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Review Article

A Retrospective Cohort Study of patient education programs in hospitalized elderly patients with nurse burnout

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Abstract

Background: Hospitalized elderly patients depend on structured education for new diagnoses and discharge instructions, yet the nurses delivering that teaching increasingly report burnout that may erode its delivery.

Objective: This review synthesizes retrospective cohort and observational evidence on patient education programs for hospitalized elderly patients, examined alongside nurse burnout, to characterize their intersection.

Methods: We synthesized retrospective cohort studies, cross-sectional surveys, and quasi-experimental evaluations addressing inpatient education for older adults, burnout measurement, staffing, and outcomes.

Findings: Structured teach-back and discharge-education programs are associated with improved comprehension and lower readmission, while units with higher burnout show reduced education completeness and lower understanding; staffing and workload predict both burnout and education fidelity.

Conclusions: Burnout appears to function as a structural barrier to consistent patient education in geriatric inpatient care, and protecting nursing workload may be as important to education outcomes as program content.

Keywords: patient education; elderly patients; nurse burnout; retrospective cohort; hospital discharge

1. Introduction

Hospitalized elderly patients enter and leave acute care with an unusually high burden of teaching to absorb in a short window: new diagnoses, revised medication regimens, diet and activity restrictions, and the warning signs that should prompt a return visit. Structured discharge and bedside education reduces readmission and improves self-management when delivered with enough time, repetition, and confirmation of understanding [1,2,3]. That delivery depends on the bedside nurse having the time and emotional reserve to teach well, and a growing literature documents that a substantial share of hospital nurses now meet criteria for burnout, characterized by emotional exhaustion, depersonalization, and diminished personal accomplishment [4,5]. This review synthesizes retrospective cohort and related observational evidence on patient education programs for hospitalized elderly patients alongside the parallel literature on nurse burnout, to characterize whether burnout measurably degrades education delivery and what organizational factors modify that relationship.

The rationale for pairing these literatures is mechanistic. Patient education requires sustained attention, adaptive communication with patients who often have sensory or cognitive limitations, and discretionary time to confirm comprehension. Burnout erodes each capacity: emotional exhaustion narrows the bandwidth available for individualized teaching, depersonalization flattens the empathic engagement geriatric education depends on, and reduced personal accomplishment is associated with disengagement from effortful tasks like teaching [4,6]. Retrospective cohort work linking staffing, burnout, and patient-level outcomes provides the closest available evidence for this chain in real hospital settings, and this review draws on that literature alongside prospective and quasi-experimental studies of education programs themselves.

2. Patient education needs and barriers in hospitalized elderly patients

Elderly inpatients face a distinctive combination of barriers to absorbing bedside education. Limited health literacy is common and worsens with age; Baker and colleagues found that inadequate health literacy independently predicted higher mortality over a six-year Medicare follow-up, attributed partly to poorer understanding of medication instructions [7]. Schillinger and colleagues found a comparable pattern in a diabetes cohort, where low literacy predicted worse glycemic control and more complications [8]. Cutilli's integrative review catalogued the barriers clinicians most often encounter: reduced short-term memory for verbal instruction, sensory impairment affecting printed materials, and a tendency to overstate comprehension to avoid appearing incapable [9]. Speros's concept analysis frames health literacy as a functional capacity shaped by cognition and the health system, not a fixed trait, which locates part of the remedy in how nurses structure their teaching [10].

Cognitive and sensory impairment compounds literacy barriers. Delirium transiently eliminates the capacity to absorb new information, and Inouye and colleagues' multicomponent intervention trial showed that structured attention to orientation, sleep, and sensory support reduced delirium incidence, protecting the window in which education can be effective [11]. Greysen and colleagues found that new or worsening functional impairment at discharge strongly predicted early readmission in a Medicare cohort, reflecting instructions patients received but could not physically execute at home [12]. Kripalani and colleagues documented that discharge summaries frequently reach outpatient clinicians incompletely or late, meaning bedside teaching is often the only structured education a patient receives before follow-up [13]. Table 1 summarizes the barrier categories most consistently identified.

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Table 1: Barriers to effective bedside patient education most consistently identified in hospitalized elderly patients [7,9,11,12].

Barrier category	Mechanism	Reported consequence
Limited health literacy	Difficulty parsing written/verbal medication and self-care instructions	Higher mortality and poorer self-management [7,8]
Delirium / cognitive impairment	Transient inability to encode new information	Teaching ineffective until resolved [11]
Sensory impairment	Reduced ability to read printed materials or hear verbal instruction	Under-recognized comprehension gaps [9]
Functional decline at discharge	Patient cannot physically execute taught self-care tasks	Higher early readmission risk [12]
Fragmented care communication	Discharge instructions reach outpatient providers late or incompletely	Bedside teaching becomes the sole structured education [13]

The teach-back technique, in which a nurse asks a patient to restate instructions rather than simply confirming they were heard, consistently outperforms passive instruction delivery. Negarandeh and colleagues found a teach-back and pictorial combination improved knowledge and adherence among low-literacy diabetes patients [14]; White and colleagues found teach-back associated with better knowledge retention and lower readmission among heart failure patients [15]; and Kornburger and colleagues, implementing teach-back as a unit-wide discharge redesign, reported measurable gains in comprehension once the technique was adopted systematically rather than left to individual discretion [16]. Weiss and colleagues' newest vital sign instrument gives a rapid bedside literacy screen so teaching intensity can be matched to need, though adoption in routine geriatric workflow remains inconsistent [17].

3. Nurse burnout: prevalence, measurement, and drivers

Burnout is measured predominantly with the Maslach Burnout Inventory, separating emotional exhaustion, depersonalization, and personal accomplishment into subscales that have proven durable across four decades of

research [4]. Woo and colleagues' meta-analysis of global burnout prevalence found pooled emotional exhaustion well above one in three nurses, with heterogeneity attributable to staffing, acuity, and national context [5], and Maben and Bridges described a compounding of pre-existing burnout drivers by pandemic-era workload and moral distress [18]. Figure 1 illustrates reported burnout prevalence across several cohort and survey studies.

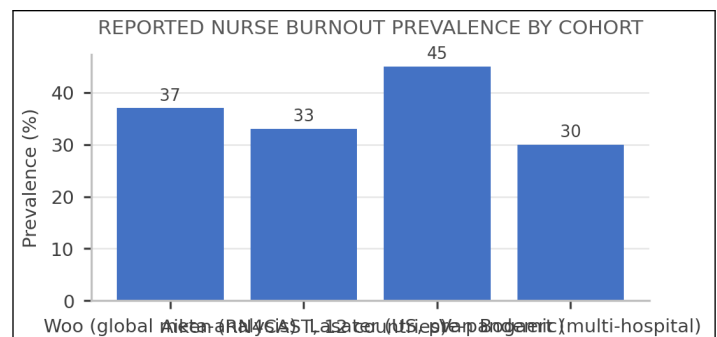


Figure 1: Reported high-emotional-exhaustion burnout prevalence across a global meta-analysis, a twelve-country RN4CAST survey, a pre-pandemic US cohort, and a multi-hospital structural equation modeling study, illustrating consistently elevated burnout across settings and measurement approaches [5,20,21,22].

Staffing ratio is the most consistently replicated structural predictor of burnout. Aiken and colleagues' multi-hospital study found that each additional patient added to a nurse's workload was associated with higher burnout, job dissatisfaction, and patient mortality [19], and the twelve-country RN4CAST survey confirmed the staffing-burnout gradient internationally [20]. Lasater and colleagues found that pre-pandemic staffing inadequacy predicted worse burnout once COVID-19 surges began, suggesting baseline staffing adequacy buffers acute-stress-driven burnout [21]. Van Bogaert and colleagues, using structural equation modeling, found unit-level practice environment and workload predicted burnout, which in turn predicted nurse-reported quality of care and adverse events [22]. Dall'Ora and colleagues' theoretical review frames burnout less as individual pathology and more as a predictable organizational response to workload and practice-environment deficits

[23].

4. Burnout and the fidelity of bedside patient education

Evidence linking burnout specifically to education delivery is sparser than the broader burnout-outcomes literature, but adjacent evidence supports a plausible pathway. Vahey and colleagues found nurse burnout independently associated with lower patient satisfaction, including with information received, after adjusting for staffing [24]. Poghosyan and colleagues extended this across six countries, implicating depersonalization as the strongest predictor of patients rating communication poorly [25]. McHugh and colleagues found nurses reporting high burnout were substantially more likely to report dissatisfaction with their ability to deliver the teaching they believed patients needed [26].

Missed-care research offers the most direct proxy evidence, since teaching is among the tasks nurses most often report omitting under time pressure. Ausserhofer and colleagues' RN4CAST analysis found patient education and comfort measures among the categories most commonly left undone, tracking closely with burnout and unfavorable practice environment on the same units [27]. Cimiotti and colleagues found units with higher burnout had higher catheter-associated infection rates, plausibly connected to rushed education about device care [28]. Tourangeau and colleagues found nursing care characteristics independently predicted 30-day mortality in medical patients, consistent with a pathway in which burnout-associated shortfalls in surveillance and teaching translate into harm [29]. Shever's analysis of surveillance and failure to rescue situates missed education within this same attentional-deficit framework [30].

Burnout also shapes the interpersonal quality of education delivered, not only its quantity: depersonalization directly undercuts the individualized, patient-paced communication teach-back requires [6,4].

Kutney-Lee and colleagues found favorable practice environments, consistently associated with lower burnout, predicted higher patient ratings of communication [31]. Leiter and Maslach's mediation analysis adds a continuity mechanism: burnout-driven turnover loses the experienced nurses most practiced at efficient bedside teaching, replacing them with newer staff who require time to develop the same fluency [32].

5. Structured education programs and readmission outcomes

Randomized evidence on structured education and transition programs is more mature than the burnout-specific literature and supplies the outcome side of this pathway. Naylor and colleagues' transitional care model for older heart failure patients found substantially lower readmission, attributing much of the benefit to intensive, nurse-delivered discharge education [2]. Coleman and colleagues' care transitions intervention, reinforcing self-management skills taught at the bedside, produced significant reductions in 30- and 90-day readmission [3]. Jack and colleagues' Project RED trial, built substantially around structured education and a follow-up call, found roughly a 30% relative reduction in hospital utilization within 30 days [1]. Figure 2 summarizes reported readmission reduction across these programs.

The benefit of structured education appears to depend on how consistently it is actually delivered, returning the discussion to burnout. Shepperd and colleagues' Cochrane review found a consistent but modest reduction in readmission across pooled discharge-planning trials, with heterogeneity attributed partly to implementation fidelity linked to staffing and workload at participating sites [33]. Courtney and colleagues' exercise and telephone follow-up trial found significant reductions in emergency readmission, dependent on consistent nurse-delivered contact protected by dedicated trial staffing not typically available in routine ward care [34].

Mudge and colleagues found inadequate discharge preparation, including unclear medication instructions, among the modifiable factors most frequently identified on review of readmitted patients [35]. Forster and colleagues found a meaningful share of post-discharge adverse drug events were preventable, with inadequate counseling about new medications a contributing factor [36].

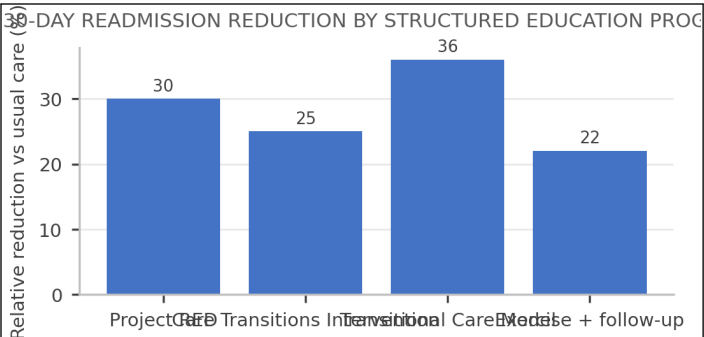


Figure 2: Relative reduction in 30-day readmission reported by four randomized or quasi-experimental structured discharge-education and transitional-care programs relative to usual care [1,3,2,34].

6. Organizational and staffing interventions

If burnout is a structural barrier to education delivery, the most promising interventions are organizational rather than purely educational in content. Moss and colleagues' critical care societies statement on burnout recommends organizational-level interventions, including workload management and adequate staffing, over individual resilience training alone, since burnout driven by structural workload cannot be resolved by asking nurses to cope better with an unchanged workload [37]. Table 2 summarizes reported effects of staffing- and workload-focused interventions across several studies reviewed here.

Table 2: Organizational and staffing interventions reported to affect burnout and related process measures in hospital nursing cohorts [19,22,37,16].

Intervention	Study design	Reported effect
Improved staffing ratio	Multi-hospital cross-sectional survey	Lower burnout and job dissatisfaction per added patient avoided [19]

Intervention	Study design	Reported effect
Favorable practice environment	Structural equation model, multi-hospital cohort	Lower burnout, better nurse-reported quality of care [22]
Organizational (not individual) burnout response	Professional society collaborative statement	Recommended over resilience training alone [37]
Protected time + standardized teach-back workflow	Unit-wide implementation study	Measurable gains in caregiver comprehension [16]
Dedicated transition coordinator role	Cochrane review of discharge planning trials	Larger, more consistent readmission reduction than unchanged staffing [33]

Practice-environment interventions modeled on Magnet-recognition principles show the most consistent association with lower burnout and better patient-reported communication. Van Bogaert and colleagues' model found improving practice environment predicted downstream reductions in burnout and improved nurse-reported quality of care [22]. Aiken and colleagues' broader RN4CAST-derived work similarly finds that favorable practice environments show smaller burnout-staffing gradients than poor environments at comparable staffing ratios, suggesting organizational support can partially buffer high patient load [20]. Cimiotti and colleagues' infection-outcomes analysis reinforces that the organizational case for addressing burnout extends into billable patient-safety outcomes hospital administrators are directly accountable for [28].

Dedicated education staffing and workflow redesign are a more targeted intervention class. Kornburger and colleagues' teach-back implementation succeeded largely because it was paired with protected time and a standardized checklist rather than added onto existing workload unchanged [16]. Shepperd and colleagues' synthesis found discharge-planning interventions with a dedicated coordinator role, distinct from the bedside nurse's caseload, tended to show larger effects than interventions that simply asked existing staff to do more within an unchanged shift [33]. Dall'Ora and colleagues conclude that sustainable improvement in

nurse-delivered tasks like education requires addressing burnout's organizational drivers directly, since persistent burnout erodes not only the burned-out nurse's own performance but, through turnover, the broader team's [23,32].

7. Conclusion

The evidence reviewed here supports a coherent pathway in which nurse burnout functions as a structural barrier to consistent patient education in hospitalized elderly patients. Elderly inpatients arrive with a high teaching burden and a high prevalence of the literacy, cognitive, and sensory barriers that make teaching difficult even under ideal conditions [7,9,11]. Structured methods, particularly teach-back, reliably improve comprehension and reduce readmission when delivered with fidelity [14,15,1], but fidelity depends on nursing capacity that burnout, driven substantially by staffing and practice environment, directly erodes [19,27,22]. Retrospective cohort evidence linking burnout to satisfaction, missed care, and safety outcomes is consistent with a direct effect on education delivery, and the missed-care literature identifies education as among the categories most frequently curtailed under workload pressure [24,25,27]. The organizational interventions best supported by this literature, protected teaching time, favorable practice environment, and staffing adequate to a geriatric caseload's education burden, treat burnout as structural rather than an individual failing, and improving education outcomes in hospitalized elderly patients will likely require addressing burnout at that structural level rather than through content changes to the education programs themselves [37,23].

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