Original Article

An e-Delphi Study to Identify Core Competencies for Comprehensive Geriatric Assessment in Primary Healthcare

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Abstract
Introduction: Healthcare systems face major issues as a result of the world's population aging at an accelerated rate, especially in primary care settings. It is generally accepted that the Comprehensive Geriatric Assessment (CGA) is a useful strategy for handling the complicated care requirements of senior citizens. Nevertheless, there is still a lack of a comprehensive framework of fundamental nursing competences needed for CGA adoption to be successful.
Aim: The purpose of this study was to rank the essential skills that nurses must possess in order to carry out CGA in primary care.
Materials and Methods: A three-round e-Delphi study was conducted between August and November 2024 with a panel of 14 experts in gerontological nursing from six European countries. In the first-round experts was invited to reviewed and refined 34 competencies derived from literature. In subsequent rounds, they rated and prioritized each competence. Consensus was defined as ≥80% agreement among participants.

Results: The final framework comprised 34 core competencies in seven domains: Clinical assessment and diagnostic competencies, care planning and coordination, communication, interprofessional collaboration, leadership, evidence-based practice and ethics. Agreement levels ranged from 92.8 to 100 % indicating strong consensus across the experts. A post-study ethical competency suggested by the alliance was also included, increasing the total number of competencies to 35.
Conclusions: The results will pave the way in nursing universities in Europe in creating specialized curricula for CGA in primary care. Furthermore, the competency framework resulting from the study can be used for the formulation of national guidelines by health systems for primary care, strengthening the role of nurses and providing personalized care for older adults.

Keywords: Comprehensive Geriatric Assessment, e-Delphi, Gerontological Nursing, Nursing Competencies, Primary health care

Introduction

The global population is ageing, and healthcare systems worldwide are called upon to manage a very important challenge. According to the World Health Organization, by 2050 22 % of the world's population will be over 60 years old. This development is expected to lead the scientific community to implement major reforms in public health and social care of the elderly (World Health Organaization,2024).

The ageing process is often accompanied by the presence of multiple health conditions, the use of multiple medications, and varying levels of support needs. in performing basic daily activities and the emergence of geriatric syndromes, resulting in the urgent need for the implementation of integrated care (Hoogendijk et al., 2019; Nicholson et al., 2024).

CGA is an appropriate approach to managing the complex issues of older adults through an organized, interdisciplinary process of evaluation, diagnosis and intervention. CGA aims to identify the biological, psychosocial and functional needs of older adults, providing the basis for the formulation of individualized care plans that enhance their health and quality of life (Elsawy & Higgins,2011; Kay et al., 2017).

It has been proven that CGA can improve diagnoses related to the health status of the geriatric population, the design of holistic care plans required for their care and enhance the quality of existing health care services. The implementation of CGA is associated with an increased likelihood of older adult maintaining their independence at home after a hospitalization as well as a remarkable reduction in the risk of admission to a residential care facility (Ellis et al., 2017; Nicholson et al., 2024).

The systematic review by Briggs et., al (2022) examined the effect of CGA on vulnerable older adult living in the community, the results concluded that the use of CGA does not reduce the rates of mortality and the number of seniors who will require admission to long-term care facilities (Briggs et al., 2022).

The study by Piloto et., al (2017) notes that CGA when applied both in clinical healthcare settings such as hospitals and in home care yields significant benefits leading to better management of disability, cognitive decline and mortality in the elderly older? (Piloto et., al 2017). Meanwhile Lau, L.K., et., al (2025) report that the time required to perform CGA is a factor limiting its applicability in primary healthcare services (Lau et., al 2025)

Primary healthcare nurses participate both in conducting and implementing care plans developed based on CGA findings, coordinating the multidisciplinary team and ensuring continuity of care in the community. The study by Lyndon et., al (2022) focused on the development of nurse-led CGA interventions in primary care (Lyndon et., al 2022).

However, there is no absolute consensus on the skills required to conduct CGA, which leads to variations in the quality of care provided and highlighting the need to define these skills through international consensus methods such as e-Delphi studies (Niederberger and Spranger, 2020).

Background and motivation

The performance of CGA by nurses requires a specific set of specialized skills and knowledge. These include knowledge of gerontological and geriatric care, chronic disease management, ongoing collaboration with the interdisciplinary care teams as well as ensuring the social well-being of the aged individuals older adults? (Spirgiene and Brent, 2018).

The American Geriatrics Society (AGS) in 2021 unveiled the updated Minimum Competencies in Geriatrics for Medical Students with a strong emphasis on the '5Ms' of geriatric care in areas such as <<Mind, Mobility Medications, Multicomplexity and Matters Most>>. According to this competency framework, care of the older adults focuses on cognitive and mental health, assessment of functional status and mobility, management of polypharmacy, management of comorbidities and frailty and the development of individualized care plans that prioritize their expressed needs and preferences (ADGAP,2021).

The study by Boult et., al (2013) based on the Guided Care model, showed that nurse-led geriatric care which includes the provision of eight key services to older people/adult? such as <<conducting a full clinical assessment, creating an individualized care plan, monitoring older people to prevent complications, coordinating multidisciplinary care, care for their safe transfer between health services, promotion of self-care, support for carers and referral to primary health care facilities>> is superior to standard care and leads to greater satisfaction of seniors with the healthcare they receive. Additionally, this study revealed a significant reduction (by 29%) in the need for home care services within the intervention group (Boult et., al 2013).

Safari et., al (2023) highlights that Advanced Nurse Practitioners (ANPs) have a leading role in implementing CGA in primary health care settings. ANPs can successfully identify and manage frailty in the community through the personalized interventions they perform, thereby improving older people's functionality and concurrently contributing to reducing the utilization of further healthcare services (Safari, Jackson and Boole, 2023).

In contrast, the results of the randomized study by Suijker et., al (2016) which included a total of 2.283 older adults (1.209 in the intervention group receiving geriatric assessment plus targeted interventions by trained community nurses and 1.074 in the control group) reported that after 12 months of follow-up there were no statistically significant differences between the two groups in the occurrence of dependencies in the Katz scale of basic activities of daily living (ADL), in older people's self-reported quality of life, hospitalizations and mortality. The study concluded that the provision of individualized interventions delivered by community nurses did not improve outcomes compared to usual care in older adults at high risk of functional decline (Suijker et., al 2016).

Similarly, findings were also obtained in the randomized study by Orcel et., al (2024) which had three intervention arms. The first arm involved the performance of CGA in the community under nursing guidance, in the second arm CGA was performed by a general practitioner, while the third arm received standard care and follow-up. According to the results, interventions based on nursing assessment did not reduce mortality, unplanned hospital admissions or admissions to chronic care centers compared to the group receiving standard follow-up. In contrast, implementation of CGA by general practitioners significantly reduced the number of unplanned hospital admissions. However, there were no statistically significant differences among the three arms in terms of the additional parameters evaluated, including improvements in functional status, management of polypharmacy and enhancement of the quality of life among the community-dwelling older adults (Orcel et., al 2024).

Shen et., al (2024) examined the level of knowledge regarding the CGA process and educational needs among physicians and nurses. The findings of the study indicated a general lack of knowledge about CGA with the highest percentages recorded among nursing staff. Specifically, 52% of nurses reported lacking specialized knowledge and skills in geriatric assessment areas which hinder the conduct and implementation of CGA in clinical practice (Shen et., al 2024).

The above research findings highlight the need to establish an agreed competency framework outlining the skills required for primary care nurses (PCN) to effectively carry out CGA. Through the development of robust competencies, the basis is laid for the implementation of educational programs in which nurses will be able to access specialist knowledge that they can incorporate into their clinical practice.

Aim: The present e-Delphi study aims to fill this identified gap through achieving broad consensus among European experts in gerontological nursing. Specifically, this study sought to identify and prioritize the key skills and competencies required by nurses for the effective performance of Comprehensive Geriatric Assessment in primary health care, through an e-Delphi consensus study conducted as part of the project "Can You See the Big Picture? (Erasmus+ Alliances for Innovation programme, 2024-2027) An analysis of the skills, competences, and best practices needed for comprehensive geriatric assessment''.

Materials and Methods

e-Delphi study: The Delphi method is a widely used research tool in the fields of health sciences and nursing. The methodology of e-Delphi studies involves distributing questionnaires through repeated rounds to a panel of anonymous experts on the topic under consideration, aiming ultimately to reach consensus on critical research questions and issues that concern the scientific community, such as establishing strong recommendations for clinical skills. The process usually involves three rounds, in the first-round experts receive a structured questionnaire in which they are asked to provide their judgement on the set of questions or recommendations provided to them. After analyzing their responses from the first round, the questionnaires are reformulated to include their own recommendations and redistributed for thorough review and evaluation until the desired outcome of absolute convergence of their views is achieved (Keeney et., al 2006; Nasa et., al 2021; Shang, 2023).

According to recent research data, the e-Delphi method does not differ in its conduct compared to the traditional Delphi technique. However, e-Delphi studies provide the flexibility of using the internet to invite experts from around the world, allowing participants to submit their responses according to their own schedule without further constraints (Bownes and Giannotti, 2023).

In this study we used the e-Delphi method to facilitate rapid data collection and analysis. At regular intervals participants received a reminder notification to submit their responses for each round, which contributed positively to achieving high response rates. Participation of the experts was voluntary; there was anonymity of responses in each round of the study in order to ensure that each expert brought an independent opinion without being influenced by other members of the panel.

Following the second round of the e-Delphi study, Cronbach's Alpha was computed using SPSS Statistics (version 30) to evaluate the internal consistency of the suggested competency items. The study comprised the items that the expert panel scored using a 9-point Likert scale. Cronbach's Alpha scores >0.80 indicated high dependability, while values ≥0.70 were deemed acceptable.

Participants: The panel of experts consisted of 14 experts in the field of gerontological nursing. The composition of the panel was based on purposive sampling, in accordance with the principles of the Delphi method which specify that a random sample is not used but rather a selected group of "knowledgeable individuals" with expertise in the subject matter (Keeney et., al 2006). Specifically, the /inclusion? criteria included extensive experience in caring for the elderly and having a CGA-related role (such as nurses specialized in geriatrics, academic educators, nursing directors and registered nurses). The experts were from six European countries (Greece, Cyprus, Finland, Iceland, Latvia and Italy). All participants had a nursing degree (registered nurses), while most held postgraduate degrees (6 with an MSc and 4 with a PhD). The sample was predominantly female (13 females, 1 male). The mean age of the experts was 53.4 years (SD=7.9). They possessed extensive professional experience in nursing (mean 27.6 years, SD=9.4), of which an average approximately of 19 years (SD=8.3) was in the field of elderly care. (Table 1)

Table 1. Participants of the e-Delphi study		
Country (n)	Profession (n)	Education (n)
Iceland (6)	Geriatric Nurse Specialist (4)	Master of Science in Nursing (6)
Greece (3)	Nursing Director (4)	Doctor of Philosophy (PhD) in Geriatrics or Nursing Studies (4)
Finland (2)	Academic Educator (5)	Nursing Degree BSN/RN (3)
Cyprus (1)	Registered Nurse (1)	Certified Geriatric Nurse Specialist (1)
Latvia (1)	Registered Nurse	Doctor of Medicine (PhD)
Italy (1)		
Gender (n) Female (13), Male (1)		
Age: 53.4 ±7.9		
Working experience: 27.6 ±9.4		
Working experience in the field of elderly care: 19.1 ±8.3		

Results

Round 1

The study was conducted in three rounds (Round 1,2,3) between August and November 2024. In the first round the experts were given an initial list of 34 suggested competencies which related to the performance of CGA by nurses. The proposed list was derived after a scoping review of the literature through which potentially relevant competency areas had been identified (Robinson, 1991). Participants were asked to rate whether each skill was important or not for effective CGA (Important - Approved / Not important - Discard). In the first-round experts had also the opportunity through open responses to suggest new competencies that may not have been included but considered essential, as well as they could recommend rewording of existing competencies if they deemed it necessary (Table 2 shows the list of the initial competencies given for evaluation in round 1).

	Table 2. List of Competencies that were used in the first round of the e-Delphi Study
1	Conduct a thorough health evaluation incorporating the patient's medical history, physical examination, and diagnostic testing.
2	Recognizing, assessing, and categorizing frailty with the use of suitable screening tools and methods.
3	Conducting comprehensive physical examinations and referring if additional diagnostic testing is required

4	Evaluating nutritional status and detecting dietary problems or malnutrition.
5	Assessing cognitive performance and detecting cognitive deficits.
6	Accessing and recognizing mental health issues such as depression and anxiety.
7	Conducting vision, hearing, and dental evaluations, identifying impairments, and coordinating care with specialists.
8	Evaluating and treating pain, and creating plans for managing pain
9	Assessing fall risk and hazards extensively and implementing preventive measures including patient training to improve patient safety.
10	Comprehensive medication review, potential medication adverse effects detection and management of polypharmacy.
11	Planning, implementing, evaluating, and revising personalized treatment plans according to each patient's particular medical background, way of life, and preferences.
12	Involve individuals to actively participate in their care and treatment options.
13	Empower patients by providing information and resources they need to efficiently and independently manage their health.
14	Respecting patient's preferences, and experiences during nursing care.
15	Assessing emotional, spiritual, and cultural aspects of individuals and integrating them into nursing care.
16	Evaluate the patient's social status, living situation, and functional state.
17	Assessing and altering surroundings to minimize the incidence of falls, guaranteeing home safety.
18	Work efficiently in multidisciplinary teams and provide comprehensive and integrated healthcare.
19	Building compassionate and positive relationships.
20	Demonstrating professional progress by seeking out chances for both personal and professional development.
21	Exhibiting empathic communication, and engaging in productive interactions with individuals, families, and colleagues.
22	Deliver culturally competent care and collaborate effectively with individuals from different backgrounds.
23	Use the best scientific evidence available to support autonomous clinical decision making and to deliver quality nursing care.
24	Promoting the recruiting, retaining, and training of competent nursing staff, understanding the value of skilled workers in delivering optimal patient care.

25	Supervising and guiding healthcare teams, displaying leadership abilities, and making informed decisions to achieve quality patient care.
26	Working with family members and caregivers efficiently.
27	Collaborating in interdisciplinary teams to improve patient care.
28	Prepare, and calculate dosages, and monitor for adverse reactions in medication administration including parenteral and respiratory therapies.
29	Monitoring and interpreting vital signs (temperature, pulse, respiration, and blood pressure).
30	Providing comprehensive wound, ostomy, and urinary catheter care, including problem monitoring, routine maintenance, and teaching patients self-care methods.
31	Engaging and leading quality improvement initiatives to improve patient care and operational effectiveness.
32	Critically evaluate his performance, promoting continuous self-evaluation and improving his professional skills through reflective practice.
33	Methodically monitoring patient outcomes and evaluating and modifying care plans as necessary.
34	Engaging in continuing professional development activities to enhance knowledge and abilities in providing high-quality care.

After collecting the responses, the percentage of acceptance for each competency was analyzed individually. According to the results of the first round, all initial competencies were retained, as they were considered important by the majority of experts. No element was completely rejected in Round 1. Participants provided some comments to improve the wording of some competencies and indicated two additional competencies that were missing from the list. Consequently, the list was updated, the two new competencies were added (with appropriate integration of wording comments into the existing ones), bringing the total number to 36 competencies to be evaluated in the next round.

Round 2

In the second round, the 36 competencies were re-presented to the experts, who were now asked to rate them in terms of their importance on a 9-point Likert scale. On this scale, a value of 1 corresponded to 'not important at all' and a value of 9 to 'extremely important' (Table 3 contains the list of competencies submitted for evaluation in the second round).

	Table 3. List of proposed competencies for the second round
1	Conduct a thorough health evaluation incorporating the patient's medical history, physical examination, and diagnostic testing.
2	Recognizing, assessing, and categorizing frailty with the use of suitable screening tools and methods.

3	Conduct comprehensive physical examinations and refer if additional diagnostic testing is required.
4	Evaluating nutritional status and detecting dietary problems or malnutrition.
5	Assessing cognitive performance and detecting cognitive deficits.
6	Assessing and recognizing mental health issues such as depression and anxiety.
7	Conducting vision, hearing, and dental evaluations, identifying impairments, and coordinating care with specialists.
8	Evaluating and treating pain, and creating plans for managing pain.
9	Assessing fall risk and hazards extensively and implementing preventive measures, including elderly training to improve elderly safety.
10	Comprehensive medication review, potential medication adverse effects detection, and management of polypharmacy.
11	Planning, implementing, evaluating, and revising personalized treatment plans according to each patient's particular medical background, way of life, and preferences
12	Involve individuals to actively participate in their care and treatment options.
13	Empower the elderly by providing information and resources they need to efficiently and independently manage their health.
14	Respecting patients' preferences and experiences during nursing care.
15	Assessing emotional, spiritual, and cultural aspects of individuals and integrating them into nursing care.
16	Evaluate the elderly's social status, living situation, and functional state.
17	Assessing and altering surroundings to minimize the incidence of falls, guaranteeing home safety.
18	Work efficiently in multidisciplinary teams and provide comprehensive and integrated healthcare.
19	Building compassionate and positive relationships.
20	Demonstrating professional progress by seeking out chances for both personal and professional development.
21	Exhibiting empathic communication, and engaging in productive interactions with individuals, families, and colleagues.
22	Deliver culturally competent care and collaborate effectively with individuals from different backgrounds.
23	Use the best scientific evidence available to support autonomous clinical decision-making and to deliver quality nursing care.

24	Promoting the recruiting, retaining, and training of competent nursing staff, and understanding the value of skilled workers in delivering optimal patient care.
25	Supervising and guiding healthcare teams, displaying leadership abilities, and making informed decisions to achieve quality elderly care.
26	Working with family members and caregivers efficiently.
27	Collaborating in interdisciplinary teams to improve patient care including social and community services as well.
28	Prepare, calculate dosages, and monitor for adverse reactions in medication administration including parenteral and respiratory therapies
29	Monitoring and interpreting vital signs (temperature, pulse, respiration, and blood pressure).
30	Providing comprehensive wound, ostomy, and urinary catheter care, including problem monitoring, routine maintenance, and teaching the elderly self-care methods.
31	Engaging and leading quality improvement initiatives to improve patient care and operational effectiveness.
32	Critically evaluates his performance, promoting continuous self-evaluation and improving his professional skills through reflective practice
33	Methodically monitoring individual outcomes and evaluating and modifying care plans as necessary.
34	Engaging in continuing professional development activities to enhance knowledge and abilities in providing high-quality care.
35	Supporting the elderly to adopt healthy behaviors, providing guidance and motivation that enhances their ability to manage their health effectively.
36	Evaluating the rehabilitation requirements of the elderly to regain independence and working interdisciplinary to plan and enhance rehabilitation efforts.

Participants independently rated each competency, based on their personal judgement and experience. Once the ratings were collected, the mean and standard deviation (SD) were calculated for each competency. The consensus criterion was set 80% of the outset, meaning that the competency would be considered 'important' if at least 80% of the experts rated it highly. In addition, the variance of responses was used as a complementary indicator; it was considered that a low standard deviation (SD $\leq$ 1.0) indicates a homogeneous assessment and therefore a high degree of agreement in the group.

Ahead of round three, the competencies that failed to meet predefined consensus threshold either due lower scores or high response dispersion were scheduled for removal from the final list (Table 4 presents the results from the second round of the study).

	Table 4. Results from the second round	
#	Competency	Score
14	Respecting patients' preferences and experiences during nursing care.	8.86
10	Comprehensive medication review, potential medication adverse effects detection, and management of polypharmacy	8.79
12	Involve individuals to actively participate in their care and treatment options.	8.79
18	Work efficiently in multidisciplinary teams and provide comprehensive and integrated healthcare.	8.79
21	Exhibiting empathic communication, and engaging in productive interactions with individuals, families, and colleagues.	8.79
23	Use the best scientific evidence available to support autonomous clinical decision-making and to deliver quality nursing care.	8.79
1	Conduct a thorough health evaluation incorporating the patient's medical history, physical examination, and diagnostic testing.	8.71
9	Assessing fall risk and hazards extensively and implementing preventive measures, including elderly training to improve elderly safety.	8.71
11	Planning, implementing, evaluating, and revising personalized treatment plans according to each patient's particular medical background, way of life, and preferences.	8.71
13	Empower elderly by providing information and resources they need to efficiently and independently manage their health.	8.71
28	Prepare, calculate dosages, monitor for adverse reactions in medication administration including parenteral and respiratory therapies.	8.71
29	Monitoring and interpreting vital signs (temperature, pulse, respiration, and blood pressure).	8.71
5	Assessing cognitive performance and detecting cognitive deficits.	8.64
17	Assessing and altering surroundings to minimize the incidence of falls, guaranteeing home safety.	8.64
19	Building compassionate and positive relationships.	8.64

22	Deliver culturally competent care and collaborate effectively with individuals from different backgrounds.	8.64
26	Working with family members and caregivers efficiently.	8.64
27	Collaborating in interdisciplinary teams to improve patient care including social and community services as well	8.64
33	Methodically monitoring individual outcomes and evaluating and modifying care plans as necessary.	8.64
36	Evaluating the rehabilitation requirements of elderly to regain independence and working interdisciplinary to plan and enhance rehabilitation efforts.	8.64
24	Promoting the recruiting, retaining, and training of competent nursing staff, understanding the value of skilled workers in delivering optimal patient care.	8.57
30	Providing comprehensive wound, ostomy, and urinary catheter care, including problem monitoring, routine maintenance, and teaching the elderly self-care methods.	8.57
35	Supporting elderly to adopt healthy behaviors, providing guidance and motivation that enhances their ability to manage their health effectively.	8.57
4	Evaluating nutritional status and detecting dietary problems or malnutrition.	8.50
7	Conducting vision, hearing, and dental evaluations, identifying impairments, and coordinating care with specialists.	8.50
25	Supervising and guiding healthcare teams, displaying leadership abilities, making informed decisions to achieve quality elderly care.	8.50
32	Critically evaluates his own performance, promoting continuous self-evaluation and improving his professional skills through reflective practice.	8.50
2	Recognizing, assessing and categorized frailty with the use of suitable screening tools and methods.	8.43
6	Assessing and recognizing mental health issues such as depression and anxiety.	8.43
8	Evaluating and treating pain, and creating plans for managing pain	8.43
31	Engaging and leading quality improvement initiatives to improve patient care and operational effectiveness.	8.43

34	Engaging in continuing professional development activities to enhance knowledge and abilities in providing high-quality care.	8.43
15	Assessing emotional, spiritual, and cultural aspects of individuals and integrating them into nursing care.	8.36
16	Evaluate the elderly's social status, living situation, and functional state.	8.29

The results of the second round were analyzed, revealing that most of the proposed domains had received high importance scores and low standard deviations, indicating a convergence of views. Two competencies were found not to meet the consensus criteria. These were (1) "Conducting comprehensive physical examinations and referring if additional diagnostic testing is required " and (2) "Demonstrating professional progress by seeking out chances for both personal and professional development". These competencies either received lower relative scores or exhibited greater variability in expert opinions, resulting in a failure to reach ≥80% of agreement level. Therefore, they were excluded from the final list. Following their exclusion, a revised set of 34 competencies emerged, which was advanced to the third and final round of the study.

Round 3

In the third round of the study, experts were presented with the list of 34 retained competencies ranked from highest to lowest along with the average importance score each competency had received in the second round. Experts were asked to review this information and indicate their final agreement or disagreement for each competency to calculate the final agreement percentage. This round also provided an opportunity for participants to comment on the results ensuring that the highest possible consensus with the panel was ultimately achieved. The agreement for 26 competencies was 100% while for the rest 8 was 92.8%. The results enable us to report than an agreement has been reached for total of competencies. The detailed results of the third round are depicted Table 5.

	Table 5. Results from the third round of e-Delphi study		
#	Competency	Score	Agree n (%)
14	Respecting patients' preferences and experiences during nursing care.	8.86	13 (92.8%)
10	Comprehensive medication review, potential medication adverse effects detection, and management of polypharmacy	8.79	14 (100%)
12	Involve individuals to actively participate in their care and treatment options.	8.79	14 (100%)
18	Work efficiently in multidisciplinary teams and provide comprehensive and integrated healthcare.	8.79	14 (100%)

21	Exhibiting empathic communication, and engaging in productive interactions with individuals, families, and colleagues.	8.79	13 (92.8%)
23	Use the best scientific evidence available to support autonomous clinical decision-making and to deliver quality nursing care.	8.79	14 (100%)
1	Conduct a thorough health evaluation incorporating the patient's medical history, physical examination, and diagnostic testing.	8.71	13 (92.8%)
9	Assessing fall risk and hazards extensively and implementing preventive measures, including elderly training to improve elderly safety.	8.71	13 (92.8%)
11	Planning, implementing, evaluating, and revising personalized treatment plans according to each patient's particular medical background, way of life, and preferences.	8.71	14 (100%)
13	Empower elderly by providing information and resources they need to efficiently and independently manage their health.	8.71	14 (100%)
28	Prepare, calculate dosages, monitor for adverse reactions in medication administration including parenteral and respiratory therapies.	8.71	14 (100%)
29	Monitoring and interpreting vital signs (temperature, pulse, respiration, and blood pressure).	8.71	13 (92.8%)
5	Assessing cognitive performance and detecting cognitive deficits.	8.64	13 (92.8%)
17	Assessing and altering surroundings to minimize the incidence of falls, guaranteeing home safety.	8.64	14 (100%)
19	Building compassionate and positive relationships.	8.64	14 (100%)
22	Deliver culturally competent care and collaborate effectively with individuals from different backgrounds.	8.64	14 (100%)
26	Working with family members and caregivers efficiently.	8.64	14 (100%)
27	Collaborating in interdisciplinary teams to improve patient care including social and community services as well	8.64	14 (100%)
33	Methodically monitoring individual outcomes and evaluating and modifying care plans as necessary.	8.64	14 (100%)

36	Evaluating the rehabilitation requirements of elderly to regain independence and working interdisciplinary to plan and enhance rehabilitation efforts.	8.64	14 (100%)
24	Promoting the recruiting, retaining, and training of competent nursing staff, understanding the value of skilled workers in delivering optimal patient care.	8.57	14 (100%)
30	Providing comprehensive wound, ostomy, and urinary catheter care, including problem monitoring, routine maintenance, and teaching the elderly self-care methods.	8.57	14 (100%)
35	Supporting elderly to adopt healthy behaviors, providing guidance and motivation that enhances their ability to manage their health effectively.	8.57	14 (100%)
4	Evaluating nutritional status and detecting dietary problems or malnutrition.	8.50	13 (92.8%)
7	Conducting vision, hearing, and dental evaluations, identifying impairments, and coordinating care with specialists.	8.50	14 (100%)
25	Supervising and guiding healthcare teams, displaying leadership abilities, making informed decisions to achieve quality elderly care.	8.50	14 (100%)
32	Critically evaluates his own performance, promoting continuous self-evaluation and improving his professional skills through reflective practice.	8.50	14 (100%)
2	Recognizing, assessing and categorized frailty with the use of suitable screening tools and methods.	8.43	13 (92.8%)
6	Assessing and recognizing mental health issues such as depression and anxiety.	8.43	14 (100%)
8	Evaluating and treating pain, and creating plans for managing pain	8.43	14 (100%)
31	Engaging and leading quality improvement initiatives to improve patient care and operational effectiveness.	8.43	14 (100%)
34	Engaging in continuing professional development activities to enhance knowledge and abilities in providing high-quality care.	8.43	14 (100%)
15	Assessing emotional, spiritual, and cultural aspects of individuals and integrating them into nursing care.	8.36	14 (100%)

16	Evaluate the elderly's social status, living situation, and functional state.	8.29	14 (100%)

Final Core Competencies for CGA

This e-Delphi study yielded an agreed list of 34 core competencies considered essential for a nurse to effectively conduct a CGA in the community. These competencies cover a wide range of skills, reflecting the multidimensional nature of gerontological care.

A significant degree of agreement among the expert assessments was indicated by the reliability analysis, which showed competency items had extremely good internal consistency with a Cronbach's Alpha of 0.849. The alpha value marginally rose to 0.864 when standardized items were examined, demonstrating the scale's resilience in this Delphi session

The alliance after extensive dialog and acknowledging the importance of ethics in the field of elderly care decided to add additional competency addressing professional ethics. Competency, no? 35: Act following professional ethical standards and current legislation. The main thematic areas and examples of competences per axis included in the final list, are summarized in the Table 6.

Table 6. Final core competencies
Domain 1: Clinical Assessment and Diagnostic Competencies
1. Conduct a thorough health evaluation incorporating the patient's medical history, physical examination, and diagnostic testing.
2. Assessing fall risk and hazards extensively and implementing preventive measures, including elderly training to improve elderly safety.
3. Assessing cognitive performance and detecting cognitive deficits.
4. Recognizing, assessing, and categorizing frailty with the use of suitable screening tools and methods.
5. Assessing and recognizing mental health issues such as depression and anxiety.
6. Evaluating and treating pain and creating plans for managing pain.
7. Conducting vision, hearing, and dental evaluations, identifying impairments, and coordinating care with specialists.
8. Evaluating nutritional status and detecting dietary problems or malnutrition.
9. Evaluate the elderly's social status, living situation, and functional state.
10. Assessing emotional, spiritual, and cultural aspects of individuals and integrating them into nursing care.

Domain 2: Care Planning and Coordination
11. Planning, implementing, evaluating, and revising personalized treatment plans according to each patient's particular medical background, way of life, and preferences.
12. Methodically monitoring individual outcomes and evaluating and modifying care plans as necessary.
13. Evaluating the rehabilitation requirements of the elderly to regain independence and working interdisciplinarity to plan and enhance rehabilitation efforts.
14. Collaborating in interdisciplinary teams to improve patient cate, including social and community services as well.
15. Comprehensive medication review, potential medication adverse effects detection, and management of polypharmacy.
16. Involve individuals to actively participate in their care and treatment options.
17. Evaluating the elderly's social status, living situation, and functional state.
Domain 3: Professional and Interpersonal Competencies
18. Exhibiting empathic communication, and engaging in productive interactions with individuals, families, and colleagues.
19. Building compassionate and positive relationships.
20. Working with family members and caregivers efficiently.
21. Deliver culturally competent care and collaborate effectively with individuals from different backgrounds.
22. Supporting the elderly to adopt healthy behaviors, providing guidance and motivation that enhances their ability to manage their health effectively.
23. Act under professional ethical standards and current legislation.
Domain 4: Environmental and Systemic Competencies
24. Assessing and altering surroundings to minimize the incidence of falls, guaranteeing home safety.
25. Promoting the recruiting, retaining, and training of competent nursing staff, understanding the value of skilled workers in delivering optimal patient care.
26. Evaluating and treating pain and creating plans for managing pain.

Domain 5: Technical and Procedural Competencies
27. Prepare, and calculate dosages, and monitor for adverse reactions in medication administration, including parenteral and respiratory therapies.
28. Monitoring and interpreting vital signs (temperature, pulse, respiration, and blood pressure).
29. Providing comprehensive wound, ostomy, and urinary catheter care, including problem monitoring, routine maintenance, and teaching the elderly self-care methods.
Domain 6: Quality Improvement and Evidence-Based Practice
30. Use the best scientific evidence available to support autonomous clinical decision-making and to deliver quality nursing care.
31. Engaging and leading quality improvement initiatives to improve patient care and operational effectiveness.
32. Critically evaluates his performance, promoting continuous self-evaluation and improving his professional skills through reflective practice
33. Engaging in continuing professional development activities to enhance knowledge and abilities in providing high-quality care
Domain 7: Ethics
34. Respecting patients' preferences and experiences during nursing care.
35. Act following professional ethical standards and current legislation

Discussion

The findings of this study presented a comprehensive and consensus framework of 35 core competencies that were considered necessary for nurses in primary health care to effectively perform CGA. These competencies, originally identified through a literature review by Dimitriadou, et., al (2025) extend over a wide range of abilities and the ultimate goal of all of them is to collectively improve the quality of life of older people by ensuring that their preferences and needs are respected (Dimitriadou et., al 2025).

The expert panel of this study identified clinical assessment and diagnostic skills of nurses as very important areas of CGA in the community. Our findings are consistent with those of Lyndon et., al (2022) who through an e-Delphi study to establish defined nursing intervention competencies highlighted clinical assessment as a key competency for nurses to conduct CGA in primary health care (Lyndon et., al 2022). International WHO guidelines note that providing integrated care to older people requires a holistic approach, which includes both physical and cognitive assessment in order to identify all their needs and provide optimal care through rational care programs (World Health Organaization,2017).

The development of targeted care plans focusing on each individual emerged as a competency of utmost importance. The

official guidelines from the National Institute for Health and Care excellence (2015) recommend individualized assessment of older adults, as well as working with health professionals to develop care plans tailored to their needs by adjusting them as their needs evolve (NICE, 2015).

The study by Heckman et., al (2024) states that success in providing quality health care to older people is ensured when multidisciplinary care teams work individually for each older person, have clear roles in the working group, are characterized by a collaborative spirit, while activating mechanisms for resolving objections when they arise. Our study highlights through the proposed competencies, that the collaboration among teams composed of health professionals is the key element for an integrated and adapted response to the complex needs of the geriatric population (Heckman et., al 2024).

Continuous education as well as the flexibility of nurses to cultivate strong bonds of trust with patients and their families while demonstrating empathy, was rated as an integral part of CGA by the expert panel. The Delphi study by Britten et., al (2018) also echoed that collaboration with the family environment of older people is a key component of their care (Britten et., al 2018). Equally important was considered the ability of nurses to adapt CGA to the cultural needs of older people. The AGS states that through the provision of healthcare that respects the cultural specificities of geriatric patients, an equitable and non-discriminatory approach to minority populations will be achieved (Committee by the AGSE, 2016).

Our findings are supported by recent research data such as that of Tate et., al (2024) which concludes that nurses must possess appropriate skills to manage culturally sensitive populations and intervene when they observe abusive behaviors towards older adults, by addressing all forms of violence (Tate et., al 2024).

It is particularly interesting that the experts identified nurses' ability to assess environmental conditions as a critical component of CGA. Creating safe living environments for the elderly acts as a preventive measure to avoid falls which among all other adverse events, cause pain and difficulties in performing daily activities.

In the literature, e-Delphi study by Stanyon et., al (2017) identified elderly safety as one of the top competencies that nurses should possess to safely improve the living environment in elderly care facilities (Stanyon et., al 2017). Pain significantly limits the daily lives of older people and is often not prioritized when building their care plans mainly due to lack of time. Our study highlighted a strong recommendation for the management and treatment of pain that often reported by older people, the Muntinga et al., (2016) study supports our proposed recommendation as nurses through CGA and a home care program discovered new cases of pain in the 10% of older people they assessed that were not previously known, concluding that nurses may provide expanded access to pain care for older. Another important finding was that even older people with previously reported pain, sought new coping plans in which the nurse could be actively involved in shaping them (Muntinga et., al 2016).

Technical training on practical skills to be applied by nurses such as (administration of drugs, measurement and evaluation of vital signs) and more complex skills such as (wound and stoma care) was also widely accepted by experts for the process of implementing CGA in the community. The study by Bing-Jonsson et al., (2016) assessed the abilities of nursing staff in primary health care and highlighted the lack of skills in advanced nursing procedures as well as in the documentation of health care services provided to older people (Bing-Jonsson et., al 2016). The recent study by Arrogante et al., (2023) demonstrated that training undergraduate nursing students in technical procedures for the management of geriatric syndromes through simulation contributed significantly in terms of acquiring the knowledge and skills needed to apply these practices in daily clinical practice (Arrogante et., al 2023).

Nurses' involvement in processes that contribute to improving the quality of care and the integration of new evidence-based practices emerged as a significant area of competencies. Our findings support that nurses conducting CGA should evaluate their

interventions and modify their care plans when outcomes are not encouraging for older people, in order to ensure optimal care. The study by Mate et al., (2021) reinforces our findings regarding the provision of evidence-based care to older people. As demonstrated through the << 4Ms>> model (What Matters, Medication, Mentation, Mobility) targeted care is provided that is in line with the preferences of the elderly, reduces unnecessary medication use, achieves prevention and management of delirium and depression and ensures safe mobility. In this way, the team of health professionals follows a specific care protocol with clear guidelines, promoting the use of up-to-date assessment tools for older people, while aligning their care with the latest scientific data (Mate et., al 2021).

To conclude, the results of this e Delphi study are consistent with the international data presented in the literature, highlighting the central importance of a holistic and multidisciplinary approach to the assessment and care of older people. The establishment of a clear competency framework, such as the one proposed, can provide the basis for the development of targeted training programs and enhanced collaboration between health care professionals. In this way, not only will the quality of care provided be improved, but operational barriers will also be reduced, leading to more effective management of the complex needs of an aging population.

Limitations; The 14 invited experts came from European countries with similar healthcare characteristics. The competencies considered important may differ in other contexts, such as in developing countries or culturally diverse environments, where available resources or the role of nurses may vary. Moreover, translating competencies back and forth between languages and cultural contexts can present significant challenges, potentially affecting the interpretation and applicability of the results

Recommendations: Based on the results of the study, the following recommendations are proposed:

Integration of skill learning into higher education institutions: Nursing curricula at both undergraduate and postgraduate levels could incorporate the recognized competencies required for conducting CGA in primary health care. Through specific courses or practice exercises they could focus on learning skills such as geriatric assessment, recognition of frailty syndromes, polypharmacy management and effective communication with older patients.

Development of continuing education programs: For PCN, it is recommended to established training seminars, the program of which will cover the learning of these 35 competences. Continuous professional development programs should include topics such as cognitive impairment assessment, prevention of falls, communication skills and coordination of interdisciplinary teams, to equip nursing staff with necessary skills.

Development of clinical protocols and guidelines for nurses: It is recommended that each country's health system and nursing professional associations develop protocols and clinical guidelines for CGA in the community, based on the competencies that emerged from our study. An example could be the creation of a checklist defining the assessment steps that the nurse should follow during the initial evaluation of an elderly patient.

Further research and evaluation: Further studies are recommended to assess the impact of the 35 competencies on daily clinical practice. Furthermore, investigation of the implementation of the competency framework in different countries and health systems is considered essential to establish the universality of the framework or the potential need for adjustments.

Conclusions: This study addresses a significant gap by providing an agreed model of 35 core competencies required for nurses to effectively conduct CGA in primary elderly care. Implementing the recommendations, particularly in the field of education, represents a crucial step toward preparing health care systems for the challenges of an ageing population. Properly trained nurses can play a vital role in providing quality and holistic care that promotes the health of elderly, while ensuring their dignity and independence.

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