# RESEARCH

# Bridging the gap: summative content analysis of understanding barriers in elderly patient

Afshin Khazaei<sup>1</sup>, Ali Safdari<sup>2</sup>, Mehdi Molavi Vardanjani<sup>3</sup>, Hojjat Farahmandnia<sup>4</sup>, and Ali Afshari<sup>3\*</sup>

education from nurses' perspectives

# Abstract

**Background** One of the main tasks of nurses in providing health therapeutic services is patient education, an essential component of nursing care. This educative process is necessary for elderly patients with multiple and personalized needs. Hence, this study identified and prioritized the factors that hinder nurses from educating elderly patients admitted to teaching hospitals.

**Methods** Data were collected through an electronic survey (Porsline) via summative content analysis. This study was conducted with nurses in teaching hospitals in Hamadan, western Iran, from December 2024 to January 2025. Seven hundred twenty-four nurses were recruited through convenience sampling to answer the following openended question: "In your opinion, what are the causes and factors that you when educating elderly patients in the hospital ward?"

**Results** The analysis was organized into 12 main categories and 26 subcategories, which were ultimately reduced to six main themes, and their frequencies were calculated. The most frequent category was "staff training," which appeared 1,387 times, whereas the least frequent category was "lack of motivation," with 91 repetitions. Other categories were identified through data analysis on the basis of frequency and significance, including "hospital setting," "memory issues," "attention deficits," language and communication difficulties," sensory impairments," family involvement," peer support," mobility issues," pain and discomfort," anxiety and depression."

**Conclusions** This study identified the main barriers preventing nurses from educating elderly patients in Iranian hospitals. Nurses can address these barriers by being more thorough in training, improving human resources, and upgrading relevant capacities and methods, leading to enhanced health literacy, self-care management, and improved quality of care overall for this population group. Organized community in-process support for multimorbidity patients is the key to strengthening self-care management. Implications of all the available evidence The results of this study have implications for practice. These findings may serve as a foundation for developing interventions and policies to address these barriers and enhance care for geriatric patients.

Clinical trial number Not applicable.

Keywords Patient education, Nursing, Elderly, Qualitative study

\*Correspondence: Ali Afshari afshari777@gmail.com

Full list of author information is available at the end of the article



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# Background

As the elderly population continues to rise, healthcare systems worldwide face a distinctive set of challenges that require a paradigm shift toward the specialized requirements of geriatric patients [1]. As the demographic landscape changes, healthcare professionals, mainly nurses, play a fundamental role in ensuring this population can have appropriate schooling in health management [2]. Unfortunately, many barriers prevent nurses from teaching effectively to elderly patients, which can result in undesirable patient outcomes. Nurses use a variety of adaptive strategies to mitigate these challenges, such as tailor-made educational materials (e.g., large print booklets or simplified graphic charts), reinforcing fundamental concepts with spaced retrieval practices, and leveraging assistive technologies (e.g., hearing amplifiers). To mitigate patient fatigue and improve retention, widespread practices include proactive family engagement and structured shortened educational sessions. These frameworks, underpinned by the literature and clinical experience, demonstrate how nurses are working to adapt how they deliver education to address the specific cognitive, sensory, and psychosocial requirements of elderly patients [3–5].

Patient education is essential to health literacy and self-management in older adults [6]. Health literacy is the degree to which an individual can obtain and process health and is a necessary determinant of health outcomes [7]. While the importance of patient education is well established, barriers to nurses' teaching of older patients have been reported in multiple studies. These barriers are categorized into individual, systemic, and environmental factors. Personal factors include nurses' perceptions of their teaching skills and their perceptions of the distinctive aging patients [8]. These systemic barriers include institutional policies, limited time for patient visits, and insufficient geriatric training [9]. Environmental factors involve the physical environment in which education occurs [10].

While previous studies conducted in Iran have reported general barriers to patient education, including inadequate facilities, workload, and communication barriers [11, 12], a significant gap exists in systematically ranking the barriers on the basis of their perceived importance and frequency from the nurses' point of view. Prior research has focused predominantly on individual barriers rather than the comparative hierarchical importance of identified barriers in the context of elderly patient education [7, 8]. The present study aimed to fill this knowledge gap through a comprehensive analysis to identify the most critical factors impeding the practical education of elderly patients in Iranian hotels, providing valuable insights for healthcare administrators and policymakers. Qualitative research has emerged as an appropriate methodology for exploring the complexities of the 'barriers' to teaching elderly patients from the nurse's perspective. However, the current research offers only some insight, and more studies are needed to understand and overcome these challenges. Using qualitative approaches that can explore nurses' attitudes, beliefs, and experiences can help to gain insight into specific barriers that quantitative measures may not readily identify [13]. Given the variety of ethnicities, cultures, and languages existing in Iran, as well as the lack of qualitative studies on the obstacles in educating elderly patients, the current study aimed to explore the perceptions of nurses about these barriers.

### Methods

This study applied a summative content analysis approach that goes beyond counting words to identify the underlying meanings of the text (latent content) [14]. In providing a clearer understanding of a text's most essential components and their context with the larger text, this method is based on a social constructivist approach to building knowledge. Ethical approval was obtained from the research ethics committees of Hamadan University of Medical Sciences (Code of Ethics: IR. UMSHA. REC. 1403. 601). The participants were fully briefed beforehand and were informed of the study's purpose, potential benefits, and voluntary nature. They were also given an accompanying link to the study details. Reporting followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines [15].

# Sampling and participants

Hamedan Province has 15 state educational hospitals in Hamedan, Razan, Famenin, Malayer, Nahavand, Kabudarahang, Tuyserkan, Famenin, and Bahar. A total of 2,122 nurses are employed in all educational hospitals across Hamadan Province. The study population consisted of nursing staff working at government multicenter educational hospitals in Hamadan Province from December 2024-January 2025. A convenience sampling method was employed to select participants, easing access due to the logistical difficulties of reaching nursing staff across multiple centers. However, convenience sampling has inherent limitations, such as potential selection bias and reduced generalizability. For example, nurses who volunteer to participate may have stronger opinions about barriers to elderly patient education or may have been more available to engage in the study, which could skew the results. While stratified or purposive sampling could have improved representativeness, constraints on resources (e.g., time and funding) and the absence of existing demographic data for stratification made convenience sampling the most feasible choice [16]. These

limitations are acknowledged, and the findings should be interpreted cautiously, especially when applied to other contexts or populations.

Eligible participants included those with an associate, bachelor's, master's, or PhD degree in nursing. Other inclusion criteria for participants included having at least one year of work experience; not being employed in pediatric or obstetric hospitals due to the lack of elderly patients; intensive care units that had patients with reduced levels of consciousness or intubation; working part-time or full-time (morning, evening, or night shifts); and a willingness to participate in the study. Nursing personnel who submitted incomplete questionnaires were excluded from the study. In the Asia–Pacific region, patients aged 60 years or older were defined as elderly patients in the present study [17]. Ultimately, 744 nurses completed the online questionnaire.

# **Data collection**

An Iran-based online questionnaire design platform was used to collect the data. A questionnaire was developed for mobile and Windows devices, with a maximum completion time of 10 min. After obtaining the necessary approval, the first author, an assistant professor of nursing with 21 years of professional experience, shared the questionnaire link with the head nurses of all the government educational hospitals in Hamadan Province. Next, the administrators shared the link to the questionnaire through virtual channels for nurses working at various educational hospital wards. The first section of the questionnaire included questions about professional and demographic information, such as employment status, age, field of study, work experience, marital status, work shift times (fixed or rotating), and the relevant ward. Next, the main study question sought to reveal manifest content. The participants were invited to respond in an open-text box to the following question: "In your opinion, what are the causes and factors that barriers you when educating elderly patients in the hospital ward?" Finally, participants were asked to provide their responses in the free-text box for additional clarification, if necessary, to reveal any latent content.

The questionnaire was based on a literature review on barriers to nursing education in elderly patients [18, 19] and was validated via a multistep process. A panel of three nursing experts with more than ten years of experience in clinical and academic work in the field of geriatric care (including outpatient and long-term care) were trained to review the instrument on the basis of clarity, relevance, and harmony with Iran's healthcare system and to screen the final version of the instrument. Content validity was assessed by the content validity index (CVI), which has a score of 0.89, suggesting high relevance and appropriateness. The questionnaire was subsequently pilot tested with 30 nurses (excluded from the final sample) to evaluate understanding, usability, and time efficacy. The pilot also provided feedback highlighting ambiguities in two open-ended questions, which were reworded to clarify. The final version of the questionnaire was conducted through Porsline, an Iranian internet platform.

### Data analysis

We performed a summative content analysis, using an inductive approach to derive the themes, categories, and subcategories from the data and reveal the barriers to educating elderly patients in the ward. All the responses were first entered into Microsoft Excel for initial sorting and keyword extraction. Using Excel to calculate the frequency of keywords made it possible for the research team to quantify recurring words and patterns in participants' open-ended responses. For example, the keywords "inadequate training," "time constraints," and "patient overload" were systematically listed and counted to establish baseline frequencies. After this qualitative overview, we imported the dataset into MAXQDA 2020 for qualitative coding and thematic analysis. MAX-QDA's iteration capabilities then facilitate the advanced aspects of the group coding process, enabling the team to (1) create codes by inductively deriving them (e.g., "cognitive decline," "communication barriers") directly from participants' descriptions to produce codes, (2) create categories (e.g., "memory issues") and subcategories (e.g., "short-term memory deficits") by aggregating similar codes into broader thematic categories (e.g., "cognitive impairments"), and (3) visualize those relationships via MAXQDA's mapping tools to identify connections between themes for further refinement of their analysis.

The next step was multiple rounds of focused reading by the first author to understand the data and inform the data labeling process (coding). These codes were subsequently compared to analyze their similarities and differences, helping extract and develop subcategories and categories. To confirm intercoder reliability, a second author worked independently to code portions of the data, discussed, and reached a consensus on the obtained codes with the first author. A third party with qualitative research experience addressed discrepancies in coding. In addition, peer briefing sessions were held regularly with the research team to study the coding practices, definitions, and examples.

Manifest (explicit, surface-level) and latent (implicit, underlying) content was an essential distinction within the coding process. Manifest content in visible keywords and phrases (e.g., "insufficient training"; "high workload"), we retrieved them with the Excel function to count their frequencies. Latent content identified themes and contextual meaning (e.g., systemic neglect of elderly care; cultural undervaluing of nurses' educational role). Iterative coding and memo writing, supported by MAX-QDA, allowed for deeper analysis. When one nurse said, "We have no time to educate elderly patients," the manifest code was "time constraints." At the same time, the latent interpretation highlighted systemic underresourcing and institutional preference for clinical work over education. Throughout the analysis, thematic saturation was assessed. We continued coding until no new categories or subcategories appeared in the data while analyzing approximately 210 keywords. All the keywords were reviewed to confirm saturation, but no new theme emerged; however, this review revealed an increase in the frequency of keywords.

# Rigor

The present study used credibility, transferability, dependability, and confirmability to increase trustworthiness [20]. Credibility was established through a comprehensive description of the research methods and context, along with a detailed account of the results, including quotations from most participants to support our findings and present our conclusions clearly and concisely, increasing transferability. Finally, confirmability, which relates to the extent to which the findings were neutral, was ensured by an experienced research team conducting qualitative study processes, peer review, and dialog about differences in coding until consensus was obtained among the researchers.

To minimize social desirability bias, the study ensured participant anonymity and voluntary participation through explicit assurances during the consent process, neutral phrasing of questions (e.g., open-ended prompts such as "What barriers hinder your ability to educate elderly patients?"), and the use of the third-party platform Porsline to create psychological distance between participants and the research team. Open-text responses permit candid feedback without predefined constraints.

# Quantitative results

The study was conducted on 744 nursing staff employed in the government multicenter educational hospitals of Hamadan Province. The mean participant age was 33 years (standard deviation = 24), and 78% (n = 11) and 22% (n = 3) were female and male, respectively. In terms of work experience, the mean duration of nursing was 12 years (± 32), with values ranging from 1 year to 28 years. Marital status: 68% were married, 24% were single, and 8% were divorced or widowed. The majority of participants held a bachelor's degree (82%), followed by participants who had an associate degree (4%), a master's degree (13%), and a small number with a doctoral degree (1%). With respect to employment type, 73% of the nurses were permanent, 12% were contractors, 7% were semipermanent, and 8% were designated (Tarhi). In previous education programs for elderly patients, 13% of nurses had attended an educational session, whereas 87% had not. Table 1 shows the number of study samples of working nurses in different teaching hospitals in Hamadan Province by department.

## **Qualitative results**

According to the main study question, the participants filled 3,943 keywords into the open box and 695 meaningful units into the additional free box (Table 2). Researchers extracted 482 relevant codes from keywords alongside 231 codes extracted from meaningful units. These codes ultimately generated six themes, ten categories, and twenty-six subcategories. Each theme contains multiple subcategories with enhanced code frequencies demonstrating participant keyword occurrence patterns. Table 2 has been adjusted to display selected quotations representing the full spectrum of gathered data because it merges the large study size with both size restrictions and recurring statements between participants. In contrast, all the quotations were analyzed, and their codes and frequencies were extracted. Research participants received confidentiality protection by excluding departmental information, educational backgrounds, and other personal characteristics from the table.

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Table 3 is arranged in order of decreasing frequency of codes within each theme. This finding highlights the significance of potential factors influencing the barriers to educating older patients from a nurse's perspective. Fig. 1 also visually presents the themes, main categories, and subcategories.

**Table 1** Number of working nurses participating in the study according to different wards of educational hospitals in Hamadan

 Province



# Distribution of nurses by workplace departments

# Theme 1: Environmental factors

This theme encompasses two significant subcategories, highlighting how organizational and structural barriers to healthcare impede the educational process.

# Main category 1: Staff training

This category points out that training staff is an important area with three subcategories. With 20.54% of the responses, the most relevant problem was insufficient personnel training, suggesting that we do not have enough programs focused on training nurses in the education of elderly individuals. In addition, 10.39% of the respondents reported no educational programs for geriatric patients, revealing a lack of need for focused education specifically targeted at elderly individuals. The most obscure but relevant subcategory was a lack of feedback mechanisms to monitor improvements, cited in 4.23% of the responses, which stressed the importance of evaluating systems to develop successful education strategies. Both auxiliary and nursing staff training need improvement, but the area that requires more focused attention is training specifically in geriatric care, at least for nursing staff.

**Subcategory 1.1: Insufficient staff training (20.54% frequency)** Insufficient training was the most frequently cited barrier, highlighting the need for specialized programs to improve nurses' competencies. Keywords included "inadequate training," "skill enhancement," "educational preparation," and "practical experience." P67 noted, "Our current training programs do not adequately prepare us for the unique educational needs of elderly patients," and "Workshops and simulations focused on elderly care could significantly enhance our teaching skills."

**Subcategory 1.2: Lack of education programs for elderly patients (10.39% frequency)** This subcategory highlights a critical gap in the availability of tailored programs that address the educational needs of elderly patients. Keywords include "customized programs," "education for elderly individuals," "program development," and "learning gaps". P32 stated, "*The lack of structured* 

Table 2	Demographic overview of participants with selected
complete	e quotations (meaning unite)

Participant ID	Age (Years)	Work Experience (Years)
P1	38	13
P4	42	18
P10	28	5
P15	45	12
P21	28	4
P22	35	8
P23	50	20
P32	38	13
P41	40	15
P43	48	22
P56	29	3
P67	33	1
P85	37	10
P88	52	25
P108	44	17
P112	31	7
P143	33	8
P201	39	14
P211	46	19
P311	34	9
P327	55	23
P542	41	16
P676	47	21
P771	36	11

education programs makes it challenging to meet the unique health literacy needs of older adults."

**Subcategory 1.3: Lack of feedback mechanisms (4.23% frequency)** Feedback mechanisms are the least reported issue, yet they are critical for refining educational approaches. Keywords included "feedback systems," "evaluation methods," and "continuous improvement." P4 noted, "We rarely receive constructive feedback from patients, which limits our ability to evaluate and enhance our teaching methods."

# Main category 2: Hospital setting

The barriers surrounding this category present a significant obstacle, underscoring the systemic limitations that prevent nurses from offering adequate education. Findings from the study regarding the hospital setting category reveal significant systemic barriers that restrict nurses' ability to provide sufficient education for elderly patients. Notably, 22.59% of the respondents reported the nurse-to-patient ratio as the most pressing concern. This imbalance significantly impacts the time and resources required for personalized patient education. Furthermore, 10.88% of the participants reported that limited access to printed materials was significantly hindered, suggesting a lack of patient-friendly educational resources for older adults. These findings underscore the systemic barriers in hospital environments regarding successful patient education, particularly for geriatric patients. Such systemic challenges can detract from the quality and effectiveness of hospital education for older patients.

**Subcategory 2.1: Inappropriateness of the nurse-topatient ratio (22.59% frequency)** The most significant barrier reported is an imbalanced nurse-to-patient ratio, which severely hinders patient education. Keywords include "workload," "patient load," "time constraints," and "education time." P143 stated, "*Managing large numbers of patients limits the time available for personalized education,*" and "*Heavy workloads prevent us from addressing the specific needs of elderly patients.*"

**Subcategory 2.2: Limited access to printed materials** (10.88% frequency) The lack of patient-friendly materials was also identified as a barrier to effective education. Keywords included "educational materials," "printed resources," and "accessibility." P43 commented, "Elderly patients benefit from accessible and easy-to-read materials, but these are often unavailable in our hospital setting."

### Theme 2: Cognitive impairments and cognitive impairments

This theme significantly impacts the comprehension and retention of health information by elderly patients, creating specific challenges for nurses.

#### Main category 3: Memory issues

This category indicates considerable cognitive-related barriers and suggests that memory-related barriers can obstruct effective health education outcomes. In 18.31% of patients, the most frequent problem was short-term memory deficits. The ability to recall previously learned health information was the second most common problem, occurring in 15.74% of the cases. These memory barriers require specialized techniques in teaching, such as repetition strategies and educational aids. The findings highlight the need to adapt educational approaches to the cognitive limitations of older adults and the importance of healthcare providers developing and applying memory-supportive educational methodologies in geriatric care settings.

**Subcategory 3.1: Short-term memory deficits (18.31% frequency)** The most frequently reported cognitive barrier, short-term memory deficits, necessitates repetition and customized teaching strategies. Keywords included "memory barriers," "repetition techniques," "cognitive decline," and "teaching aids." P21 noted, "Elderly patients often forget health instructions quickly, requiring repeated explanations to ensure "retention.

Theme	Main Category	Subcategory	Frequency of code (f)	% Of total key- words (% of 3943)
Environmental factors (Total frequency, 2707)	Staff training (Frequency, 1387)	Insufficient staff training	810	20.54%
		Lack of education programs for elderly patients	410	10.39%
		Lack of feedback mechanisms	167	4.23%
	Hospital setting (Frequency, 1320)	Inappropriateness of the nurse-patient ratio	891	22.59%
		Limited access to printed materials or digital tools tailored for elderly patients	429	10.88%
Cognitive impairments (Total frequency, 1962)	Memory issues (Frequency, 1343)	Short-term memory deficits	722	18.31%
		Difficulty recalling previously learned health information	621	15.74%
	Attention deficits (Frequency, 619)	Barriers to focusing during educational sessions due to distractions	410	10.39%
		Inability to process complex information quickly	209	5.30%
Communication and sensory barriers (Total frequency, 1799)	Language and com- munication difficulties (Frequency, 1067)	Speech disorders	691	17.52%
		Misinterpretation of medical terminology or instructions	378	9.58%
	Sensory impairments (Frequency, 721)	Hearing loss	420	10.65%
		Visual impairments	301	7.63%
Social support	Family involvement (Frequency, 709)	Lack of family involvement in the education process	411	10.42%
systems		Lack of involvement in care plans	298	7.55%
<b>(</b> Total frequency, 1417)	Peer support (Frequency, 708)	Absence of peer support groups that can share learning experiences	389	10.09%
		Lack of peer-led educational workshops	221	5.60%
		Lack of resource-sharing networks	98	2.48%
Physical limitations (Total frequency,	Mobility issues (Frequency, 459)	Difficulty accessing educational materials or sessions due to physical constraints	250	6.34%
		Fatigue or exhaustion	209	5.30%
811)	Pain and discomfort (Frequency, 352)	Chronic pain that distracts from the learning process	244	6.18%
		Acute discomfort during hospital stays	108	2.73%
Psychological barriers (Total frequency 369)	Anxiety and depression	Anxiety about health conditions	188	4.76%
	(Frequency, 278)	Depression and disengagement from educational opportunities	90	2.28%
	Lack of motivation (Frequency, 91)	Perceived irrelevance of education to their current health status	59	1.49%
		Feelings of helplessness regarding their ability to manage their health	32	0.81%

Table 3 Themes, categories, and subcategories of barriers to educating elderly patients from the nurses' perspective

**Subcategory 3.2: Difficulty recalling previously learned health information (15.74% frequency)** Recalling previously learned information further complicates the educational process. The key terms included "memory retention," "information retrieval," and "application of health knowledge." P201 stated, "Patients often have difficulty recalling critical health information, which necessitates regular reinforcement strategies to ensure effective learning and retention."

# Main category 4: Attention deficits

These patients with attention deficits may face significant obstacles to effective educational interventions. The research shows that attention-related issues—although not the most commonly cited barrier—are key to derailing educational initiatives. According to the data, 10.39% of the people said that focusing on the academic system was the foremost challenge, as they might be distracted. Moreover, 5.30% of the participants noted that elderly patients fail to process complex information quickly. The results demonstrate that attention deficits in elderly people are complex and involve factors at the external level that prevent attention excitement and factors at the internal cognitive level that affect information processing. The results underscore the need for healthcare providers to consider these barriers when designing and implementing educational interventions for older patients.

Subcategory 4.1: Barriers in focusing during educational sessions due to distractions (10.39% frequency) External and internal distractions frequently disrupt the focus of older patients during educational sessions. Keywords included "attention span," "distractions," "concentration issues," and "engagement techniques." P56 noted, "Many elderly patients struggle to concentrate during sessions owing to environmental distractions."

**Subcategory 4.2: Inability to process complex information quickly (5.30% frequency)** Elderly patients often struggle with understanding complex or lengthy information. Keywords include "simplified instructions," "infor-



Figure 1 Visual presentation of themes and main categories in terms of frequency

mation processing," and "clarity." P10 said, "We adapt our teaching by breaking complex concepts into simpler steps to ensure comprehension."

#### Theme 3: Communication and sensory barriers

In this context, language, communication difficulties, and sensory barriers were identified as significant factors hindering nurses' ability to educate older patients effectively.

# Main category 5: Language and communication difficulties

This category accounts for a large proportion of barriers, including issues related to speech and the comprehension of medical information. This finding indicates that the most crucial and relatively most challenging obstacle to address is linked to older patients' problems with language and communication. Speech disorders were the most frequently encountered problem, recorded in 17.52% of the cases, reflecting the common problem of verbal engagement with older patients.

Another 9.58% of patients presented misinterpretations of medical terminology or instructions, highlighting further difficulty in communicating health-related information with these patients. These findings underscore the diverse barriers to communication present in geriatric populations, from physical issues such as generating speech to cognitive barriers such as encoding, decoding, and processing medical information. Such communication barriers can significantly limit the effectiveness of even the best health education interventions for older patients.

**Subcategory 5.1: Speech disorders (17.52% frequency)** Speech disorders were the most commonly reported barrier in this category, complicating the delivery of health education. Keywords included "speech difficulties," "communication barriers," and "language barriers. P8 noted, "Speech impairments often make it difficult to communicate important health information to older patients.

**Subcategory 5.2: Misinterpretation of medical terminology or instructions (9.58% frequency)** Patients' misunderstanding of medical terminology and instructions hinders their ability to follow health advice. Keywords included "medical terminology," "clarity of instructions," and "barriers to comprehension." P112 noted, "We need to simplify medical language to ensure that older patients fully understand their care instructions."

#### Main category 6: Sensory impairments

Simultaneously, sensory limitations make patient education difficult to achieve effectively. The study also revealed that sensory impairments have an overall detrimental influence on the educational achievement of the elderly population. Two subcategories were defined under this issue as notable barriers. Hearing loss was the most common sensory issue in 10.65% of the patients, followed by visual impairment in 7.63%. These sensory challenges impede communication and interaction with educational materials, emphasizing the importance of flexible teaching techniques and materials. The results highlight the relative need to accommodate sensory deficiencies when developing and implementing strategies regarding education for elderly individuals.

Individuals, as such deficits, can intrinsically affect their apprehension and retention of health information.

**Subcategory 6.1: Hearing loss (10.65% frequency)** Hearing loss is the most commonly reported sensory impairment affecting patients' ability to engage in verbal communication. Keywords included "hearing barriers," "auditory barriers," and "communication aids." P22 stated, *"Hearing impairments require us to adapt our communication methods, such as speaking slowly and clearly.*"

**Subcategory 6.2: Visual impairments (7.63% frequency)** Visual impairments hinder older patients from engaging with printed materials or visual aids. Key terms include "visual impairments," "accessible materials," and "teaching aids." P88 stated, *"Educational materials must be designed with large fonts and clear images to appeal to patients with low vision.*"

### Theme 4: Social support systems

The current theme concerns the presence or absence of adequate social support systems, which can impact the effectiveness of health education for elderly patients.

## Main category 7: Family involvement

This category revealed that family participation has a marked effect on the learning experience of elderly individuals. The two main subcategories of this category were identified in the research. The first subcategory mentioned by 10.42% of the subjects indicated that lacking a family presence in the educational process is a significant obstacle to learning. The following subcategory, reported by 7.55% of the sample, covered family members' limited contributions to care planning. These

findings emphasize the need for family engagement in education and care planning for older patients. Engaging with the family may help older adults in healthcare settings make more sense of their healthcare and adhere to treatment regimens, resulting in improved health outcomes.

Subcategory 7.1: Lack of family involvement in the education process (10.42% frequency) The most frequently reported barrier in this category was a lack of family involvement in educational efforts. Keywords include "family support," "caregiver involvement," and "educational engagement." P676 noted, "When family members are involved, elderly patients are more likely to follow health advice and treatment plans."

**Subcategory 7.2: Lack of involvement in care plans** (7.55% **frequency**) The limited involvement of family members in care planning diminishes the effectiveness of patient education. Key terms include "care planning," "family engagement," and "shared responsibility." P327 reported, "Working with family members improves elderly patients' understanding of and adherence to care plans."

#### Main category 8: Peer support

Peer support revealed notable gaps in the use of peerled resources to enhance health education for elderly patients. The research identified three core issues in this area. The 'greatest challenge', chosen by 10.09% of the participants, was the lack of peer support groups that enable shared learning experiences. This was followed by insufficient education from peers, reported by 5.60% of the respondents. Although less frequently mentioned, the feeling of helplessness among older patients in managing their health was still the most cited concern, with 0.81% of respondents emphasizing it as a top priority. These findings highlight the untapped potential of peer-based learning and support systems in assisting seniors' health education, signaling an urgent need to establish more informal peer-led programs in the healthcare setting.

**Subcategory 8.1:** Absence of peer support groups that share learning experiences (10.09% frequency) The most frequently reported barrier in this category — the absence of peer support groups — limits opportunities for collective learning. Keywords include "peer support," "group learning," and "shared experiences." P771 noted, *"Elderly patients often benefit from peer-led discussions where they can learn from the experiences of others.*"

Subcategory 8.2: Feelings of helplessness regarding their ability to manage their health (0.81% frequency) Helplessness is the least reported psychological barrier, yet it has profound implications. Key terms include "helplessness," "self-efficacy," and "empowerment." P23 noted, "Elderly patients who feel helpless often resist learning, requiring tailored motivational strategies."

**Subcategory 8.2: Lack of peer-led educational workshops (5.60% frequency)** Peer-led educational workshops are an underutilized approach to enhancing health education. The key phrases included "peer workshops," "educational programs," and "knowledge exchange." P57 noted, "Workshops led by peers offer relatable insights and promote active participation among elderly patients."

# Theme 5: Physical limitations

Physical limitations pose another significant challenge in this context, limiting the ability of elderly patients to engage in educational activities.

# Main category 9: Mobility issues

In this category, mobility issues heavily impact the dissemination of educational resources to elderly patients. A total of 11.64% of the barriers reported were related to physical barriers that limited older adults' engagement in educational programs. The results show that the greatest potential issue is the physical constraints, which constitute 6.34% of the reported problems. (As such, they greatly limit patients' access to educational learning material and participation in learning sessions.) In addition, fatigue and exhaustion were reported in 5.30% of the cases, further worsening the situation by reducing elderly patients' ability to interact with and absorb learning. These findings highlight the need for healthcare providers to recognize and address mobility-related obstacles in designing educational programs for older adults.

**Subcategory 9.1: Difficulty accessing educational materials or sessions due to physical constraints (6.34% frequency)** The most commonly reported issue in this category is physical constraints, which hinder elderly patients from attending sessions or accessing materials. Keywords include "mobility barriers," "accessibility issues," and "physical barriers." P41 noted, "Mobility limitations often keep patients from participating in educational sessions, necessitating alternative delivery methods."

**Subcategory 9.2: Fatigue or exhaustion (5.30% frequency)** Fatigue decreases older patients' ability to concentrate during learning sessions. Keywords included "fatigue," "energy barriers," and "engagement barriers." Nurses noted, "Fatigue is a common issue that impacts older patients' focus on health education. P108 stated, "Exhaustion in elderly patients for various reasons affects the effectiveness of education in the ward."

# Main category 10: Pain and discomfort

The learning capabilities of patients are blocked by additional barriers related to pain issues in this category. The assessment revealed that pain-related complications malfunctioned during educational procedures in 8.91% of the participants across both subcategories. Chronic pain emerged as the primary problem that patients faced, according to reports, accounting for 6.18% of all issues. Patients face persistent discomfort that hinders their ability to receive and retain educational information. Hospital settings particularly require attention to acute pain since it occurs moderately frequently, at a rate of 2.73%. Research findings confirm that effective pain management and patient comfort create a suitable environment for elderly patients to learn in.

Subcategory 10.1: Chronic pain that distracts from the learning process (6.18% frequency) Chronic pain emerged as this category's most frequently reported issue, significantly shaping the focus. Keywords included "chronic pain," "inconvenience," and "learning barriers." P211 emphasized, "Pain management is crucial to ensure patients can engage with educational content."

**Subcategory 10.2:** Acute discomfort during hospital stays (2.73% frequency) Although less common, acute discomfort presents a temporary obstacle to effective learning. The important phrases included "acute discomfort," "hospital barriers," and "short-term barriers." P542 stated that "providing comfort during hospital stays is crucial for effective patient education."

# Theme 6: Psychological barriers

In this context, psychological barriers such as anxiety, depression, and a lack of motivation were also identified as significant barriers to patient education.

# Main category 11: Anxiety and depression

The present category demonstrates that depression and anxiety create substantial barriers that prevent elderly patients from engaging in health education. The group categorized as "anxiety and depression" emerged as the main obstacle, accounting for 7.04% of the recorded responses. The inability to address health concerns emerged as the chief stressor mentioned by patients since it appeared as a response 4.76% of the time. Patient anxiety makes it difficult for nurses to focus on teaching patients educational material. The combination of depression and educational withdrawal was challenging for 2.28% of the participants. Patients experiencing these mental health problems lose their motivation for health education activities because psychological health directly affects educational participation in elderly care settings. **Subcategory 11.1: Anxiety about health conditions** (4.76% frequency) Anxiety is the most commonly reported psychological barrier that impacts focus and engagement. Keywords include "health anxiety," "mental distress," and "emotional barriers." P85 reported that "Patients often feel overwhelmed by anxiety regarding their conditions, which hampers their ability to absorb information."

**Subcategory 11.2: Depression and disengagement from educational opportunities (2.28% frequency)** Depression reduces patients' motivation to participate in educational activities. Key terms include "depression," "disengagement," and "loss of motivation." P311 emphasized, "Addressing depression is crucial for encouraging participation in health education."

# Main category 12: Lack of motivation

The absence of motivation presents itself as a main obstacle that reduces the effectiveness of health education for elderly patients. The primary group containing 2.3% of reported barriers comprises two distinct subgroups. Most patients believe that their current health status does not relate to educational information, thus constituting the most prevalent barrier at 1.49%. This section describes how some patients detect discrepancies between medical providers' healthcare instructions and urgent health matters. An assessment of helplessness in health management appears two times less frequently, with a 0.81% frequency rate. Elderly patients experience psychological obstacles that reduce their ability to join health education programs. The data show that what motivates people affects their success rate when they are participating in health education programs for older adults. The mentioned barriers appear less often than the barriers detected during the research.

**Subcategory 12.1: Perceived irrelevance of education to current health status (1.49% frequency)** Patients often see education as unrelated to their immediate needs. Key terms include "perceived irrelevance," "educational value," and "health priorities." P141 commented, "*Patients sometimes do not recognize how education relates to their current health goals.* ".

Subcategory 12.2: Feelings of helplessness regarding their ability to manage their health (0.81% frequency) The last reported subcategory, feelings of helplessness, indicates a lack of self-efficacy among elderly patients. Keywords include "helplessness," "self-efficacy," "barriers to empowerment," and "personal health management." P15 noted, "Patients who feel helpless often resist health education, believing it won't make a difference."

# Discussion

This study employed a qualitative approach to identify and analyze nurses' barriers to educating elderly patients. The findings revealed numerous issues in this area, primarily related to environmental factors, cognitive disorders, communication and sensory barriers, social support systems, physical limitations, and psychosocial barriers.

The most significant findings of this study pertain to the lack of training and insufficient resources available to nurses for educating elderly patients. This aligns with previous studies emphasizing the need for adequate training of healthcare personnel to provide services to older adults [21]. Therefore, inadequate attention to sufficient training for nurses, especially in elder care, and the absence of suitable educational programs constitute major weaknesses that should be addressed in health policies and nursing education. Suggestions such as developing specialized courses and workshops focused on elder care content can effectively address these barriers.

The study participants identified restricted access to printed educational materials as an essential environmental barrier to education. A qualitative research study by Abbasi et al. revealed that unsuitable educational areas and insufficient hospital facilities are barriers to teaching patients in Iran [22]. According to Ghorbani et al.'s research concerning nursing students' and nurses' views on patient education facilitators and obstacles, insufficient time and unavailability of educational resources and heavy workloads have emerged as significant nursing barriers to patient education [23]. In addition to other barriers, an insufficient nurse-to-patient ratio leads to heavy workloads and time constraints, which nurses in our study named their main issue in educating patients.

Other studies support these findings. For example, according to the results of another qualitative study in Iran, barriers such as ineffective communication, high workload, and physician indifference toward engaging with patients were reported as factors affecting staff in providing safe care [24]. Another study reported that critically ill patients, nurse workload, department and room overcrowding, noise, and poor ventilation were environmental factors affecting patient-nurse communication [25, 26]. These findings underscore the importance of paying more attention to patient education as an integral part of care.

Educational difficulties are intensified by cognitive impairments since systemic barriers from staffing ratios and resource limitations already exist. Older patients' short-term memory deficits and attention difficulties require teacher-developed educational strategies that adapt to their normal cognitive processes. Research participants confirmed that typical cognitive issues in older adults, which cause memory deterioration and reduced attention capacity, make learning and remembering health information challenging. Research evidence matches findings that report that older patients' physiological weakening and cognitive deficiencies, alongside educational deficits, prevent healthcare institutions from developing organizational health literacy [21]. Repeatbased training and practice techniques enable elderly individuals to store and recall information. Applying simple educational tools that are easy to understand is beneficial for the learning process, especially when dealing with people who show signs of short-term memory impairment.

Health education effectiveness is limited when patients face sensory disabilities together with cognitive impairments. The interaction barriers of hearing loss, visual limitations, and language processing problems make it essential for nurses to use simplified language and visual support during communication. Communication and sensory barriers present significant barriers that directly damage educational outputs related to patient compliance and self-management [27]. For example, elderly patients with hearing loss and visual impairments become unable to follow verbal instructions or use written materials, leading to incorrect interpretations of medication protocols and posttreatment plans. Nursing staff observed occasions when patients misinterpreted medication instructions by confusing "two times daily" to mean "twelve times daily," thereby leading patients to take the wrong dosages, which produced preventable health complications. The research of Macaden et al. [28] reported that sensory deficiencies play a significant role in generating medication errors. Patients who experience speech disorders and language barriers prevent nurses from confirming their understanding through two-way communication [29]. This aligns with the findings of Reed et al. [29], who showed that untreated hearing loss leads to poorer medical recommendation compliance, higher healthcare expenses, and an increased possibility of hospital returns.

The target audience's incorrect interpretation of medical words weakened their trust in healthcare providers and their willingness to follow medical guidance. For example, the misinterpretation of medical terminology frequently uses the word "fluid restriction," yet patients understand this to mean complete water avoidance, leading to dehydration hazards. Additionally, sensory and communication barriers create alignment issues that prevent knowledge exchange and reduce health literacy, thus creating continuous loops of reduced self-efficacy and unnecessary hospital returns, which researchers have already established to occur in patients with low health literacy [30, 31].

In light of these findings, healthcare professionals should actively engage in patient education, ensuring that patients feel seen, heard, and respected—an essential factor in building trust [32]. Nurses in Egypt reported that elderly patients and their families did not cooperate with clinical education and that individual factors, medical procedures, and elderly characteristics were key challenges [33]. According to research, receiving support combined with information from community members matters explicitly to older adults, particularly those of different ethnicities and cultural groups [33]. According to research, receiving support combined with information from community members matters explicitly to older adults, particularly those of different ethnicities and cultural groups [34].

In addition to individual patient barriers, the lack of robust social support systems—primarily family and peer involvement—worsens educational challenges. Culturally, in Iran, care is given by family, but institutional policies do not always build on this strength, thus creating a gap between expectations and practices. Our examination revealed that family members not being on the same page and insufficient knowledge about the educational needs of elderly patients were also important attributions of practical education. Thus, it is suggested that specialized educational programs for families be designed to improve their ability to care for and support older adults. Such programs may involve general education about the special needs of the elderly and ways to ensure that those interactions are primarily positive.

Nurses explained that the absence of family care should be understood from an Iranian cultural perspective, as caring for family members remains both a social standard and an ethical duty. Nurses have identified barriers such as limited access to care plans that highlight widespread failure in the operational use of cultural resources. Most Iranian research subjects come from prominent families who actively perform caregiving duties. Hospital policies blocked the participation of healthcare providers, who could teach the participants even though these measures did not consider the institution's cultural values. Research shows that established programs drive family interaction in large individualistic nations such as the United States [37], but Iranian families customarily fulfill their familial duties in unauthorized ways. The healthcare system needs person-centered strategies, including involving family members in patient care teams or developing custom-made health education for intergenerational family dynamics. Healthcare systems have become more effective by choosing interventions that match Iran's collective communication style, which converts family constraints into valuable assets for healthcare delivery.

Psychological factors, including anxiety, together with decreased motivation, make physical and social barriers worse. These psychological issues disrupt patient involvement while demonstrating the need for complete care strategies that target emotional and educational requirements. In contrast, stress management practices and coping skills contribute positively to mental health, motivation, and social participation [35]. Our research participants indicated that psychological obstacles constitute significant obstacles that hinder the delivery of patient education to elderly people. A systematic review of qualitative studies confirmed that mood and anxiety disorders, together with multiple health problems, prevent patients from managing their health independently [36]. The research highlighted the importance of patient motivation in educational programs. The evidence demonstrates that seniors lacking proper motivation struggle to master new healthcare knowledge. Specifically, fear of illness, anxiety, and feelings of uselessness act as deterrents in their learning process. Elzeni et al. conducted a study on nurse-elderly patient communication barriers and reported that 85.5% [25] of nursing staff considered depression, among other psychological issues, to block effective educational outcomes. It is necessary to implement specific intervention approaches to handle psychological barriers, including both anxiety and lack of motivation. Motivational interviewing (MI), as a collaborative communication technique, helps minimize resistance by tailoring educational targets toward patients' essential values and preferences. By using MI training methods, including reflective listening and autonomy affirmation, nurses can assist elderly patients in transforming helplessness into practice-oriented self-care skills [37]. Educational initiatives produced according to sensory and cognitive needs improve patient involvement in learning. Combining repeated instructions and visible teaching aids such as large-print diagrams helps patients develop better retention abilities [38]. Additionally, employee involvement in care planning allows patients to understand concepts better and receive emotional support. Implementing suitable strategies in Iran's healthcare sector through staff training programs and resource funding can create a link between patient needs and educational delivery, promoting health literacy and patient adherence.

During a qualitative study, students in their nursing program expressed their distrust of patients, whereas older patients selected experienced nurses for their education [23]. Healthcare barriers restrict patients from becoming involved with their treatments and educational materials. Educational programs must include strategies that enhance motivational levels and promote constructive mental well-being in elderly patients during their design phase.

The combined work of geriatric specialists and elderly people has not prevented the continued social marginalization of older adults, who face physical, social and economic dependencies [39]. Healthcare systems occasionally provide inadequate care to the elderly population. Medical trainees and students displayed negative attitudes toward elderly patients in a qualitative study by Higashi et al. because they perceived achieving healthcare goals as challenging when treatment goals dominated health systems. The participants who displayed unfavorable views about this demographic thought that their multiple complex medical conditions could not possibly reach a permanent solution [40]. The research results prove that healthcare providers must work to adjust their views about this underprivileged group.

The research used qualitative content analysis methods to analyze barriers according to nurses' perceptions. Veteran nurses delivered extensive factual data that medical facilities should utilize to create successful educational programs. The research findings should be cautiously evaluated due to the multiple weaknesses identified during this study. This exclusive focus on nurses as the sole group of study participants potentially created research findings that might contrast with opinions reported by elderly patients and their family members. The use of a particular provincial location for the research prevents the findings from being applicable outside this area.

#### Practical implications and recommendations

This research confirms that educating elderly patients within hospital environments requires better-quality delivery methods. Nurses can help older patients establish educational programs focused on their health requirements. The appointment of accessible educational resources for elderly patients and additional interaction opportunities between nurses and patients will increase the effectiveness of educational programs. Further research should explore barriers to healthcare education for selected health condition patients across various healthcare facilities and evaluate methods and approaches that fit patient requirements.

# Conclusions

This research addresses an essential knowledge gap that demonstrates that staff training and nurse-to-patient ratios rank as the primary environmental obstacles to elderly patient education in Iran from the nursing perspective. Our research combines different methodologies for analyzing Iranian cultural family care practices while examining institutional hospital policies that generate practical recommendations. This study emphasizes the necessity of systemic changes because healthcare facilities need to solve staffing shortages. At the same time, policymakers should require family-based care training and geriatric education for staff members, and healthcare teams need to create simple educational resources. This study uses cultural, professional, and institutional

# integration to improve care equity for elderly patients in modern aging communities.

#### Abbreviations

COREQ Consolidated Criteria for Reporting Qualitative Research

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#### Author contributions

AA and AKh wrote the main text of the manuscript. HF was involved in quality control and supervised the writing of the paper. AKh entered data into Excel and MAXQDA to calculate the number and frequency of codes. MMV prepared the tables and compiled the results of the report. AS and Akh took part in analyzing and interpreting the results. Finally, all the authors reviewed the manuscript.

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#### Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

#### Declarations

#### Ethics approval and consent to participate

This study was approved by the Ethics Committee of Hamadan University of Medical Sciences (IR.UMSHA.REC.1403.601) and was conducted in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments [41]. Before participating in the survey, the participants were informed about the study's objectives and methods, the confidentiality of their data, and their right to withdraw at any time without consequence. Each participant provided written informed consent. All study procedures adhered to the applicable guidelines and regulations.

#### **Consent for publication**

The participants provided consent for their data to be published.

#### **Competing interests**

The authors declare no competing interests.

#### Author details

<sup>1</sup>Department of Prehospital Emergency Medicine, Asadabad School of Medical Sciences, Asadabad, Iran

<sup>2</sup>Student Research Committee, Semnan University of Medical Sciences, Semnan, Iran

<sup>3</sup>Chronic Diseases (Home Care) Research Center, Institute of Cancer, Hamadan University of Medical Sciences, Hamadan 6516778724, Iran <sup>4</sup>Health in Disasters and Emergencies Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

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