits an increased fall risk, mild dependence, probable cognitive impairment, visual disturbances, and malnutrition risk, guiding the gerontological nursing interventions aimed at fall prevention and maintenance of functional independence.

THERAPEUTIC INTERVENTION

The interventions for the patient were guided by the Comprehensive Geriatric Assessment (CGA), which identified fall risks, mild dependency in daily activities, potential cognitive impairment, malnutrition risk, visual disturbances, and chronic respiratory issues. A multidimensional, preventive approach aimed to sustain functional independence, enhance safety, and prevent falls.

Fall Risk Management

Key interventions for fall prevention included educating patients and families about fall risk factors in the elderly. Recommendations involved: Encouraging patients to walk slowly, avoid abrupt position changes, and use stable handholds, and Advising families to improve home safety with adequate lighting, reduced walking hazards, non-slippery floors, and strategically arranged furniture.

Maintenance of Functional Independence

With the patient capable of most daily activities independently, the focus was on maintaining these abilities. Patients were urged to engage in daily activities safely, while families were encouraged to assist without fostering dependency.

Respiratory Management

The patient continued nebulizer therapy thrice daily. They were instructed to adopt a Fowler's position during dyspnea episodes for better lung expansion, while respiratory patterns were monitored for any decline.

Nutritional Intervention

Following the Mini Nutritional Assessment, education was provided on the necessity of adequate energy and protein intake. Families were advised to track dietary habits and changes in weight or appetite.

Cognitive Support and Family Involvement

In light of the potential cognitive impairment indicated by MMSE results, information was simplified for clarity. Active family involvement in monitoring health and implementing fall prevention was emphasized to enhance the elderly's quality of life.

THERAPEUTIC SEQUENCE

Intervention was systematically implemented based on assessment findings and priority issues. A thorough evaluation of the patient's physical, cognitive, psychological, nutritional, and environmental status indicated a heightened fall risk due to age, visual impairments, cognitive dysfunction, and mobility issues.

A care plan aimed at fall prevention and independence was created, including education for the patient and family on risk factors, safe mobilization, and home modifications. The patient was encouraged to participate in daily activities. Respiratory therapy and nutritional support continued, with regular assessments of mobility, health status, and fall incidents showing no significant intervention changes were necessary.

CASE TIMELINE

Table 2. Clinical case timeline

Time Point	Clinical Events	Clinical Actions
Prior to assessment	Patient experienced intermittent dyspnea, productive cough, dizziness, and visual impairment. History of long-term smoking and previous cataract treatment was reported.	Symptom management was performed at home, including nebulizer therapy and family support.
Initial assessment	Comprehensive gerontic nursing assessment was conducted. Physical examination revealed elevated systolic blood pressure, mild tachypnea, and rhonchi on lung auscultation.	Collection of demographic, clinical, functional, cognitive, nutritional, and psychosocial data.
Diagnostic assessment	CGA findings showed MMSE score of 18, Barthel Index score of 19, TUGT result of 14.3 seconds, MNA score indicating risk of malnutrition, Family APGAR score of 10, and GDS score of 3.	Identification of fall risk, mild functional dependency, probable cognitive impairment, and nutritional vulnerability.
Clinical reasoning and care planning	Multiple intrinsic risk factors for falls were identified, including advanced age, visual impairment, cognitive decline, mobility	Development of an individualized gerontic nursing care plan focusing on fall prevention and maintenance of

	limitation, and nutritional risk.	functional independence.
Implementation phase	Fall-prevention strategies, environmental modification, nutritional counseling, respiratory symptom management, and family education were initiated.	Patient and family received education regarding safe mobility, home safety measures, and support for daily activities.
Monitoring and follow-up	Patient's functional status, mobility, respiratory symptoms, nutritional intake, and safety were monitored.	Reinforcement of preventive strategies and continued family involvement in care.
Outcome evaluation	No falls, injuries, hospital admissions, or significant clinical deterioration were reported during the follow-up period. Functional independence was maintained.	Continuation of preventive and supportive interventions with periodic reassessment recommendations.

OUTCOME AND FOLLOW-UP

The follow-up evaluation revealed that the patient maintained a stable clinical condition during the observation period, with no falls, injuries, emergency visits, or hospitalizations linked to fall risk or functional decline.

The patient showed improved awareness of fall risk factors and reported exercising increased caution while walking, applying safe mobilization techniques learned in educational sessions. Most daily living activities were performed independently, with only mild dependency noted and no significant functional decline observed.

Respiratory issues, including intermittent dyspnea and productive cough, persisted but did not indicate clinical deterioration. Nebulizer therapy and positional changes effectively relieved discomfort.

Nutritionally, family involvement in monitoring the patient's dietary habits improved, with no signs of decreased appetite or worsening nutritional status during the observation.

Psychosocial support from the family remained robust, as they actively engaged in monitoring activities, assisting with environmental modifications, and providing emotional support.

One important limitation of this case report is that standardized geriatric assessment instruments, including the Timed Up and Go Test (TUGT), Barthel Index, and Mini-Mental State Examination (MMSE), were not repeated during follow-up. Consequently, the patient's clinical outcome could only be evaluated through clinical observation, nursing assessment, and reports from the patient and family. Future case reports should incorporate serial standardized assessments to objectively evaluate changes in mobility, functional independence, and cognitive function following gerontic nursing interventions.

DISCUSSION

This case exemplifies the intricate nature of health challenges faced by elderly individuals in community settings. The risk of falling is not attributable to a singular cause but rather a combination of various interrelated intrinsic and extrinsic factors. Despite the patient having no previous fall incidents, the Comprehensive Geriatric Assessment (CGA) identified multiple elements that heightened fall vulnerability, such as: Advanced age, The principal finding of this case is that Comprehensive Geriatric Assessment enabled the identification of multiple interacting fall-risk factors before an actual fall occurred. Rather than relying on a single assessment tool, the integration of mobility, cognitive, nutritional, visual, and functional assessments supported clinical reasoning and guided individualized gerontic nursing interventions aimed at maintaining functional independence.

A key finding is the association between heightened fall risk and diminished functional independence. The Barthel Index score of 19 indicates mild dependence in daily activities. A reduction in Activities of Daily Living (ADL) is a major predictor of falls in the elderly, as supported by Zhang et al., (2024), who found a direct correlation between impaired ADL and increased fall risk. Conversely, falls can hasten physical deterioration, increasing dependence and reducing quality of life, highlighting a bidirectional relationship between fall risk and autonomy.

The Timed Up and Go Test (TUGT) result of 14.3 seconds suggests an elevated fall risk. International guidelines state that prolonged TUGT times indicate decreased functional mobility and balance issues. Kim & Choi, (2024) noted significant correlations between abnormal TUGT results and fall incidents leading to injuries in community-dwelling elderly, suggesting that the patient's mobility limitations are clinically significant despite no prior falls.

Although the patient's TUGT result (14.3 seconds) indicated an increased risk of falls, no fall events occurred during the observation period. This finding suggests that an elevated TUGT score reflects an increased probability of falling rather than an inevitable fall event. According to the World Guidelines for Falls Prevention and Management, falls result from the interaction of multiple intrinsic and extrinsic risk factors rather than from a single mobility indicator (Montero-Odasso et al., 2022). In this case, preserved safety awareness, cautious walking behavior, habitual use of environmental support while ambulating, and active family supervision likely acted as protective factors that reduced the immediate occurrence of falls despite impaired mobility.

Cognitive impairment is another crucial aspect, with an MMSE score of 18 signaling possible cognitive decline. Such declines can adversely affect attention, executive functioning, environmental awareness, and decision-making—key factors for maintaining balance and safety while walking. Research by (Montero-Odasso et al., 2022) and Huang et al., (2023) indicates that cognitive impairments significantly raise fall risks due to difficulties in hazard recognition and motor planning. Moreover, executive function impairments can hinder attention shifts and sensory integration during movement, further increasing fall likelihood (Brown et al., 2024).

Interestingly, despite an MMSE score of 18 indicating probable cognitive impairment, the patient remained largely independent in performing basic activities of daily living. This observation is consistent with evidence suggesting that cognitive decline and functional dependency do not always progress simultaneously. Basic ADL may remain preserved during the early stages of cognitive impairment because these activities rely heavily on procedural memory and long-established daily routines. Furthermore, continuous family support and a familiar home environment may compensate for mild cognitive deficits and help maintain functional independence (Boltz et al., 2022).

Visual impairment also plays a critical role in fall risk among the elderly. Decreased visual acuity, contrast sensitivity, and depth perception can obstruct individuals' ability to identify obstacles and maintain balance. Studies, including those by Mehta et al., (2022) and Jin et al., (2024), confirm that elderly individuals with visual impairments are at a higher risk of falls. Additionally, meta-analyses show that visual impairment stands as an independent risk factor for falls in community-dwelling seniors (Li et al., 2023).

Furthermore, the Mini Nutritional Assessment suggests risk of malnutrition, which is linked to reduced muscle mass and strength, impaired function, and increased frailty among the elderly. Research indicates a poor nutritional status correlates with declines in functional capacity and escalated dependence in daily activities (Wojzischke et al., 2020). Malnutrition is also closely associated with frailty development in geriatric populations (Lorenzo-López et al., 2017) and can expedite declines in physical function and independence (Volkert et al., 2019).

Nutritional status also played an important role in this case. The patient's MNA score indicated a risk of malnutrition, which is clinically relevant because inadequate nutritional status contributes to reduced muscle mass, decreased muscle strength, impaired balance, and the development of frailty. These physiological changes increase susceptibility to mobility limitations and falls. The ESPEN guideline emphasizes that early nutritional intervention is an essential component of comprehensive geriatric care because maintaining adequate nutritional status helps preserve physical performance, functional independence, and quality of life among older adults (Volkert et al., 2019).

The primary strength of this case lies in employing the CGA approach, which evaluates multiple dimensions—including medical, functional, psychological, social, and environmental factors—thus offering a comprehensive overview of the elderly's condition (Naughton et al., 2023). The CGA facilitates individualized care plans that enable early identification and management of risk factors before they escalate into serious complications (Pilotto et al., 2024; Sum et al., 2022).

An essential takeaway is the importance of detecting fall risks in elderly individuals who have not yet fallen. Clinical practice often focuses on post-fall responses; however, indicators like TUGT, Barthel Index, MMSE, and MNA enable earlier recognition of risks, allowing for timely preventive measures.

The observed short-term success also underscores the vital role of family in geriatric nursing care. Family members provide critical support that empowers the elderly to maintain independence, facilitating home modifications and ongoing health monitoring (Hailu et al., 2024). Family caregivers are pivotal in identifying fall risks and implementing prevention strategies (Sultana et al., 2023). Evidence shows that family-empowering nursing interventions can significantly enhance caregiver effectiveness in managing fall risks (Almeida et al., 2024).

Overall, this case demonstrates that fall risk in older adults cannot be explained by a single assessment result. Instead, it reflects the complex interaction between cognitive function, physical performance, nutritional status, environmental conditions, behavioral adaptation, and family support. The integration of Comprehensive Geriatric Assessment enabled individualized clinical reasoning and multidimensional nursing interventions that may have contributed to maintaining functional independence and preventing falls despite the presence of several intrinsic risk factors.

DIAGNOSTIC CHALLENGE

The main issue here involves recognizing and integrating various geriatric syndromes rather than diagnosing an acute illness. The patient's symptoms—shortness of breath, dizziness, limited mobility, and visual impairment—are nonspecific and could stem from different organ systems.

The lack of advanced diagnostic tools calls for clinical reasoning based on interviews, observations, physical exams, and geriatric assessments. Additionally, without prior fall history, healthcare providers must assess risk factors based on individual predispositions. Utilizing tools like CGA, TUGT, and Barthel Index is crucial for early detection of fall risks, aligning with fall prevention guidelines (Montero-Odasso et al., 2022) and nutritional recommendations (Volkert et al., 2019).

LIMITATION

Several limitations must be acknowledged in this case analysis: Diagnostic Limitations: The assessments relied heavily on clinical evaluations and geriatric assessment tools, with no comprehensive tests available to investigate additional fall risk factors. Short Follow-Up: The limited follow-up duration restricted the ability to analyze the long-term impacts of the interventions, including recurrent falls and changes in functional and cognitive status. Absence of Post-Intervention Data: There were no follow-up assessments for TUGT, Barthel Index, MMSE, or MNA, preventing quantitative evaluation of intervention efficacy. Single Case Report: As this

study focuses on one individual, generalizations to the larger elderly population should be approached with caution.

Despite these limitations, the case provides significant insights into using Comprehensive Geriatric Assessment (CGA) to identify fall risks and support elderly independence.

LEARNING POINTS

1. Fall risks can be present in the elderly even without previous incidents.
2. Declines in daily living activities are critical indicators in fall risk assessments.
3. Fall risks are multifactorial, including mobility issues, cognitive decline, vision problems, and environmental factors.
4. Geriatric assessment tools can facilitate early identification of at-risk elderly individuals.
5. A multidimensional nursing approach involving family is vital for maintaining safety and independence.

CONCLUSION

This case report demonstrates that comprehensive gerontic nursing management supported by Comprehensive Geriatric Assessment facilitates early identification of multifactorial fall risk, strengthens clinical reasoning, and guides individualized nursing interventions. Despite multiple intrinsic risk factors, the patient maintained functional independence and experienced no falls during follow-up, highlighting the importance of multidimensional assessment and family-centered care in community-based geriatric nursing practice.

ETHICAL CLEARANCE

This case report was conducted in accordance with the ethical principles and applicable regulations regarding patient confidentiality and privacy. Ethical approval was not required because this study reports a single clinical case and does not involve experimental interventions, human subject recruitment, or identifiable patient information. All patient data were anonymized prior to publication in accordance with institutional and journal policies.

PATIENT CONSENT

Written informed consent for publication of this case report, including relevant clinical information and anonymized clinical data, was obtained from the patient.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest related to the preparation, authorship, and publication of this article.

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AUTHORS' CONTRIBUTION

Author 1 contributed to case conceptualization, manuscript drafting, literature review, manuscript editing, formatting, final manuscript preparation. critical revision of the manuscript, and approval of the final version. Author 2 contributed to patient assessment, data collection, clinical analysis, clinical supervision, and interpretation of findings.

DATA AVAILABILITY

The data supporting the findings of this case report are available from the corresponding author upon reasonable request. However, certain data cannot be publicly shared due to patient confidentiality and ethical considerations.

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LIST OF ABBREVIATIONS

ADL = Activities of Daily Living; BP = Blood Pressure; CGA = Comprehensive Geriatric Assessment; CI = Confidence Interval; GCS = Glasgow Coma Scale; HR = Hazard Ratio; MMSE = Mini-Mental State Examination; MNA = Mini Nutritional Assessment; PR = Pulse Rate; RR = Respiratory Rate; TUGT = Timed Up and Go Test; WHO = World Health Organization.

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