The Review Of
DIABETIC
STUDIES OPEN ACCESS

Fainting (Syncope) Across Clinical And Community Settings: A Comprehensive Review Of Nutritional Deficiencies, Nursing Assessment, And First Aid Management

AL Hujuri, Jamal Mohammed[1] , AL Enezi, Ahmed Faleh Shalah[2] , AL Otaibi, Hejab Ali[3] , AL Ruqi, Adel Saud Eid[4] , AL Asmari, Abdullah Mesfer[5] , AL Naef, Nawaf Naif Marzoq[6] , AL Mutairi, Nouf Faihan[7]

[1]Ministry of National Guard Health Affairs, Saudi Arabia
[2]Prince Sultan bin Abdulaziz Armed Forces, Saudi Arabia
[3-7]Prince Sultan Military Medical City, Saudi Arabia

Abstract

Fainting (syncope) is a common clinical and community health event that is often benign yet distressing, and in many cases preventable. Nutritional and physiological factors such as hypoglycemia, dehydration, and iron deficiency are among the most frequent non-cardiac causes of transient loss of consciousness, particularly in vulnerable populations including adolescents, older adults, and individuals with chronic conditions. Despite its high prevalence, fainting remains inadequately addressed from a preventive and educational perspective. This review aims to synthesize current evidence on preventable nutritional causes of fainting, highlight nursing-led prevention strategies, and outline evidence-based first aid measures for immediate management. A narrative review of recent literature was conducted using major health databases, focusing on studies published between 2015 and 2025. Findings indicate that early identification of nutritional risk factors, patient education, and routine nursing assessment play a critical role in reducing fainting episodes. Furthermore, appropriate first aid responses—such as proper positioning, hydration, and timely referral—are essential in minimizing complications and recurrence. This review underscores the importance of an integrated prevention–response approach that links nutrition, nursing practice, and first aid education to improve patient safety and public health outcomes.

Keywords Fainting; Syncope; Hypoglycemia; Dehydration; Iron Deficiency; Nursing Prevention; First Aid.

Introduction

Fainting, clinically referred to as syncope, is defined as a transient, self-limited loss of consciousness accompanied by loss of postural tone, followed by spontaneous and complete recovery. It is primarily caused by a temporary reduction in cerebral blood flow and represents a frequent presentation in both healthcare settings and the community. Epidemiological evidence indicates that up to 40% of individuals experience at least one fainting episode during their lifetime, making it a significant yet often underestimated health concern (Shen et al., 2017; Moya et al., 2018).

While syncope may be associated with serious cardiac or neurological conditions, a substantial proportion of cases are related to preventable and non-life-threatening causes, particularly nutritional and physiological factors. Among these, hypoglycemia, dehydration, and iron deficiency anemia are consistently identified as common triggers, especially in adolescents, women of reproductive age, older adults, and individuals with chronic illnesses (Freeman et al., 2020; Gupta & Lipsitz, 2021). These conditions contribute to impaired oxygen or glucose delivery to the

brain, reduced circulating blood volume, or autonomic dysregulation, ultimately increasing susceptibility to fainting.

Hypoglycemia-related fainting often results from prolonged fasting, irregular meals, diabetes mismanagement, or increased metabolic demands, and is frequently preceded by warning symptoms such as dizziness, sweating, and palpitations (Cryer, 2019). Dehydration, particularly in hot climates or during illness, leads to decreased intravascular volume and orthostatic hypotension, which is a well-established precipitant of syncope (Ricci et al., 2020). Similarly, iron deficiency anemia reduces the oxygen-carrying capacity of blood, compromising cerebral perfusion and increasing fainting risk, even in the absence of severe hemoglobin reduction (Camaschella, 2019).

Nurses play a pivotal role in addressing these preventable causes through early assessment, patient education, and risk stratification across clinical and community environments. Routine nursing practices—such as nutritional screening, hydration assessment, monitoring of vital signs, and patient counseling—are essential for early identification of individuals at risk of fainting (Bickley, 2021; WHO, 2022). Moreover, nurses often serve as primary educators, reinforcing preventive behaviors related to diet, fluid intake, and symptom recognition.

In addition to prevention, appropriate first aid management of fainting episodes is crucial to prevent injury, complications, and recurrence. Evidence-based first aid measures, including correct positioning, airway protection, and gradual recovery, can significantly improve outcomes and reduce unnecessary emergency referrals (American Red Cross, 2023). However, gaps remain in public awareness and standardized education regarding fainting first aid, particularly outside healthcare settings.

Given the high prevalence of fainting and the modifiable nature of many contributing factors, an integrated review focusing on nutritional causes, nursing prevention strategies, and first aid measures is both timely and necessary. This review aims to consolidate current evidence to support preventive, educational, and practical approaches that enhance patient safety and promote community health.

Methodology

This study adopted a narrative literature review design to synthesize and critically analyze existing evidence related to preventable causes of fainting, with a specific focus on nutritional factors (hypoglycemia, dehydration, and iron deficiency), nursing prevention strategies, and first aid measures. A narrative approach was selected to allow comprehensive integration of findings from diverse disciplines, including clinical medicine, nursing, nutrition, and public health, where methodological heterogeneity limits the feasibility of a formal meta-analysis.

A systematic search of the literature was conducted using major electronic databases, including PubMed, Scopus, CINAHL, Web of Science, and Google Scholar. The search covered studies published between 2015 and 2025 to ensure the inclusion of recent and relevant evidence. Key search terms and combinations included: fainting, syncope, hypoglycemia, dehydration, iron deficiency, anemia, nursing prevention, and first aid. Boolean operators (AND/OR) were used to refine the search strategy and optimize retrieval.

Eligible studies included peer-reviewed original research articles, systematic and narrative reviews, clinical guidelines, and authoritative reports that addressed non-cardiac fainting causes, nursing roles in prevention, or first aid management. Studies focusing exclusively on cardiac, neurological, or trauma-related syncope without reference to nutritional or preventive factors were excluded. Only articles published in English and involving human subjects were considered.

Relevant articles were screened first by title and abstract, followed by full-text review to assess relevance and eligibility. Data extraction focused on study aims, population characteristics, identified causes of fainting, preventive nursing interventions, and recommended first aid measures.

The findings were then synthesized thematically, allowing the integration of clinical, preventive, and practical perspectives. This approach enabled the development of an integrated understanding of fainting as a largely preventable condition that can be effectively addressed through nutritional management, nursing-led prevention, and appropriate first aid response.

Nutritional Factors Contributing to Fainting

Nutritional factors play a central and often underestimated role in the development of fainting (syncope), particularly in non-cardiac and non-neurological cases. Adequate nutrition and hydration are essential for maintaining cerebral perfusion, glucose availability, oxygen delivery, and autonomic stability. Among the most commonly reported and preventable nutritional contributors to fainting are hypoglycemia, dehydration, and iron deficiency anemia. These conditions frequently coexist and disproportionately affect vulnerable populations, including adolescents, women of reproductive age, older adults, and individuals with chronic illnesses.

Hypoglycemia is defined as an abnormally low blood glucose level, typically below 70 mg/dL, and represents a well-established cause of presyncope and syncope. Glucose is the primary energy source for the brain; therefore, even short periods of hypoglycemia can impair cerebral function and consciousness. Common triggers include prolonged fasting, skipping meals, unbalanced diets, excessive physical exertion, and poor glycemic control in individuals with diabetes (Cryer, 2019).

Clinically, hypoglycemia-related fainting is often preceded by early warning symptoms such as dizziness, sweating, tremors, palpitations, blurred vision, and confusion. Failure to recognize these symptoms may lead to sudden loss of consciousness. Adolescents, individuals following restrictive diets, and patients using insulin or sulfonylureas are particularly at risk (Seaquist et al., 2013). Preventive strategies focus on regular meal consumption, balanced carbohydrate intake, and patient education regarding symptom recognition.

Dehydration is another major nutritional and physiological contributor to fainting, particularly in hot climates, during acute illness, or among older adults with reduced thirst perception. Inadequate fluid intake or excessive fluid loss results in decreased intravascular volume, leading to reduced venous return, orthostatic hypotension, and diminished cerebral blood flow (Ricci et al., 2020).

Electrolyte disturbances, often accompanying dehydration, further impair neuromuscular and cardiovascular function, increasing the likelihood of syncope. Clinical manifestations may include lightheadedness, weakness, dry mucous membranes, and postural dizziness. Dehydration-related fainting is commonly observed in outdoor workers, athletes, elderly individuals, and patients with gastrointestinal illness or diuretic use (Gupta & Lipsitz, 2021). Prevention relies on adequate hydration strategies, electrolyte replacement when necessary, and nursing-led monitoring of fluid balance.

Iron deficiency anemia is a frequent yet frequently overlooked cause of fainting, particularly in women, adolescents, and older adults. Iron deficiency reduces hemoglobin concentration and consequently impairs oxygen transport to tissues, including the brain. Even mild to moderate anemia can significantly reduce cerebral oxygenation, especially during postural changes or exertion (Camaschella, 2019).

Symptoms associated with iron deficiency-related fainting include chronic fatigue, weakness, pallor, shortness of breath, and dizziness. Populations at heightened risk include menstruating women, pregnant individuals, vegetarians with inadequate iron intake, and patients with chronic blood loss or malabsorption disorders (WHO, 2020). Early screening, dietary counseling, and iron supplementation form the cornerstone of prevention.

Importantly, these nutritional factors often interact synergistically. For example, dehydration may exacerbate hypotension in an anemic patient, while hypoglycemia may be more pronounced during periods of inadequate nutritional intake associated with iron deficiency. This interaction

underscores the importance of holistic nutritional assessment in individuals presenting with fainting episodes.

Table 1. Nutritional Factors Contributing to Fainting: Mechanisms, Risk Groups, and Preventive Measures

Nutritional Factor	Primary Mechanism	High-Risk Groups	Common Warning Symptoms	Key Preventive Measures
Hypoglycemia	Reduced cerebral glucose supply	Diabetics, adolescents, fasting individuals	Sweating, dizziness, palpitations, confusion	Regular meals, balanced carbohydrates, glucose monitoring
Dehydration	Reduced blood volume and cerebral perfusion	Elderly, outdoor workers, athletes	Thirst, dry mouth, orthostatic dizziness	Adequate hydration, electrolyte replacement, fluid monitoring
Iron Deficiency	Reduced oxygen delivery to the brain	Women, adolescents, elderly	Fatigue, pallor, shortness of breath	Iron-rich diet, screening, supplementation
Combined Nutritional Deficits	Synergistic impairment of cerebral perfusion	Chronically ill, malnourished individuals	General weakness, recurrent fainting	Comprehensive nutritional assessment

Overall, addressing nutritional factors provides a highly effective and low-cost strategy for reducing fainting incidence. Early identification, patient education, and targeted nutritional interventions—particularly led by nursing professionals—can substantially reduce recurrence and improve patient safety in both clinical and community settings.

Nursing Prevention Strategies

Nurses play a pivotal role in the prevention of fainting episodes across clinical, community, and educational settings. Given their continuous patient contact and holistic scope of practice, nurses are uniquely positioned to identify early risk factors, implement preventive interventions, and educate individuals on lifestyle modifications that reduce the likelihood of syncope. Nursing prevention strategies focus on early assessment, patient education, risk monitoring, and continuity of care, particularly for individuals vulnerable to nutritional and physiological causes of fainting.

Early identification of fainting risk begins with systematic nursing assessment. This includes detailed history-taking related to dietary habits, hydration status, recent illnesses, medication use, menstrual history, and previous fainting episodes. Vital signs monitoring—particularly blood pressure in supine and standing positions—is essential for detecting orthostatic changes associated with dehydration or autonomic instability (Freeman et al., 2020). Nurses also play a key role in screening for symptoms suggestive of hypoglycemia or anemia, such as fatigue, dizziness, palpitations, and visual disturbances.

Nutritional screening tools and hemoglobin monitoring, where available, enable early identification of iron deficiency and malnutrition. In community and outpatient settings, nurses often serve as the first point of contact, allowing for early referral and intervention before fainting episodes occur (Bickley, 2021).

Patient education is a cornerstone of nursing-led fainting prevention. Nurses provide tailored education on the importance of regular meals, balanced nutrient intake, adequate hydration, and

recognition of early warning symptoms. Education regarding hypoglycemia prevention includes guidance on meal timing, carbohydrate balance, and appropriate management for individuals with diabetes or those engaging in prolonged physical activity (Cryer, 2019).

Hydration counseling is particularly relevant in hot climates, among older adults, and for individuals using diuretics or experiencing gastrointestinal illness. Nurses also educate patients on iron-rich dietary sources, supplementation adherence, and the importance of follow-up testing when anemia is suspected (Camaschella, 2019). Educational interventions delivered by nurses have been shown to significantly reduce recurrence of fainting and presyncope episodes (van Dijk et al., 2016).

Preventive strategies extend beyond individual education to include structured nursing interventions. In hospitals and clinics, nurses monitor fluid intake and output, administer nutritional support, and collaborate with multidisciplinary teams to address underlying causes. In schools, workplaces, and community health programs, nurses play an essential role in health promotion initiatives, screening campaigns, and early referral systems for at-risk populations.

Special attention is required for vulnerable groups such as adolescents, pregnant women, and older adults. For older adults, nurses emphasize slow positional changes, hydration monitoring, and medication review to reduce syncope risk (Gupta & Lipsitz, 2021). For adolescents, prevention strategies focus on dietary adequacy and avoidance of prolonged fasting.

Continuity of care is critical in preventing recurrent fainting episodes. Nurses coordinate follow-up care, reinforce education, and ensure adherence to nutritional and lifestyle recommendations. Documentation of fainting events, triggers, and preventive plans supports effective communication among healthcare providers.

By integrating assessment, education, and follow-up, nurses serve as frontline agents in reducing preventable fainting. Nursing-led prevention strategies not only decrease the incidence and recurrence of syncope but also enhance patient safety, reduce unnecessary emergency visits, and contribute to improved public health outcomes. Their role is particularly vital in resource-limited settings where simple preventive measures can yield substantial benefits.

First Aid Measures for Fainting Episodes

First aid management of fainting (syncope) plays a critical role in preventing injury, reducing complications, and supporting safe recovery. Although fainting is often benign and self-limiting, inappropriate or delayed response can result in falls, trauma, or prolonged symptoms. Evidence-based first aid measures emphasize prompt recognition, correct positioning, airway safety, and careful post-episode management, and are applicable in both healthcare and community settings.

When a fainting episode occurs, the primary objective of first aid is to restore cerebral blood flow and ensure safety. The individual should be assisted to a supine position, preferably lying flat on their back. Elevating the legs approximately 20–30 cm above heart level facilitates venous return and improves cerebral perfusion, often leading to rapid recovery of consciousness (American Red Cross, 2023).

If the person cannot lie down, they should be supported into a seated position with the head lowered between the knees. Tight or restrictive clothing around the neck and waist should be loosened, and the surrounding environment should be made safe by removing nearby hazards. Airway patency must be ensured, and the individual should not be given food or fluids until fully conscious to reduce aspiration risk (WHO, 2022).

Most individuals regain consciousness within seconds to a few minutes. During this period, first aid responders should continuously observe breathing, skin color, and responsiveness. If the individual does not regain consciousness within 1–2 minutes, emergency medical services should be activated. Once consciousness returns, the individual should remain lying down for several

minutes to prevent recurrent fainting, followed by gradual sitting and standing under supervision (Shen et al., 2017).

For suspected hypoglycemia, oral glucose or a sugary drink may be administered once the individual is fully alert and able to swallow safely. In cases where dehydration is suspected, oral rehydration with water or electrolyte-containing fluids is recommended after initial recovery. These interventions are simple yet effective in preventing recurrence and promoting stabilization (Cryer, 2019; Ricci et al., 2020).

Post-episode care is an integral part of first aid management. Individuals should be reassured and encouraged to rest, as anxiety and sudden exertion may precipitate recurrent episodes. First aid responders and healthcare providers should advise the individual to avoid sudden posture changes and to seek medical evaluation if fainting is recurrent, unexplained, or associated with additional symptoms.

Education following a fainting episode is particularly important. Individuals should be informed about recognizing early warning signs such as dizziness, nausea, sweating, or visual changes, and advised to sit or lie down immediately if these symptoms occur. This anticipatory response can prevent progression to full loss of consciousness (van Dijk et al., 2016).

While many fainting episodes are benign, certain features necessitate immediate medical attention. These include fainting accompanied by chest pain, shortness of breath, seizures, head injury, or occurring during exertion. Fainting in individuals with known cardiovascular disease, diabetes with severe hypoglycemia, or repeated unexplained episodes should also prompt referral (Moya et al., 2018).

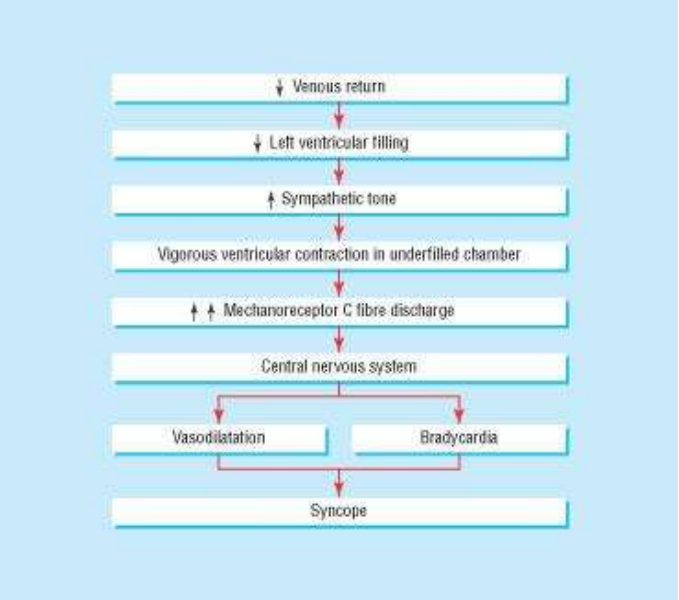

Figure 1. First Aid Decision Pathway for Fainting Episodes

In summary, first aid measures for fainting focus on rapid positioning, monitoring, supportive care, and appropriate escalation. When combined with preventive education and nursing follow-up, effective first aid response significantly enhances patient safety and reduces the burden of fainting-related complications.

Integrated Prevention–Response Framework

Preventing and managing fainting effectively requires a continuum-based approach that links upstream prevention with timely and appropriate response. An integrated prevention–response framework conceptualizes fainting not as an isolated event, but as the final outcome of modifiable

nutritional, physiological, and behavioral factors that can be addressed through coordinated nursing practice and first aid interventions. This framework emphasizes early risk identification, targeted prevention, rapid response, and follow-up, ensuring continuity of care across clinical and community settings.

At the prevention level, the framework begins with nutritional and physiological stability. Adequate glucose availability, hydration, and oxygen-carrying capacity are foundational for maintaining cerebral perfusion. Hypoglycemia, dehydration, and iron deficiency represent key points of vulnerability where preventive action is both feasible and cost-effective. Nursing assessment plays a central role at this stage by identifying at-risk individuals through dietary screening, hydration assessment, monitoring of vital signs, and review of health history. Preventive nursing interventions—such as nutritional counseling, hydration guidance, and early referral for anemia management—form the first line of defense against fainting episodes.

The second layer of the framework focuses on early warning recognition and self-protective behavior. Many fainting episodes are preceded by prodromal symptoms, including dizziness, sweating, nausea, visual disturbances, and generalized weakness. Education delivered by nurses empowers individuals to recognize these warning signs and respond proactively by sitting or lying down, thereby interrupting progression to full syncope. This anticipatory component is critical in community settings, schools, workplaces, and among vulnerable populations such as older adults and adolescents.

When fainting occurs despite preventive measures, the framework transitions seamlessly into the response domain, centered on evidence-based first aid. Immediate positioning, leg elevation, airway safety, and environmental protection restore cerebral perfusion and minimize injury risk. Once consciousness is regained, supportive measures—such as controlled mobilization, oral fluids, or glucose when appropriate—reduce recurrence. Clear decision points within the framework guide responders on when to escalate care and seek medical evaluation, particularly in cases of recurrent or complicated fainting.

The final component of the framework addresses post-event follow-up and recurrence prevention. Documentation of triggers, nursing reassessment, reinforcement of education, and continuity of care close the loop between response and prevention. This cyclical design ensures that each fainting episode informs future risk reduction strategies rather than being treated as an isolated incident.

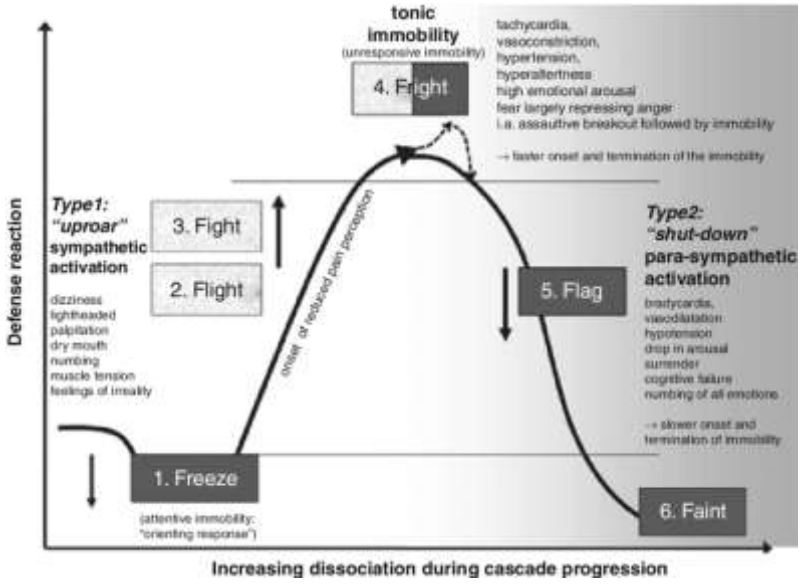

Figure 2. Integrated Prevention–Response Framework for Fainting

Overall, the integrated prevention–response framework underscores the complementary roles of nutrition, nursing prevention, and first aid in managing fainting as a largely preventable condition. By aligning preventive assessment, patient education, immediate response, and follow-up within a single model, this framework supports safer practice, reduces recurrence, and enhances patient and public health outcomes.

Discussion

This review highlights fainting as a common yet largely preventable condition when nutritional, nursing, and first aid dimensions are addressed in an integrated manner. The synthesis of evidence confirms that hypoglycemia, dehydration, and iron deficiency remain among the most frequent non-cardiac contributors to fainting across age groups and settings, reinforcing findings from previous clinical and public health studies. Unlike cardiac or neurological syncope, these causes are modifiable, making prevention both feasible and cost-effective.

One of the key insights of this review is the central role of nursing practice in shifting fainting management from a reactive to a preventive model. Nurses are uniquely positioned to identify early warning signs, conduct nutritional and hydration assessments, and deliver tailored education. The literature consistently demonstrates that patient education and early intervention—particularly regarding meal regularity, fluid intake, and recognition of prodromal symptoms—significantly reduce the recurrence of fainting episodes. This aligns with prior evidence emphasizing the effectiveness of education-based interventions and physical counterpressure strategies in vasovagal and nutrition-related syncope.

The integrated prevention–response framework proposed in this review adds conceptual value by linking upstream nutritional stability with downstream first aid response and follow-up. Previous studies often address fainting either from a diagnostic or emergency management perspective, with limited attention to continuity between prevention and response. By conceptualizing fainting as a cyclical process rather than an isolated event, this framework supports safer practice across healthcare, educational, and community environments. Such integration is particularly relevant in resource-limited settings, where simple nursing-led interventions and basic first aid knowledge can prevent unnecessary emergency department visits.

The role of first aid measures emerged as a critical bridge between prevention and clinical care. Evidence-based practices—such as prompt positioning, leg elevation, and gradual recovery—are consistently shown to improve outcomes and prevent injury. However, the literature also reveals persistent gaps in public awareness and training related to fainting first aid, suggesting a need for broader community education initiatives led by nurses and allied health professionals.

Despite its contributions, this review has limitations. As a narrative literature review, it is subject to selection bias and does not provide quantitative effect estimates. Additionally, much of the existing literature focuses on adult populations, with fewer studies addressing children and adolescents outside school-based settings. Future research should prioritize interventional studies evaluating nursing-led prevention programs, the impact of community first aid training on fainting outcomes, and the integration of nutritional screening into routine nursing assessments.

In conclusion, the findings support the view that fainting is not merely an unpredictable event but often a preventable outcome of modifiable risk factors. Strengthening nutritional assessment, empowering nursing prevention strategies, and expanding first aid education can collectively reduce the burden of fainting, enhance patient safety, and improve public health outcomes.

Conclusion

Fainting is a widespread health event that is frequently misunderstood as sudden or unavoidable, despite strong evidence indicating that many episodes are preventable through targeted nutritional management, proactive nursing interventions, and appropriate first aid response. This review

demonstrates that hypoglycemia, dehydration, and iron deficiency are among the most common non-cardiac causes of fainting and represent modifiable risk factors that can be effectively addressed in both clinical and community settings.

The findings underscore the critical role of nurses as frontline practitioners in the prevention of fainting. Through early risk assessment, nutritional and hydration screening, patient education, and continuity of care, nurses contribute significantly to reducing the incidence and recurrence of fainting episodes. Nursing-led interventions are particularly impactful in vulnerable populations, including adolescents, older adults, and individuals with chronic conditions, where preventive strategies can markedly improve safety and quality of life.

Equally important is the role of evidence-based first aid measures in minimizing injury, complications, and unnecessary healthcare utilization. Prompt positioning, careful monitoring during recovery, and appropriate referral decisions form a vital bridge between preventive care and clinical management. When first aid knowledge is combined with preventive education, fainting can be managed safely and confidently by both healthcare providers and the general public.

In conclusion, fainting should be approached as a continuum of prevention and response rather than an isolated event. Integrating nutritional assessment, nursing prevention strategies, and first aid education within a unified framework offers a practical, low-cost, and effective approach to reducing the burden of fainting and enhancing patient and public health outcomes.

References

1. American Red Cross. (2023). First aid/CPR/AED participant's manual. American National Red Cross.
2. Bickley, L. S. (2021). Bates' guide to physical examination and history taking (13th ed.). Wolters Kluwer.
3. Camaschella, C. (2019). Iron deficiency. Blood, 133(1), 30–39. https://doi.org/10.1182/blood-2018-05-815944
4. Cryer, P. E. (2019). Hypoglycemia in diabetes: Pathophysiology, prevalence, and prevention. Endocrinology and Metabolism Clinics of North America, 48(4), 803–813. https://doi.org/10.1016/j.ecl.2019.08.002
5. Freeman, R., Wieling, W., Axelrod, F. B., Benditt, D. G., Benarroch, E., Biaggioni, I., … Van Dijk, J. G. (2020). Consensus statement on the definition of orthostatic hypotension, neurally mediated syncope, and the postural tachycardia syndrome. Clinical Autonomic Research, 30(1), 9–18. https://doi.org/10.1007/s10286-020-00673-3
6. Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. Health Information & Libraries Journal, 26(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x
7. Greenhalgh, T., Thorne, S., & Malterud, K. (2018). Time to challenge the spurious hierarchy of systematic over narrative reviews? European Journal of Clinical Investigation, 48(6), e12931. https://doi.org/10.1111/eci.12931
8. Gupta, V., & Lipsitz, L. A. (2021). Orthostatic hypotension in the elderly: Diagnosis and treatment. Journal of the American Geriatrics Society, 69(1), 36–44. https://doi.org/10.1111/jgs.16801
9. Moya, A., Sutton, R., Ammirati, F., Blanc, J. J., Brignole, M., Dahm, J. B., … van Dijk, J. G. (2018). Guidelines for the diagnosis and management of syncope (2018). European Heart Journal, 39(21), 1883–1948. https://doi.org/10.1093/eurheartj/ehy037
10. Ricci, F., Fedorowski, A., Radico, F., Romanello, M., Tatasciore, A., Di Nicola, M., & De Caterina, R. (2020). Cardiovascular morbidity and mortality related to orthostatic hypotension and dehydration. European Journal of Preventive Cardiology, 27(8), 811–822. https://doi.org/10.1177/2047487319871623
11. Seaquist, E. R., Anderson, J., Childs, B., Cryer, P., Dagogo-Jack, S., Fish, L., … Zinman, B. (2013). Hypoglycemia and diabetes: A report of a workgroup of the American Diabetes

Association and the Endocrine Society. Diabetes Care, 36(5), 1384–1395. https://doi.org/10.2337/dc12-2480
12. Shen, W. K., Sheldon, R. S., Benditt, D. G., Cohen, M. I., Forman, D. E., Goldberger, Z. D., … Slotwiner, D. J. (2017). 2017 ACC/AHA/HRS guideline for the evaluation and management of patients with syncope. Circulation, 136(5), e60–e122. https://doi.org/10.1161/CIR.0000000000000499
13. van Dijk, N., Quartieri, F., Blanc, J. J., Garcia-Civera, R., Brignole, M., & Sutton, R. (2016). Effectiveness of physical counterpressure maneuvers and patient education in preventing vasovagal syncope. Journal of the American College of Cardiology, 68(3), 256–265. https://doi.org/10.1016/j.jacc.2016.04.059
14. World Health Organization. (2020). Anaemia in women and children: Global health estimates. World Health Organization.
15. World Health Organization. (2022). Integrated care for older people: Guidelines on community-level interventions. World Health Organization.