AGE-MEDU

Advancing Geriatric Education for Nurses and Techs at High University

REPORT ON RESEARCH ON THE NEEDS AND SHORTCOMINGS OF NURSING STUDIES IN THE FIELD OF GERIATRICS AND GERONTOLOGY

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TABLE OF CONTENTS

1 Introduction 2

1.1 Global, European, and National Challenges of Population Ageing 2

1.2 Impact of Ageing on Health Systems and the Role of Geriatric Nursing 2

1.3 Background on Nursing Education and Geriatric Care 3

2 Questionnaire Methodology 5

2.1 Aim of the survey 5

2.2 Structure of the questionnaire 5

2.2.1 Demographics 6

2.2.2 Training and Skills in Geriatrics and Gerontology 6

2.2.3 Educational Gaps and Content Needs 7

2.2.4 Opportunities and Preferences for Further Development 7

2.2.5 Green Policies and Sustainability in Geriatric Care 8

2.3 Target population and sampling strategy 8

2.4 Data collection and analysis methods 9

2.4.1 Data Collection 9

2.4.2 Data Analysis 9

3 Survey Results 11

3.1 Overall 11

3.1.1 Demographics 11

3.1.2 Training and skills 14

3.1.3 Needs and shortcomings 20

3.1.4 Development opportunities 23

3.1.5 Green policies and sustainability in geriatric care 29

3.2 Croatia 35

3.2.1 Demographics 35

3.2.2 Training and skills 38

3.2.3 Needs and shortcomings 43

3.2.4 Development opportunities 46

3.2.5 Green policies and sustainability in geriatric care 51

3.3 Greece 57

3.3.1 Demographics 57

3.3.2 Training and skills 60

3.3.3 Needs and shortcomings 65

3.3.4 Development opportunities 67

3.3.5 Green policies and sustainability in geriatric care 73

3.4 Netherlands 79

3.4.1 Demographics 79

3.4.2 Training and skills 82

3.4.3 Needs and shortcomings 87

3.4.4 Development opportunities 89

3.4.5 Green policies and sustainability in geriatric care 95

3.5 Portugal 101

3.5.1 Demographics 101

3.5.2 Training and skills 104
3.5.3 Needs and shortcomings 109
3.5.4 Development opportunities 111
3.5.5 Green policies and sustainability in geriatric care 117

4 Analysis and Discussion 123

4.1 Key gaps in nursing education identified 123

4.2 The need for curricular reform in nursing education 124

4.3 Future perspectives and innovation in geriatric nursing education 125

4.4 Study limitations 126

5 Conclusion 127

5.1 Summary of key findings 127

5.2 Importance of strengthening geriatric nursing education 127

5.3 Next steps and implications for policy and practice 127

6 References 129

7 ANNEX 1 ..... B

INDEX OF FIGURES

Figure 1 Gender distribution of the overall participants (n=404). 11
Figure 2 Distribution of overall participants by highest degree obtained. 12
Figure 3 Distribution of overall participants by current occupation. 12
Figure 4 Distribution of overall participants by number of years working on patient care. 13
Figure 5 Experience in geriatric care among participants from the four countries included. 13
Figure 6 Distribution of work settings among all respondents. 14
Figure 7 Proportion of overall respondents who received specific training in geriatrics and gerontology. 14
Figure 8 Overall respondents' perception of whether their training was sufficient to deal with challenges. 15
Figure 9 Proportion of overall individuals who received specific training in individuals with dementia. 17
Figure 10 Perceptions of the overall individuals if their training was enough to deal with the individuals with dementia. 18
Figure 11 Proportion of overall individuals who work daily with older adults. 19
Figure 12 Proportion of individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged. 22
Figure 13 Proportion of individuals who prefer different types of training. 24
Figure 14 Participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology. 25
Figure 15 Proportion of participants willing to attend training before or after work hours, or during their free time. 26
Figure 16 Proportion of participants interested in receiving additional ongoing training in geriatric and gerontological care. 26
Figure 17 Proportion of individuals who are familiar with green policies and sustainable practices in healthcare 29
Figure 18 Proportion of individuals who received specific training on sustainable practices in healthcare 29
Figure 19 Proportion of individuals who think is important to incorporate green policies into nursing education 31
Figure 20 Confidence levels that participants reported in safely disposing hazardous waste commonly used in the care of older adults 32
Figure 21 Proportion of individuals who would be willing to participate in training programs on sustainable healthcare practices. 33
Figure 22 Gender distribution of the Croatian participants (n=102). 35
Figure 23 Distribution of Croatian participants by highest degree obtained 35
Figure 24 Distribution of Croatian participants by current occupation. 36
Figure 25 Distribution of Croatian participants by number of years working on patient care. 36
Figure 26 Experience in geriatric care among participants. 37
Figure 27 Distribution of work settings among Croatian respondents. 37
Figure 28 Proportion of overall respondents who received specific training in geriatrics and gerontology. 38
Figure 29 Overall respondents' perception of whether their training was sufficient to deal with challenges. 38
Figure 30 Proportion of Croatian individuals who received specific training in individuals with dementia. 40
Figure 31 Perceptions of the Croatian individuals if their training was enough to deal with the individuals with dementia. 41

Figure 32 Proportion of Croatian individuals who work daily with older adults. 42
Figure 33 Proportion of individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged. 45
Figure 34 Proportion of Crotian individuals who prefer different types of training. 47
Figure 35 Croatian participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology. 48
Figure 36 Proportion of participants willing to attend training before or after work hours, or during their free time. 49
Figure 37 Proportion of Croatian participants interested in receiving additional ongoing training in geriatric and gerontological care. 49
Figure 38 Proportion of Croatian individuals who are familiar with green policies and sustainable practices in healthcare. 52
Figure 39 Proportion of Croatian individuals who received specific training on sustainable practices in healthcare 52
Figure 40 Proportion of Croatian individuals who think is important to incorporate green policies into nursing education. 54
Figure 41 Confidence levels that participants reported in safely disposing hazardous waste commonly used in the care of older adults 55
Figure 42 Proportion of Croatian individuals who would be willing to participate in training programs on sustainable healthcare practices. 56
Figure 43 Gender distribution of the Greek participants (n=102). 57
Figure 44 Distribution of Greek participants by highest degree obtained 57
Figure 45 Distribution of Greek participants by current occupation. 58
Figure 46 Distribution of Greek participants by number of years working on patient care. 58
Figure 47 Experience in geriatric care among Greek participants. 59
Figure 48 Distribution of work settings among Greek respondents. 59
Figure 49 Proportion of Greek respondents who received specific training in geriatrics and gerontology. 60
Figure 50 Greek respondents' perception of whether their training was sufficient to deal with challenges. 60
Figure 51 Proportion of Greek individuals who received specific training in individuals with dementia. 63
Figure 52 Perceptions of the Greek individuals if their training was enough to deal with the individuals with dementia. 63
Figure 53 Proportion of Greek individuals who work daily with older adults. 64
Figure 54 Proportion of Greek individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged. 67
Figure 55 Proportion of Greek individuals who prefer different types of training. 69
Figure 56 Greek participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology. 70
Figure 57 Proportion of Greek participants willing to attend training before or after work hours, or during their free time. 70
Figure 58 Proportion of Greek participants interested in receiving additional ongoing training in geriatric and gerontological care. 71
Figure 59 Proportion of Greek individuals who are familiar with green policies and sustainable practices in healthcare. 73
Figure 60 Proportion of Greek individuals who received specific training on sustainable practices in healthcare 74
Figure 61 Proportion of Greek individuals who think is important to incorporate green policies into nursing education. 75

Figure 62 Confidence levels that Greek participants reported in safely disposing hazardous waste commonly used in the care of older adults. 76
Figure 63 Proportion of Greek individuals who would be willing to participate in training programs on sustainable healthcare practices. 77
Figure 64 Gender distribution of the Dutch participants (n=100). 79
Figure 65 Distribution of Dutch participants by highest degree obtained. 79
Figure 66 Distribution of Dutch participants by current occupation. 80
Figure 67 Distribution of Dutch participants by number of years working on patient care. 80
Figure 68 Experience in geriatric care among Dutch participants. 81
Figure 69 Distribution of work settings among Dutch respondents. 81
Figure 70 Proportion of Dutch respondents who received specific training in geriatrics and gerontology. 82
Figure 71 Dutch respondents' perception of whether their training was sufficient to deal with challenges. 82
Figure 72 Proportion of Dutch individuals who received specific training in individuals with dementia. 84
Figure 73 Perceptions of the Dutch individuals if their training was enough to deal with individuals with dementia. 85
Figure 74 Proportion of Dutch individuals who work daily with older adults. 86
Figure 75 Proportion of Dutch individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged. 89
Figure 76 Proportion of Dutch individuals who prefer different types of training. 91
Figure 77 Dutch participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology. 92
Figure 78 Proportion of Dutch participants willing to attend training before or after work hours, or during their free time. 92
Figure 79 Proportion of Dutch participants interested in receiving additional ongoing training in geriatric and gerontological care. 93
Figure 80 Proportion of Dutch individuals who are familiar with green policies and sustainable practices in healthcare. 95
Figure 81 Proportion of Dutch individuals who received specific training on sustainable practices in healthcare. 96
Figure 82 Proportion of Dutch individuals who think is important to incorporate green policies into nursing education. 97
Figure 83 Confidence levels that Dutch participants reported in safely disposing hazardous waste commonly used in the care of older adults. 98
Figure 84 Proportion of Dutch individuals who would be willing to participate in training programs on sustainable healthcare practices. 99
Figure 85 Gender distribution of the Portuguese participants (n=100). 101
Figure 86 Distribution of Portuguese participants by highest degree obtained. 101
Figure 87 Distribution of Portuguese participants by current occupation. 102
Figure 88 Distribution of Portuguese participants by number of years working on patient care. 102
Figure 89 Experience in geriatric care among Portuguese participants. 103
Figure 90 Distribution of work settings among Portuguese respondents. 103
Figure 91 Proportion of Portuguese respondents who received specific training in geriatrics and gerontology. 104
Figure 92 Portuguese respondents' perception of whether their training was sufficient to deal with challenges. 104
Figure 93 Proportion of Portuguese individuals who received specific training in individuals with dementia. 106

Figure 94 Perceptions of the Portuguese individuals if their training was enough to deal with the individuals with dementia. 107
Figure 95 Proportion of Portuguese individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged. 108
Figure 96 Proportion of Portuguese individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged. 110
Figure 97 Proportion of Portuguese individuals who prefer different types of training. 113
Figure 98 Portuguese participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology. 114
Figure 99 Proportion of Portuguese participants willing to attend training before or after work hours, or during their free time..... 114
Figure 100 Proportion of Portuguese participants interested in receiving additional ongoing training in geriatric and gerontological care..... 115
Figure 101 Proportion of Portuguese individuals who are familiar with green policies and sustainable practices in healthcare. 117
Figure 102 Proportion of Portuguese individuals who received specific training on sustainable practices in healthcare. 118
Figure 103 Proportion of Portuguese individuals who think is important to incorporate green policies into nursing education. 119
Figure 104 Confidence levels that Portuguese participants reported in safely disposing hazardous waste commonly used in the care of older adults. 120
Figure 105 Proportion of Portuguese individuals who would be willing to participate in training programs on sustainable healthcare practices. 121

INDEX OF TABLES

Table 1 Topics covered during overall participants training. 15
Table 2 Training topics identified as missing by overall participants. 16
Table 3 Aspects of dementia care in which overall participants reported confidence..... 18
Table 4 Challenges that overall participants reported within the care of individuals with dementia.. 19
Table 5 Participants self-reported knowledge levels across topics related to ageing and care. 19
Table 6 Topics identified by overall participants as needing more emphasis in geriatric and gerontological nursing studies. 20
Table 7 Areas in which overall participants would like to improve through training. 23
Table 8 Prefered training formats for professional development reported by participants. 25
Table 9 Factors motivating participants to pursue further specialisation or education in geriatrics. .. 27
Table 10 Specific areas in which participants wish to deepen their knowledge in geriatric and gerontological care. 28
Table 11 Participant-reported obstacles to participation in continuing education. 28
Table 12 Participant-reported implementation of environmentally sustainable practices at work. ... 30
Table 13 Challenges faced by participants in implementing sustainable practices at work. 30
Table 14 Sustainability areas participants believe should be emphasised in geriatric and gerontological care. 32
Table 15 Participant-reported strategies to improve environmental sustainability in geriatric care. . 33
Table 16 Topics covered during Croatian participants' training. 39
Table 17 Training topics identified as missing by Croatian participants. 40
Table 18 Aspects of dementia care in which Croatian participants reported confidence. 41
Table 19 Challenges that Croatian participants reported within the care of individuals with dementia. 42

Table 20 Self-reported knowledge levels across topics related to ageing and care among Croatian participants. 43
Table 21 Topics identifies by Croatian participants as needing more emphasis in geriatric and gerontological nursing studies. 44
Table 22 Areas in which Croatian participants would like to improve through training. 46
Table 23 Preferred training formats for professional development reported by participants. 48
Table 24 Factors motivating Croatian participants to pursue further specialisation or education in geriatrics. 50
Table 25 Specific areas in which Croatian participants wish to deepen their knowledge in geriatric and gerontological care. 50
Table 26 Croatian participants reported obstacles to participation in continuing education. 51
Table 27 Participant-reported implementation of environmentally sustainable practices at work. 53
Table 28 Challenges faced by Croatian participants in implementing sustainable practices at work. 53
Table 29 Sustainability areas that Croatian participants believe should be emphasised in geriatric and gerontological care. 55
Table 30 Croatian participants-reported strategies to improve environmental sustainability in geriatric care 56
Table 31 Topics covered during Greek participants' training. 61
Table 32 Training topics identified as missing by Greek participants. 62
Table 33 Aspects of dementia care in which Greek participants reported confidence. 64
Table 34 Challenges that Greek participants reported within the care of individuals with dementia. 64
Table 35 Self-reported knowledge levels across topics related to ageing and care among Greek participants. 65
Table 36 Topics identified by Greek participants as needing more emphasis in geriatric and gerontological nursing studies. 66
Table 37 Areas in which Greek participants would like to improve through training. 68
Table 38 Preferred training formats for professional development reported by Greek participants. 69
Table 39 Factors motivating Greek participants to pursue further specialization or education in geriatrics. 71
Table 40 Specific areas in which Greek participants wish to deepen their knowledge in geriatric and gerontological care. 72
Table 41 Greek participants reported obstacles to participation in continuing education. 73
Table 42 Greek participants reported implementation of environmentally sustainable practices at work. 74
Table 43 Challenges faced by Greek participants in implementing sustainable practices at work. 75
Table 44 Sustainability areas that Greek participants believe should be emphasised in geriatric and gerontological care. 76
Table 45 Greek participants reported strategies to improve environmental sustainability in geriatric care. 77
Table 46 Topics covered during Dutch participants training. 83
Table 47 Training topics identified as missing by Dutch participants. 84
Table 48 Challenges that Dutch participants reported within the care of individuals with dementia. 85
Table 49 Challenges that Dutch participants reported within the care of individuals with dementia. 86
Table 50 Self-reported knowledge levels across topics related to ageing and care among Dutch participants. 86
Table 51 Topics identified by Dutch participants as needing more emphasis in geriatric and gerontological nursing studies. 87
Table 52 Areas in which Dutch participants would like to improve through training. 90
Table 53 Preferred training formats for professional development reported by Dutch participants. 91
Table 54 Factors motivating Dutch participants to pursue further specialisation or education in geriatrics. 93

Table 55 Specific areas in which Dutch participants wish to deepen their knowledge in geriatric and gerontological care. 94
Table 56 Dutch participants reported obstacles to participation in continuing education. 95
Table 57 Dutch participants-reported implementation of environmentally sustainable practices at work 96
Table 58 Challenges faced by Dutch participants in implementing sustainable practices at work. 96
Table 59 Sustainability areas that Dutch participants believe should be emphasised in geriatric and gerontological care. 98
Table 60 Dutch participants reported strategies to improve environmental sustainability in geriatric care. 99
Table 61 Topics covered during Portuguese participants training. 105
Table 62 Training topics identified as missing by Portuguese participants. 106
Table 63 Aspects of dementia care in which Portuguese participants reported confidence. 107
Table 64 Challenges that Portuguese participants reported within the care of individuals with dementia. 108
Table 65 Self-reported knowledge levels across topics related to ageing and care among Portuguese participants. 108
Table 66 Topics identified by Portuguese participants as needing more emphasis in geriatric and gerontological nursing studies. 109
Table 67 Areas in which Portuguese participants would like to improve through training. 112
Table 68 Preferred training formats for professional development reported by Portuguese participants. 113
Table 69 Factors motivating Portuguese participants to pursue further specialization or education in geriatrics. 115
Table 70 Specific areas in which Portuguese participants wish to deepen their knowledge in geriatric and gerontological care. 116
Table 71 Portuguese participants reported obstacles to participation in continuing education. 117
Table 72 Portuguese participants reported implementation of environmentally sustainable practices at work 118
Table 73 Challenges faced by Portuguese participants in implementing sustainable practices at work. 119
Table 74 Sustainability areas that Portuguese participants believe should be emphasised in geriatric and gerontological care. 120
Table 75 Portuguese participants-reported strategies to improve environmental sustainability in geriatric care 121

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1 Introduction

1.1 Global, European, and National Challenges of Population Ageing

Population ageing is a defining demographic trend of the 21st century, driven by increased life expectancy, improvements in healthcare, and declining birth rates [1-3]. Globally, the proportion of individuals aged 65 and over is rising rapidly, projected to reach 1.6 billion by 2050 and 3.2 billion by 2100, surpassing the number of children under 15 for the first time in history [4]. This shift has profound economic, social, and healthcare implications, including higher old-age dependency ratios, workforce shortages, pressures on pension and welfare systems, and increased demand for healthcare services and geriatric care [5, 6].

In Europe, similar dynamics are evident, with nearly one-fifth of the population aged 65 and over in 2020 [7]. Variations exist among countries due to birth rates, migration patterns, and historical population trends, but projections suggest that by 2050 up to one-third of Europeans could be over 65 [8]. Croatia, Greece, the Netherlands, and Portugal exemplify different aspects of this trend: Croatia and Greece face rapidly ageing populations with high old-age dependency ratios, declining fertility, and increased reliance on formal care; the Netherlands shows a slower ageing trend but rising relevance of older care and informal caregiving; Portugal exhibits one of the highest projected growth rates in its older population, compounded by youth emigration and changing family structures [9-13].

Across all contexts, population ageing requires strategic planning to address healthcare needs, social support, and economic sustainability, highlighting the critical role of geriatric nursing education in preparing professionals to respond effectively to the challenges and opportunities of an ageing society.

1.2 Impact of Ageing on Health Systems and the Role of Geriatric Nursing

Population ageing presents complex challenges and opportunities for societies worldwide. As the number of older adults rises, health systems, social welfare frameworks, and labour markets face increasing pressure to adapt [14-16]. This demographic shift intensifies demand for healthcare services, long-term care facilities, and support for chronic conditions, potentially leading to resource shortages, higher costs, and the need for innovative care models [17-19]. Simultaneously, the growing needs of older populations stimulate advancements in healthcare technology, including telemedicine, mobile applications, and wearable devices, which can enhance access, efficiency, and patient-centred care, particularly in remote or underserved areas [20, 21].

In response to these evolving demands, geriatric nursing plays a critical role in delivering specialised, holistic, and compassionate care for older adults [22, 23]. Geriatric nurses are essential in assessing, planning, implementing, and evaluating care across hospitals, long-term care facilities, community settings, and patients' homes [24, 25]. Their expertise allows for the early identification of age-related syndromes, prevention of functional decline, and promotion of healthy ageing [26]. Moreover, geriatric nurses often coordinate multidisciplinary teams, advocate for patients' dignity and autonomy, and support families, requiring competencies that extend beyond biomedical knowledge to include psychosocial, ethical, and communication skills [24].

Despite its importance, geriatric nursing remains underrepresented in many nursing curricula, limiting the preparedness of graduates to meet the needs of an ageing population [24]. Strengthening education and professional development in geriatrics and gerontology is therefore essential, not only to equip nurses with the knowledge, skills, and attitudes necessary for high-quality care but also to ensure the sustainability and resilience of healthcare systems globally and across Europe [24-26].

1.3 Background on Nursing Education and Geriatric Care

Nursing education across Europe demonstrates a structured approach to preparing healthcare professionals, with varying levels of provision and specialisation in geriatrics and gerontology. In Croatia, nursing education includes 15 undergraduate programs, one additional online undergraduate program, and 17 master's programs, predominantly offered by public institutions, while private institutions remain limited [27, 28]. Doctoral-level education in nursing is not yet available; interested candidates typically pursue doctorates in biomedicine at medical universities [29]. Programs are geographically well distributed across major cities, including Zagreb, Rijeka, Split, Osijek, Zadar, Karlovac, Dubrovnik, and Šibenik, and an online option further enhances accessibility.

In Greece, nursing education is offered at all levels, undergraduate, master's, and doctoral, with more than 20 undergraduate programs and over 10 master's programs, mainly provided by public universities such as the University of Athens, Thessaloniki, Patras, and Thessaly [30-32]. Doctoral programs are research-focused and require a master's degree, being primarily available in public institutions. Nursing schools are geographically dispersed across major cities and island regions, ensuring access for students nationwide. Private institutions play a limited role, primarily offering non-university or collaborative programs with foreign institutions.

The Netherlands provides nursing education exclusively through public institutions, offering applied sciences (HBO-V) and academic pathways. Seventeen undergraduate programs and 10–12 postgraduate programs are delivered by universities of applied sciences, while academic universities

such as Utrecht, Amsterdam, Maastricht, Leiden, and Groningen provide research-oriented master's and doctoral programs. Nursing programs are widely distributed geographically, with a national coordinating body (LOOV) ensuring curricular alignment, quality, and responsiveness to evolving professional needs [33, 34]. Despite historical growth in student enrolment, recent trends indicate declining intake in full-time programs, highlighting the need for sustained investment in the nursing workforce.

In Portugal, nursing education operates within a higher education system, encompassing university and polytechnic institutions offering undergraduate, postgraduate, master's, and doctoral programs. Currently, 31 schools provide undergraduate programs, with postgraduate specialization, master's, and doctoral programs widely available in public and private institutions [35, 36]. Undergraduate programs are typically four years in duration and provide foundational competencies for general nursing practice, while postgraduate and master's programs focus on specialised clinical, community, and research skills. Doctoral programs develop advanced research and academic leadership capabilities. Schools are concentrated in urban and coastal regions, particularly in the north and centre of the country, ensuring accessibility while supporting a well-distributed workforce.

Across these countries, the integration of geriatrics and gerontology into nursing curricula varies. Postgraduate programs offer more specialised training in geriatric nursing, gerontology, palliative care, dementia care, and ethical considerations.

Despite these developments, significant gaps remain in geriatric nursing education [37, 38]. Undergraduate programs often provide fragmented coverage of ageing-related topics, limiting the acquisition of comprehensive knowledge and skills. Standardisation across institutions is lacking, with content and depth varying considerably. Clinical placements may not provide best-practice environments, and faculty with specialised geriatric expertise are in short supply. Finally, underinvestment in innovative educational approaches, including clinical simulation, digital health, and interdisciplinary care, hinders the preparation of nurses for the complex needs of older adults. Addressing these gaps requires coordinated efforts among policymakers, academic institutions, professional bodies, and healthcare providers, including national curriculum guidelines, faculty development, strengthened academic-clinical partnerships, and expanded opportunities for students to engage with older adults in diverse care settings.

2 Questionnaire Methodology

2.1 Aim of the survey

The main objective of this survey is to conduct a comprehensive needs assessment of nursing education in the domains of geriatrics and gerontology across the participating countries in the AGE-MEDU project, co-funded by the Erasmus+ Programme of the European Union. In light of the rapidly ageing population across Europe, the project aims to align nursing curricula with the evolving demands of healthcare systems, particularly in terms of delivering high-quality, person-centred care to older adults.

This survey seeks to capture the perspectives of a wide range of stakeholders involved in geriatric and gerontological care, including nursing students, registered nurses, educators, and other healthcare professionals (e.g., occupational therapists, doctors, and social workers). By gathering data on their educational backgrounds, professional experience, training gaps, perceived competencies, and unmet learning needs, the survey will generate an evidence base for curriculum development and policy reform.

Additionally, the survey aims to explore current practices and attitudes regarding green policies and sustainable healthcare in the context of ageing. This is aligned with the AGE-MEDU project's broader goal of promoting environmentally responsible care in gerontology/geriatrics, fostering interdisciplinary cooperation, and contributing to the creation of a more resilient and sustainable health workforce across the EU.

Ultimately, the insights derived from this survey will support the co-creation of an innovative educational programme tailored to the specific training needs of nurses and technical health professionals working with older adults in Croatia, Greece, the Netherlands, and Portugal. The findings will also inform recommendations to national education authorities, nursing councils, and policymakers for updating and improving existing training pathways in geriatrics and gerontology.

2.2 Structure of the questionnaire

The questionnaire was developed through a collaborative and multidisciplinary process, engaging all partners involved in the AGE-MEDU project. The consortium brings together academic institutions, healthcare providers, and research centres from Croatia, Greece, the Netherlands and Portugal, each contributing their expertise in nursing education, gerontology, curriculum development, health policy, and sustainability. The resulting instrument reflects this diversity,

integrating both academic and practical perspectives from professionals with backgrounds in nursing, social work, occupational therapy, and educational sciences.

This joint effort ensured the content validity and cultural appropriateness of the questionnaire across different national contexts. The structure was designed to capture a wide range of information relevant to the development of an innovative educational programme in geriatrics and gerontology, while remaining concise and user-friendly. The estimated time for completion is between 10 and 15 minutes.

The questionnaire is divided into five main thematic sections, each targeting a specific set of objectives and incorporating a mix of question types: multiple-choice, Likert-scale, and open-ended items, to allow both quantitative and qualitative analysis.

2.2.1 Demographics

This initial section gathers key background data to characterise the respondent population. Information collected includes:

- Age and gender identity
- Highest educational qualification attained
- Current professional role (e.g., nursing student, nurse, physician)
- Years of experience in patient care
- Experience in geriatric care settings
- Primary care setting (e.g., hospital, nursing home, long-term care)

This will allow for segmentation of responses by professional profile and country, ensuring comparative analysis across subgroups.

2.2.2 Training and Skills in Geriatrics and Gerontology

This section investigates the participants' formal and informal education in geriatrics and gerontology. It covers:

- Whether the respondent has received specific training in geriatrics and gerontology
- Perceived adequacy of the training received
- Topics covered in prior training, including core domains such as ageing mechanisms, chronic disease management, communication, palliative care, and use of technologies in geriatric care, among others
- Identification of training gaps and underrepresented competencies

- Self-reported confidence and knowledge levels in essential domains (using a 1 to 5 Likert scale)

Given the growing prevalence of dementia in ageing populations, this section delves also into:

- Experience and training related to dementia care
- Evaluation of the sufficiency of dementia-related training
- Confidence levels in various aspects of dementia care (e.g., communication, behavioural management, ethical considerations)
- Perceived barriers to effective dementia care (e.g., lack of training, time constraints, support structures)
- Suggestions for improving dementia education within nursing programmes

This will provide a detailed view of educational coverage and perceived preparedness to deliver care to older adults and will inform on the development of targeted educational modules on dementia care.

2.2.3 Educational Gaps and Content Needs

This section is focused on identifying areas that respondents believe are underrepresented in current nursing curricula. It includes:

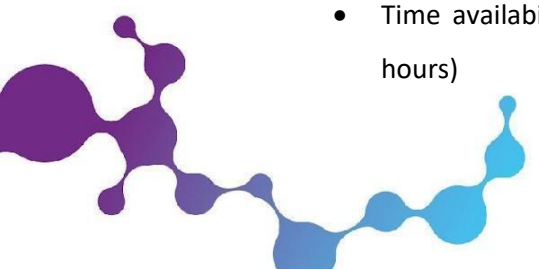
- Thematic areas that should receive greater emphasis in nursing studies
- Open-text input on suggested improvements to training programmes
- Perspectives on whether geriatric nursing research is adequately encouraged, and reasons supporting their view

The responses will provide direct input for curriculum design, highlighting unmet needs and opportunities for innovation.

2.2.4 Opportunities and Preferences for Further Development

This section explores respondents' willingness and ability to engage in continuous professional development. It includes questions on:

- Topics participants would like to explore in greater depth
- Preferred learning formats (e.g., in-person, hybrid, online)
- Effective teaching strategies (e.g., clinical simulation, experiential learning, interactive online classes)
- Time availability for training and preferred scheduling (e.g., before or after work hours)



- Motivational factors driving interest in further training (e.g., career advancement, personal fulfilment)

This section will be essential for the co-design of flexible, learner-centred educational formats that match the needs of professionals in different contexts.

2.2.5 Green Policies and Sustainability in Geriatric Care

The final section addresses an emerging area in healthcare education, the sustainable and environmentally responsible care practices. It assesses:

- Awareness of green policies and sustainable practices in healthcare
- Training received in sustainable healthcare
- Implementation of sustainable practices in the workplace (e.g., waste disposal, energy conservation, eco-friendly products)
- Challenges encountered in applying sustainable practices (e.g., institutional resistance, cost, lack of training)
- Opinions on the relevance of green education in nursing curricula
- Willingness to participate in future training on sustainability
- Specific suggestions for improving sustainability in geriatric care

This section ensures that the future educational programme includes content that aligns with EU goals for sustainable healthcare delivery.

2.3 Target population and sampling strategy

The target population for this survey comprised individuals directly or indirectly involved in nursing education and geriatric care across the four participating countries of the AGE-MEDU project: Croatia, Greece, the Netherlands and Portugal. This included:

1. Nursing students at undergraduate or postgraduate levels who are currently enrolled in higher education institutions.
2. Registered nurses actively working in various health and social care settings with older adults.
3. Educators and academic staff engaged in teaching nursing, geriatrics, or gerontology.
4. Other healthcare professionals (e.g., physicians, occupational therapists, social workers) with experience or insight into geriatric care and interdisciplinary education.

This inclusive approach was adopted to ensure the questionnaire captured a range of perspectives across different levels of training, professional experience, and care environments.

The sampling strategy followed a purposive and convenience-based approach, coordinated by each project partner. Participants were recruited through institutional networks, professional associations, academic departments, and partner organisations. Digital dissemination via email, newsletters, and social media channels further enhanced outreach and facilitated participation across diverse settings.

While the sampling was non-probabilistic, the diversity of professional backgrounds and the cross-national implementation of the survey allowed for the collection of rich and contextually relevant data to inform curriculum development. The objective was not to generalise to all nursing professionals in Europe, but rather to generate in-depth insights from those with direct experience in or exposure to geriatric and gerontological nursing education.

2.4 Data collection and analysis methods

2.4.1 Data Collection

The data were collected using a structured questionnaire, which was disseminated primarily in digital format via an online survey platform (LimeSurvey) (ANNEX 1). Each project partner was responsible for translating and adapting the questionnaire into their national language(s), ensuring cultural appropriateness and clarity. The data collection period spanned approximately three months, allowing adequate time for dissemination and responses.

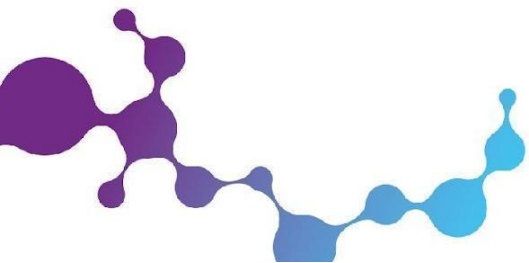
Participants were informed about the voluntary and anonymous nature of the survey at the beginning of the questionnaire. Informed consent was implied by the completion and submission of the form. The questionnaire was hosted securely and in compliance with the General Data Protection Regulation (GDPR), with the University of Porto acting as the lead institution for data management and protection.

2.4.2 Data Analysis

The data were analysed using a mixed-methods approach, combining quantitative descriptive statistics with qualitative content analysis:

Quantitative data from closed-ended questions (e.g., multiple-choice, Likert-scale items) were analysed using basic descriptive statistics such as frequency distributions, percentages, and means, which allowed for comparison across different countries and groups. Qualitative data from open-ended responses were analysed through thematic content analysis.

Where appropriate, cross-tabulations were conducted to explore patterns in responses according to variables such as country, professional role, or experience in geriatric care. The integration of quantitative and qualitative findings enabled a comprehensive understanding of current needs, barriers, and opportunities in gerontological nursing education across the consortium.



3 Survey Results

For the analysis of results, the data were presented according to two complementary perspectives:

Overall results, providing a consolidated view of all responses from the four participating countries (n = 404).

Country-specific results, providing a detailed breakdown of responses for each of the four national contexts: Croatia (n = 102), Greece (n = 102), the Netherlands (n = 100) and Portugal (n = 100).

Accordingly, for each of the five thematic sections of the questionnaire, results were presented five times in total: once as an overall synthesis, and then individually for each of the four countries. This organisation enabled both a macro-level understanding of the trends across Europe and a micro-level exploration of the specificities of each country.

3.1 Overall

3.1.1 Demographics

This study included a total of 404 participants, with a notable gender distribution where **19%** (n=78) **were male**. The mean age of the study population was **35.6 years**, with a standard deviation of 12.7 years, indicating a relatively diverse age range among the participants.

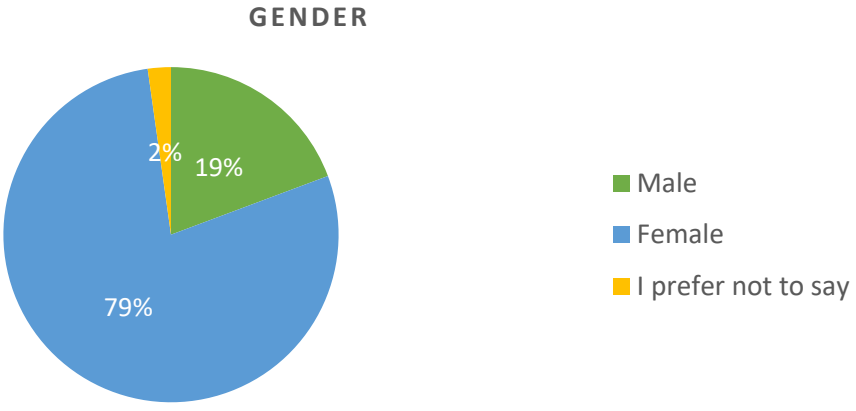


Figure 1 Gender distribution of the overall participants (n=404).

A significant proportion of the cohort, nearly **80%**, possessed some form of **higher education**. Specifically, **37%** held a **bachelor's degree**, **29%** had attained a **master's degree**, and **13%** had completed a **PhD**, highlighting a highly educated participant group.

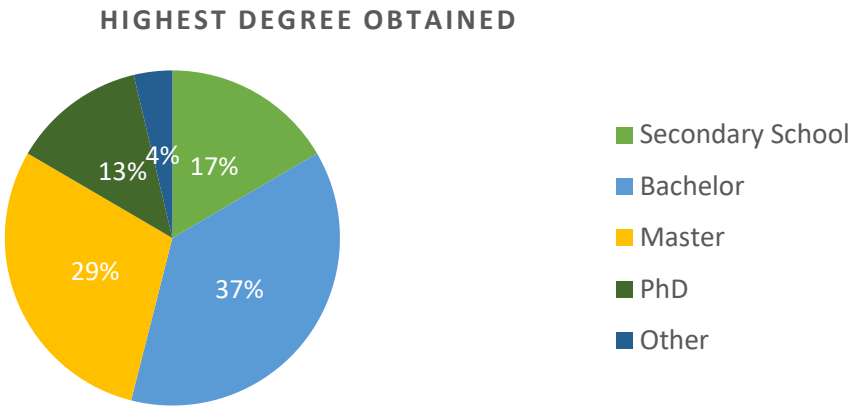


Figure 2 Distribution of overall participants by highest degree obtained.

The professional background of the **participants** was predominantly within the **healthcare sector**. The sample primarily consisted of **nursing students** (**28%**), **nurses** (**44%**), and **teachers** (**12%**). Other healthcare professionals also contributed to the sample, including **doctors** (**4%**), **social workers** (**4%**), and **occupational therapists** (**2%**). The remaining 6% comprised various other types of healthcare workers, ensuring a broad representation of the healthcare workforce.

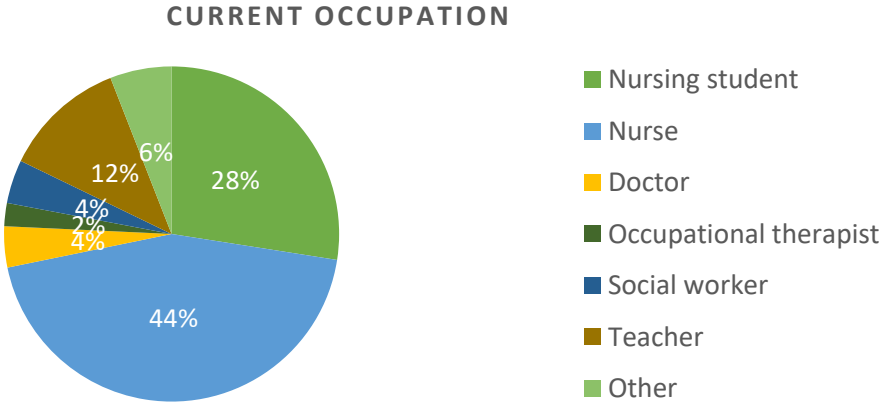


Figure 3 Distribution of overall participants by current occupation.

Regarding professional experience in patient care, the participants demonstrated varied levels. Almost **20%** of the participants had **less than one year of experience** in patient care, suggesting a segment of newer professionals. Approximately **22%** had **between one and five years of experience**, while **17%** had **six to ten years of experience**. The largest group, accounting for **41%**, had **extensive experience of ten years or longer** in patient care, indicating a substantial presence of expert professionals within the study.

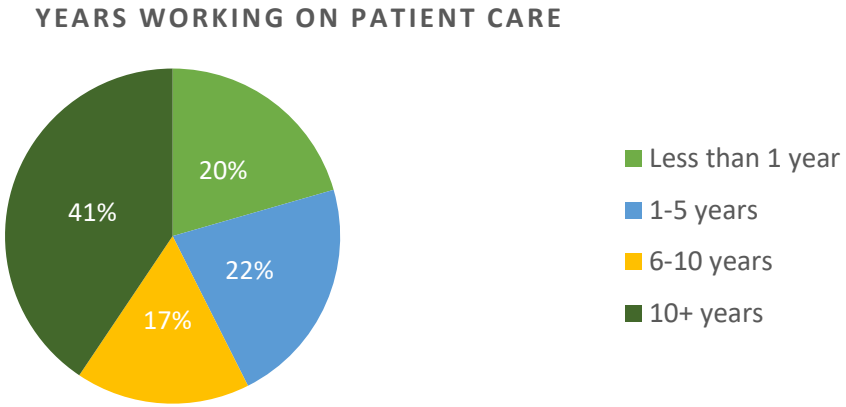


Figure 4 Distribution of overall participants by number of years working on patient care.

Despite the diverse experience levels, only **53%** of all participants reported having specific **experience in geriatric care**, pointing to a potential area for specialised training or focus.

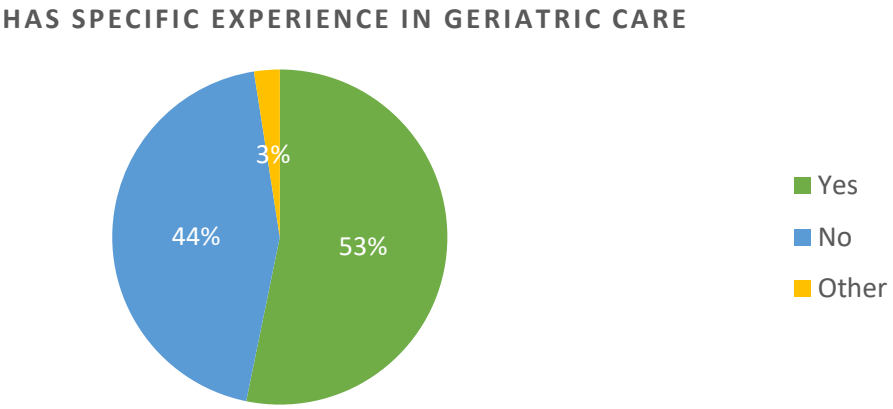


Figure 5 Experience in geriatric care among participants from the four countries included.

The working settings of the participants were also diverse, reflecting various healthcare environments. The majority, **42%,** were engaged in **hospital care**, which is a common setting for patient interaction. A considerable portion, **19%**, worked in **home care**, emphasising community-based services. **Nursing homes** accounted for **9%** of the participants' workplaces, while **6%** were affiliated with **universities, faculties, or nursing schools**, indicating roles in education or academic

research. **Rehabilitation centres** employed **5%** of the participants, and **4%** worked in **long-term care facilities**. These diverse settings underscore the wide range of environments in which healthcare professionals operate and contribute to patient well-being.

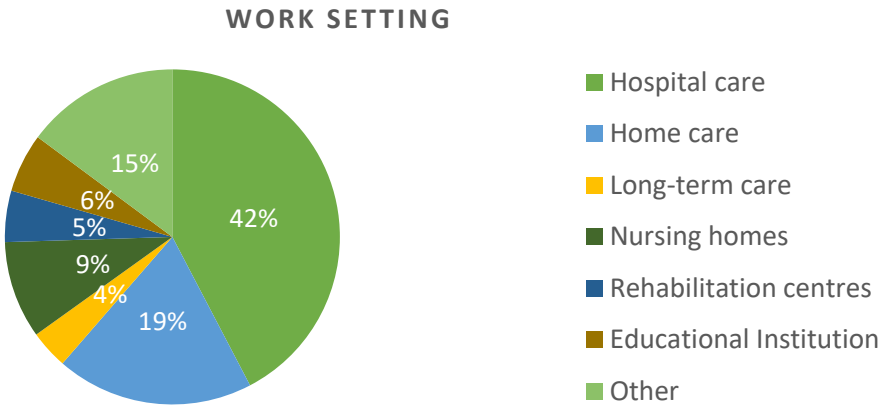


Figure 6 Distribution of work settings among all respondents.

3.1.2 Training and skills

Out of the 404 participants included in this study, only **25%** reported having **received any specific training in geriatrics and gerontology**.

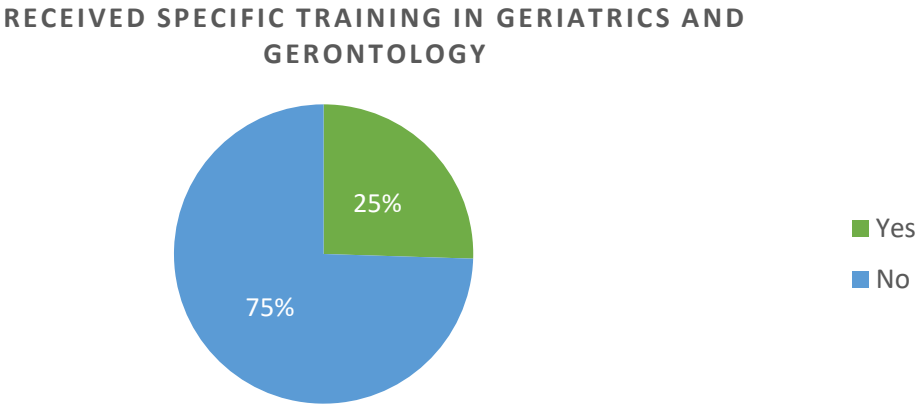


Figure 7 Proportion of overall respondents who received specific training in geriatrics and gerontology.

Among those who did receive such training, a majority, **52%, considered the training sufficient** to effectively manage the challenges associated with the older population. Another **39% found the training partially sufficient**, while a smaller proportion, **9%, indicated that the training was inadequate** for addressing the specific needs and particularities of this demographic.

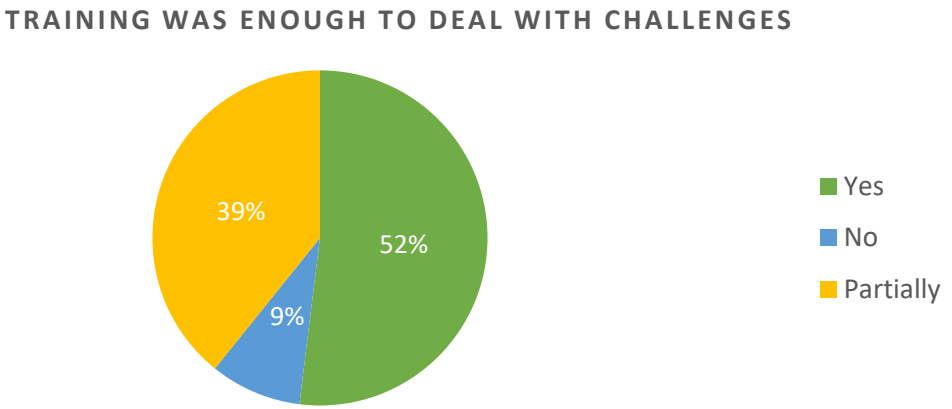


Figure 8 Overall respondents' perception of whether their training was sufficient to deal with challenges.

These participants reported several key topics as being covered, with varying levels of emphasis. The most frequently addressed topic was **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (62.1%), followed closely by **Fall Prevention, Mobility, and Rehabilitation** (61.2%) and **Ageing Mechanisms and Physiological Changes** (58.3%). **Dementia and Mental Health** was covered in 56.3% of cases, while **Nutrition, Hydration, and Wound Care** featured in 50.5% of the training. Other prominent areas included **Chronic Disease Management and Preventive Care in Older Adults** (49.5%), **Caregiver Support, Family Dynamics, and Social Support** (47.6%), as well as **Communication with Older Adults and Families**, **Comprehensive Geriatric Assessment and Intervention**, and **Medication Management, Polypharmacy, and Drug Interactions**, each reported by 44.7% of participants. **End-of-Life and Palliative Care** was included in 40.8% of trainings. Less commonly addressed topics were **Geriatric Nursing, Mental Health, and Pain Management** (35.9%), **Ethical, Legal Issues, and Person-Centred Care** (34.0%), **Technologies for Supporting Geriatric Care** (24.3%), and **Green Policies, Sustainability, and Community Engagement**, which was the least frequently covered (11.7%).

Table 1 Topics covered during overall participants training.

Which topics were covered during the training?	%
Active ageing, quality of life, and role of older adults in society	62.1
Fall prevention, mobility, and rehabilitation	61.2
Ageing mechanisms and physiological changes	58.3

Dementia and mental health	56.3
Nutrition, hydration, and wound care	50.5
Chronic disease management and preventive care in older adults	49.5
Caregiver support, family dynamics, and social support	47.6
Communication with older adults and families	44.7
Comprehensive geriatric assessment and intervention	44.7
Medication management, polypharmacy, and drug interactions	44.7
End-of-life and palliative care	40.8
Geriatric nursing, mental health, and pain management	35.9
Ethical, legal issues, and person-centred care	34.0
Technologies for supporting geriatric care	24.3
Green policies, sustainability, and community engagement	11.7

Conversely, several participants identified notable gaps in their training in geriatrics and gerontology. The most frequently reported omission was **Green Policies, Sustainability, and Community Engagement**, cited by 50.5% of respondents. This was followed by **Technologies for Supporting Geriatric Care** (33.0%) and **Ethical, Legal Issues, and Person-Centred Care** (32.0%). Other areas perceived as insufficiently addressed included **Caregiver Support, Family Dynamics, and Social Support** (21.4%), **Dementia and Mental Health** (17.5%), and **End-of-Life and Palliative Care** (16.5%). Additionally, 14.6% of participants reported gaps in both **Comprehensive Geriatric Assessment and Intervention** and **Medication Management, Polypharmacy, and Drug Interactions**. **Communication with Older Adults and Families** (13.6%) and **Geriatric Nursing, Mental Health, and Pain Management** (12.6%) were also mentioned as lacking. Fewer participants reported insufficient coverage in **Nutrition, Hydration, and Wound Care** (9.7%), **Ageing Mechanisms and Physiological Changes** (8.7%), **Chronic Disease Management and Preventive Care in Older Adults** (8.7%), and **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (7.8%). **Fall Prevention, Mobility, and Rehabilitation** was the least reported gap, noted by only **1.9%** of respondents.

Table 2 Training topics identified as missing by overall participants.

What skills do you think were lacking in this training?	**%**
Green policies, sustainability, and community engagement	50.5
Technologies for supporting geriatric care	33.0
Ethical, legal issues, and person-centred care	32.0
Caregiver support, family dynamics, and social support	21.4
Dementia and mental health	17.5
End-of-life and palliative care	16.5
Comprehensive geriatric assessment and intervention	14.6

Medication management, polypharmacy, and drug interactions	14.6
Communication with older adults and families	13.6
Geriatric nursing, mental health, and pain management	12.6
Nutrition, hydration, and wound care	9.7
Ageing mechanisms and physiological changes	8.7
Chronic disease management and preventive care in older adults	8.7
Active ageing, quality of life, and role of older adults in society	7.8
Fall prevention, mobility, and rehabilitation	1.9

Regarding specialised training, 26% of all participants in the study had received specific training focused on caring for individuals with dementia.

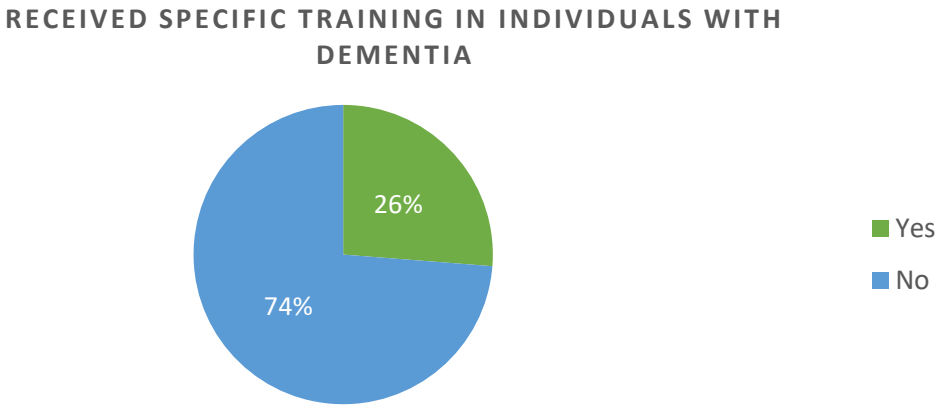


Figure 9 Proportion of overall individuals who received specific training in individuals with dementia.

Of this subgroup, **31%** considered their **training fully sufficient to address** the complexities of dementia care. A larger proportion, **56%**, found their **training partially sufficient**, indicating some preparedness but also areas for improvement. Conversely, **13%** reported that their **training was entirely insufficient** to meet the demands of caring for individuals with dementia.

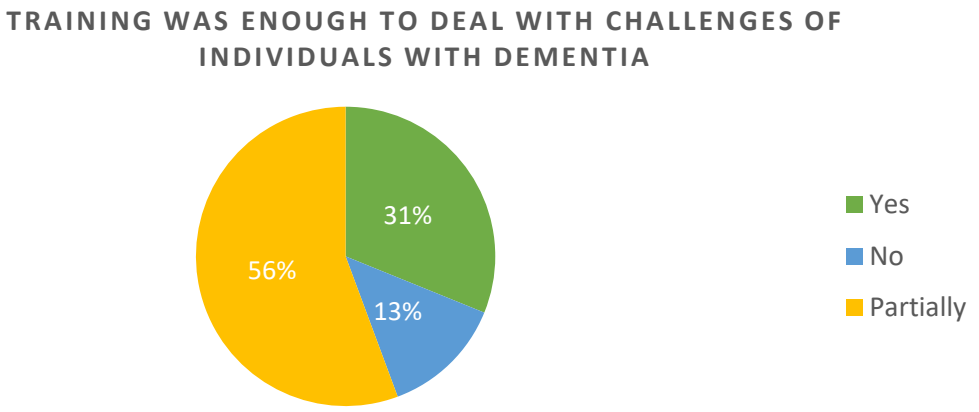


Figure 10 Perceptions of the overall individuals if their training was enough to deal with the individuals with dementia.

Finally, the study assessed the participants' confidence levels across various aspects of dementia care. The areas in which participants expressed the highest confidence were **Providing Family Support and Education** (51.5%) and **Managing Behavioural and Psychological Symptoms** (38.4%). **Early Diagnosis and Management Strategies** garnered confidence from 31.9% of participants, while **Communication Strategies for Individuals with Cognitive Decline** was an area of confidence for 28.0%. **Ethical Issues in Dementia Care** and **End-of-Life Care in Dementia** were areas where participants reported lower confidence, at 25.0% and 27.0% respectively.

Table 3 Aspects of dementia care in which overall participants reported confidence.

What aspects of dementia do you feel confident about?	%
Providing family support and education	51.5
Managing behavioural and psychological symptoms	38.4
Early diagnosis and management strategies	31.9
Communication strategies for individuals with cognitive decline	28.0
End-of-life care in dementia	27.0
Ethical issues in dementia care	25.0

The biggest challenges that these participants encounter in the care of individuals with dementia are **Lack of support structures** (reported by 59.4%), **Insufficient training** (reported by 50.0%), **Difficulties communicating with individuals with dementia** (reported by 50.5%) **Time constraints** (reported by 42.6%) and **Managing advanced disease stages** (reported by 41.3%).

Table 4 Challenges that overall participants reported within the care of individuals with dementia.

What challenges do you encounter in the care of individuals with dementia?	%
Lack of support structures	59.4
Difficulties communicating with individuals with dementia	50.5
Insufficient training	50.0
Time constraints	42.6
Managing advanced disease stages	41.3

From all, 56% of the participants work with older adults in their daily practice.

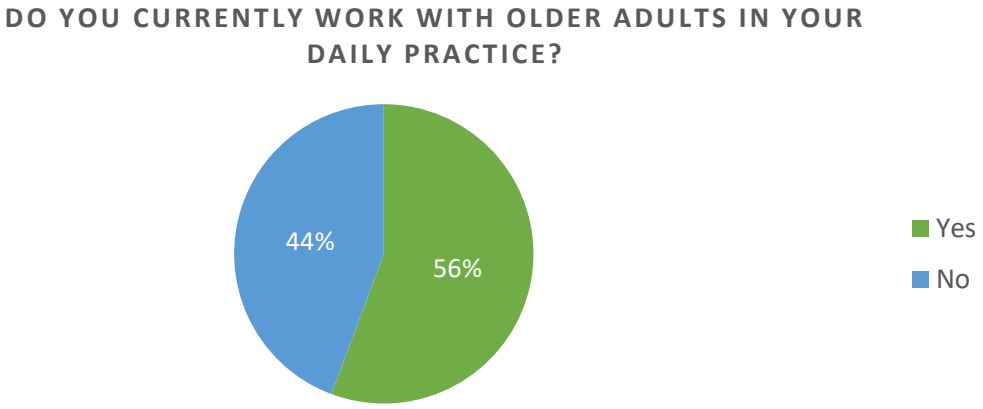


Figure 11 Proportion of overall individuals who work daily with older adults.

Their knowledge on some topics regarding geriatric care was analysed. The results present participants' self-reported knowledge across ten geriatric-related topics. Overall, the results suggest a moderate to low level of knowledge in most areas, with only a few topics showing a concentration of responses in the higher categories. Topics like **Dementia**, **Mental Health**, and **Integrated Care** had the highest percentage of participants reporting a good or very good understanding (levels 3 and 4). In contrast, **Green Policies** stood out with the highest proportion of participants indicating no or very low knowledge (50.5% in levels 0 and 1). **Fall prevention and mobility** also revealed a concerning gap, with over 40% of participants reporting low knowledge. These findings highlight specific areas, such as green policies and mobility, where targeted educational interventions may be most needed.

Table 5 Participants self-reported knowledge levels across topics related to ageing and care.

What is your current level of knowledge about the following topics?					
	1	2	3	4	5
Chronic disease management	7.5	10.6	33.4	31.4	17.1
Comprehensive geriatric assessment	17.8	19.0	29.8	23.3	10.0
Dementia	8.0	20.4	41.2	20.6	9.8

Fall prevention and mobility	8.5	7.5	25.3	32.1	26.6
Geriatric nursing	12.3	16.8	30.3	25.1	15.5
Green Policies	18.3	32.2	36.4	9.0	4.0
Integrated care	11.8	15.3	35.3	26.1	11.5
Mental health	8.5	13.3	41.1	24.3	12.8
Pain management	10.0	15.0	30.3	27.8	16.8
Palliative care	15.5	19.8	26.6	24.1	14.0
1 – No Knowledge; 3 – Average Knowledge: 5 – Deep Knowledge					

3.1.3 Needs and shortcomings

When asked which themes should receive greater emphasis in geriatric and gerontological nursing studies, participants highlighted a broad range of topics, suggesting important areas for curricular enhancement. **Dementia and Mental Health** emerged as the most pressing need, identified by 58.7% of respondents, followed closely by **Active Ageing, Quality of Life, and Role of Older Adults in Society** (55.9%) and **End-of-Life and Palliative Care** (49.3%). Other key areas seen as deserving more attention included **Caregiver Support, Family Dynamics, and Social Support** (46.0%), **Communication with Older Adults and Families** (45.8%), and **Comprehensive Geriatric Assessment and Intervention** (44.8%). Topics such as **Medication Management, Polypharmacy, and Drug Interactions** (44.6%), **Ethical, Legal Issues, and Person-Centred Care** (43.1%), and **Nutrition, Hydration, and Wound Care** (42.6%) were also considered important to strengthen. Additional suggestions included **Geriatric Nursing, Mental Health, and Pain Management** (42.3%), **Chronic Disease Management and Preventive Care in Older Adults** (41.3%), and **Technologies for Supporting Geriatric Care** (40.1%). While **Fall Prevention, Mobility, and Rehabilitation** (36.9%) and **Ageing Mechanisms and Physiological Changes** (34.7%) were somewhat less prioritised, they still garnered significant interest. **Green Policies, Sustainability, and Community Engagement**, although ranked lowest (28.5%), were nevertheless considered a relevant theme for future inclusion in training programs.

Table 6 Topics identified by overall participants as needing more emphasis in geriatric and gerontological nursing studies.

What are the main themes you think should be covered more in geriatric and gerontological nursing studies?	%
Dementia and mental health	58.7
Active ageing, quality of life, and role of older adults in society	55.9
End-of-life and palliative care	49.3
Caregiver support, family dynamics, and social support	46.0
Communication with older adults and families	45.8
Comprehensive geriatric assessment and intervention	44.8
Medication management, polypharmacy, and drug interactions	44.6

Ethical, legal issues, and person-centred care	43.1
Nutrition, hydration, and wound care	42.6
Geriatric nursing, mental health, and pain management	42.3
Chronic disease management and preventive care in older adults	41.3
Technologies for supporting geriatric care	40.1
Fall prevention, mobility, and rehabilitation	36.9
Ageing mechanisms and physiological changes	34.7
Green policies, sustainability, and community engagement	28.5

When asked "What improvements do you suggest for training programs in geriatric and gerontological nursing?" participants from Croatia, Greece, the Netherlands, and Portugal highlighted several key areas for improving geriatric and gerontological nursing training. A strong emphasis was placed on expanding **practical training opportunities**, including more clinical hours, hands-on experience, and simulation-based learning in settings that provide care for older adults. Many respondents stressed the need for more comprehensive and dedicated content on **dementia and mental health**, along with better preparation for **communication with people living with dementia**. **Palliative and end-of-life care** was also identified as a priority, with suggestions to distinguish it clearly from general geriatric care and ensure its inclusion as a basic component of all training programs. The **integration of technology** into older care was frequently recommended, particularly regarding the use of telemedicine, assistive devices, and digital tools that support autonomy and quality of life. Respondents also called for a stronger focus on **person-centred and holistic approaches**, emphasising emotional support, family involvement, and relationship-based models of care. Additional suggestions included aligning educational content with real-world practice, offering **specialised and modular courses**, and ensuring that training is both **accessible and formally recognised**. Finally, participants pointed to the need for **more staff**, improved working conditions, and stronger **institutional support** to enhance the quality and impact of gerontological nursing education.

Participants were asked "Do you consider that scientific research on geriatric and gerontological nursing is being sufficiently encouraged?". From all only 27% answered "Yes".

Among those who answered "yes" to the question about whether scientific research in geriatric and gerontological nursing is being sufficiently encouraged, the responses revealed a more nuanced reality. While some participants expressed clear agreement, noting that **there is increasing attention to this field**, especially in the context of **an ageing population** and the **growing complexity of care**, others were less certain or gave hesitant affirmations. A few respondents highlighted the **availability of funding** and the existence of **interesting ongoing projects**, as well as the growing recognition of the **burdens placed on professionals and informal caregivers**, which has sparked greater research interest. However, many expressed **uncertainty or a lack of awareness**, indicating

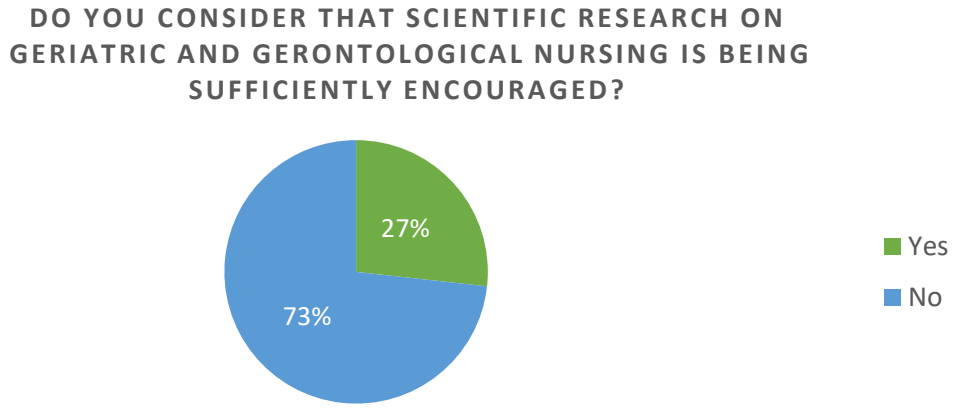


Figure 12 Proportion of individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged.

they were not familiar enough with the field to give a definitive answer. Some pointed out that although research is conducted, particularly during internships, **it does not always focus specifically on older adults** or address the core topics of geriatric and gerontological care. One respondent noted that despite the appearance of progress, **the actual focus of much of the current research may not align with the field's real needs**, with **an over-reliance on literature reviews** and **too few primary studies**. Taken together, these comments suggest that while **there is some encouragement for research in this area**, its **depth, focus, and visibility remain uneven** and still require further development to **meet the complex demands of ageing populations**.

Among those who responded negatively, the overall sentiment reflects a strong perception that **geriatric and gerontological nursing remains undervalued and under-researched**. Many participants pointed out that **there is little institutional, political, or financial support** for research in this area, and that it is often seen as **less prestigious or attractive compared to other specialities**. Several responses stressed that **older adults are still perceived as a burden**, both in healthcare systems and in society at large, which contributes to the lack of motivation to invest in their care. There were frequent mentions of **insufficient academic programs and training**, particularly in practical and applied settings, and that **research is often confined to academic requirements** such as master's or doctoral theses, with limited real-world impact. Some highlighted the **absence of specialised research funding**, the **lack of visibility and recognition**, and the **scarce inclusion of this field in national research priorities or health agendas**. Concerns were also raised about **poor dissemination of existing research**, **low interest from professionals**, and the **minimal integration of evidence into policy or care models**. Additionally, a few respondents noted that **research in this area tends to rely on outdated or repetitive approaches**, lacking innovation and failing to address key issues like **autonomy, quality of life, or caregiver support**. Overall, the responses suggest a pressing need for

greater awareness, dedicated funding, institutional commitment, and cultural change to ensure that the ageing population is adequately supported by robust, meaningful scientific research.

3.1.4 Development opportunities

The training needs expressed by participants reveal a clear interest in deepening knowledge in **dementia and mental health (49.5%)**, which emerged as the most prioritised area for further education. Closely following are **ethical and legal issues, and person-centred care (39.6%)**, and **end-of-life and palliative care (39.6%)**, highlighting concerns related to values, autonomy, and quality of care in advanced stages of life. **Active ageing, quality of life, and the role of older adults in society (39.4%)**, along with **comprehensive geriatric assessment and intervention (38.6%)**, also ranked high, reflecting a wish to adopt more holistic and proactive approaches. Participants further expressed interest in **technologies for supporting geriatric care (38.4%)**, **caregiver support, family dynamics, and social support (36.6%)**, and **communication with older adults and families (35.1%)**, suggesting a recognition of the complex social, emotional, and technological dimensions of care. Though slightly less prioritised, areas such as **chronic disease management and preventive care in older adults (33.4%)**, **green policies, sustainability, and community engagement (33.2%)**, and **medication management, polypharmacy, and drug interactions (32.4%)** still received notable attention. More clinically focused topics, such as **geriatric nursing, mental health, and pain management (30.0%)**, **ageing mechanisms and physiological changes (29.7%)**, **nutrition, hydration, and wound care (28.0%)**, and **fall prevention, mobility, and rehabilitation (22.8%)** were also considered relevant. Overall, the results underscore a growing awareness of the multifaceted nature of geriatric care and the need for **interdisciplinary, ethically grounded, and person-focused training** that responds to the current and future demands of an ageing population.

Table 7 Areas in which overall participants would like to improve through training.

What areas would you like to improve through training in geriatrics and gerontology?	%
Dementia and mental health	49.5
Ethical, legal issues, and person-centred care	39.6
End-of-life and palliative care	39.6
Active ageing, quality of life, and role of older adults in society	39.4
Comprehensive geriatric assessment and intervention	38.6
Technologies for supporting geriatric care	38.4
Caregiver support, family dynamics, and social support	36.6
Communication with older adults and families	35.1

Chronic disease management and preventive care in older adults	33.4
Green policies, sustainability, and community engagement	33.2
Medication management, polypharmacy, and drug interactions	32.4
Geriatric nursing, mental health, and pain management	30.0
Ageing mechanisms and physiological changes	29.7
Nutrition, hydration, and wound care	28.0
Fall prevention, mobility, and rehabilitation	22.8

When asked about preferred training formats in geriatrics and gerontology, the majority of participants indicated a preference for **in-person training (54.0%)**, suggesting a continued value placed on face-to-face interaction, hands-on learning, and opportunities for direct engagement with peers and instructors. **Hybrid formats (33.7%)** were also well received, reflecting a growing openness to blended approaches that combine the benefits of physical presence with the flexibility of digital tools. Meanwhile, **online training (32.9%)** was selected by nearly a third of respondents, highlighting the relevance of accessible and self-paced learning, especially for professionals managing demanding schedules or located in remote areas. These results point to the importance of offering **diverse and adaptable training modalities** to effectively meet the varied needs and preferences of healthcare professionals in the field of ageing.

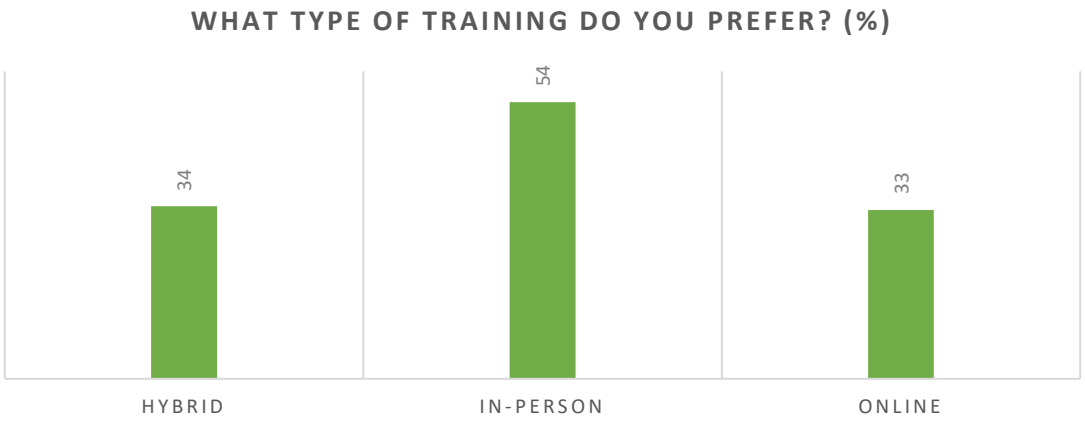


Figure 13 Proportion of individuals who prefer different types of training.

When considering the most effective formats for professional development in geriatrics and gerontology, participants strongly favoured **experiential learning (53.0%)**, underscoring the value of learning through direct experience and real-world application. **Practical workshops (47.3%)** and **clinical simulation (44.3%)** were also highly rated, highlighting the importance of hands-on, practice-based approaches in building confidence and clinical skills. **Theoretical-practical courses (43.8%)** were appreciated for combining conceptual understanding with applied components. Less frequently selected, though still relevant, were **coaching to support learning (35.4%)**, **interactive online classes**

(26.7%), and **training games (25.7%)**, suggesting that while digital and innovative methods are useful, they are most effective when complementing more immersive and experience-based training formats.

Table 8 Prefered training formats for professional development reported by participants.

What format of training do you consider most effective for your professional development?	%
Experiential learning	53.0
Practical workshops	47.3
Clinical simulation	44.3
Theoretical-practical courses	43.8
Coaching to support learning	35.4
Interactive online classes	26.7
Training games	25.7

When asked about the amount of time they could realistically dedicate to continuing education in geriatrics and gerontology, the majority of participants indicated a preference for short, manageable commitments. A substantial **69.6%** stated they **could dedicate 1 to 2 hours per week**, while **25.7%** reported being able to allocate **3 to 5 hours**. Only **6.2%** said they **could commit more than 5 hours weekly**. These findings highlight the need for flexible and concise training formats that can be easily integrated into the busy routines of healthcare professionals.

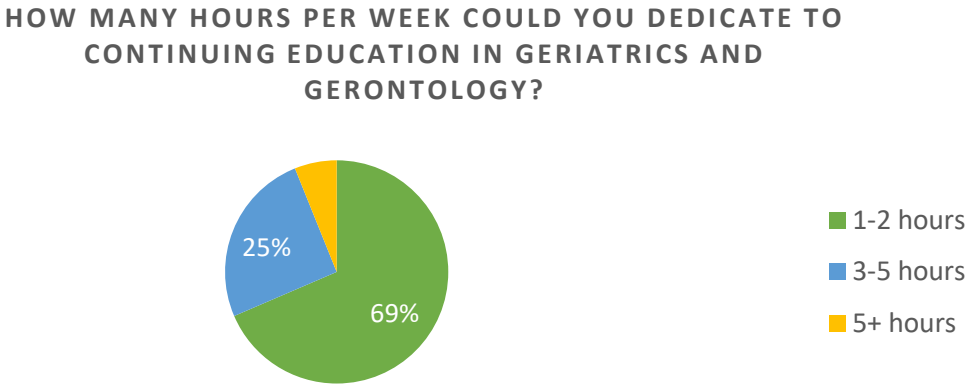


Figure 14 Participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology.

When asked about their availability and willingness to participate in training outside regular work hours, **the majority of participants (72%)** responded positively, indicating they would be willing to engage in training before or after work or on their days off. In contrast, **28% participants expressed that they would not be available or willing** to do so. This suggests a generally strong motivation among professionals to pursue continuing education, although scheduling flexibility remains an important consideration.

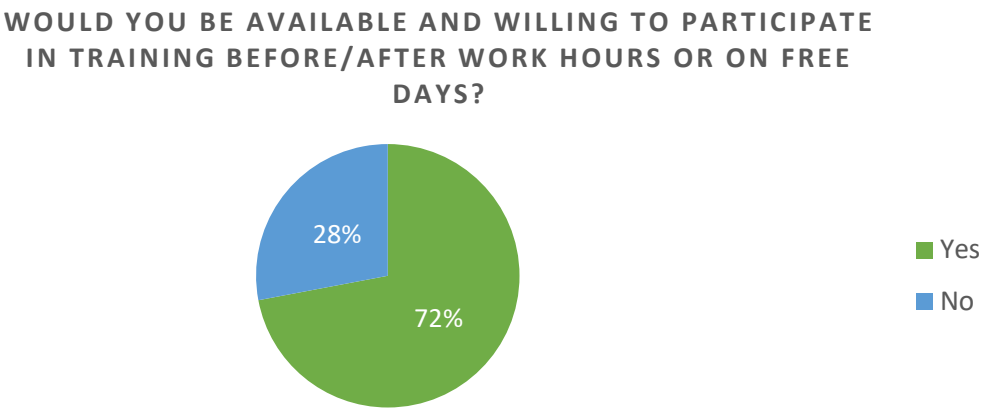


Figure 15 Proportion of participants willing to attend training before or after work hours, or during their free time.

When asked if they would like to receive more ongoing training on geriatric and gerontological care, **a clear majority of 315 participants answered yes**, expressing strong interest in continuing their education in this field. Meanwhile, **89 participants responded no**, indicating less enthusiasm for additional training. This demonstrates a significant demand for further learning opportunities among professionals working with older adults.

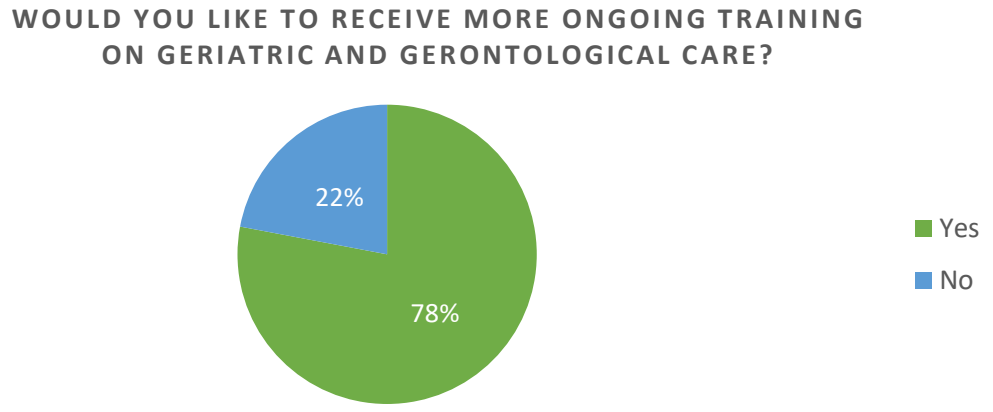


Figure 16 Proportion of participants interested in receiving additional ongoing training in geriatric and gerontological care.

Participants identified several key motivations for pursuing training in geriatrics and gerontology. The strongest driver was an **interest in improving patient outcomes (47.5%)**, followed closely by **personal fulfilment (44.8%)** and **career advancement (40.1%)**. **Professional recognition and expertise (39.4%)** also played an important role in motivating participation. Other factors such as **demographic trends (27.5%)** and **access to better employment opportunities (24.0%)** were less frequently cited, while a **supportive learning environment (20.8%)** was the least mentioned motivation. These results highlight that the primary incentives for training are focused on making a meaningful impact on patient care and personal and professional growth.

Table 9 Factors motivating participants to pursue further specialisation or education in geriatrics.

What factors would motivate you to pursue further specialisation/ education in geriatrics?	%
Interest in improving patient outcomes	47.5
Personal fulfilment	44.8
Career Advancement	40.1
Professional Recognition and Expertise	39.4
Demographic trends	27.5
Access to Better Employment Opportunities	24.0
Supportive Learning Environment	20.8

When asked about the specific areas in which they would like to deepen their knowledge, participants most frequently pointed to **dementia and mental health (46.5%)**, followed by **end-of-life and palliative care (38.4%)**, and **ethical, legal issues, and person-centred care (37.6%)**. Areas such as **technologies for supporting geriatric care (36.1%)**, **comprehensive geriatric assessment and intervention (35.4%)**, and **green policies, sustainability, and community engagement (34.2%)** also received considerable interest. Participants also expressed a desire to further explore **active ageing and the societal role of older adults (33.9%)**, **medication management and polypharmacy (33.4%)**, and **caregiver and family support (30.7%)**. Less frequently selected, though still relevant, were topics like **communication with older adults (29.5%)**, **chronic disease management (29.2%)**, **geriatric nursing and pain management (28.2%)**, **ageing mechanisms (27.5%)**, **nutrition and wound care (22.0%)**, and **fall prevention and rehabilitation (17.8%)**. These responses reflect a broad interest across clinical, psychosocial, and systemic dimensions of geriatric care.

Table 10 Specific areas in which participants wish to deepen their knowledge in geriatric and gerontological care.

In which specific areas would you like to deepen your knowledge?	%
Dementia and mental health	46.5
End-of-life and palliative care	38.4
Ethical, legal issues, and person-centred care	37.6
Technologies for supporting geriatric care	36.1
Comprehensive geriatric assessment and intervention	35.4
Green policies, sustainability, and community engagement	34.2
Active ageing, quality of life, and role of older adults in society	33.9
Medication management, polypharmacy, and drug interactions	33.4
Caregiver support, family dynamics, and social support	30.7
Communication with older adults and families	29.5
Chronic disease management and preventive care in older adults	29.2
Geriatric nursing, mental health, and pain management	28.2
Ageing mechanisms and physiological changes	27.5
Nutrition, hydration, and wound care	22.0
Fall prevention, mobility, and rehabilitation	17.8

The most frequently reported barrier to participating in ongoing training was **lack of time (69.8%)**, highlighting a significant constraint for the majority of respondents. **Cost (38.1%)** was also a notable obstacle, suggesting that financial considerations play an important role in limiting participation. Other reported barriers included **limited access to courses (29.2%)** and **lack of supporting structures (19.1%)**, indicating that logistical and institutional factors also impact professionals' ability to engage in continued education.

Table 11 Participant-reported obstacles to participation in continuing education.

Are there any barriers that prevent you from participating in ongoing training?	%
Lack of time	69.8
Cost	38.1
Limited access to courses	29.2
Lack of supporting structures	19.1

3.1.5 Green policies and sustainability in geriatric care

When asked about their familiarity with green policies and sustainable practices in healthcare, **only 137 participants responded affirmatively**, while **267 reported not being familiar** with these concepts. This indicates that **a significant majority (66%) lack awareness** of sustainability-related strategies in the healthcare context, particularly within geriatric care, suggesting an important gap in knowledge that could be addressed through targeted educational efforts.

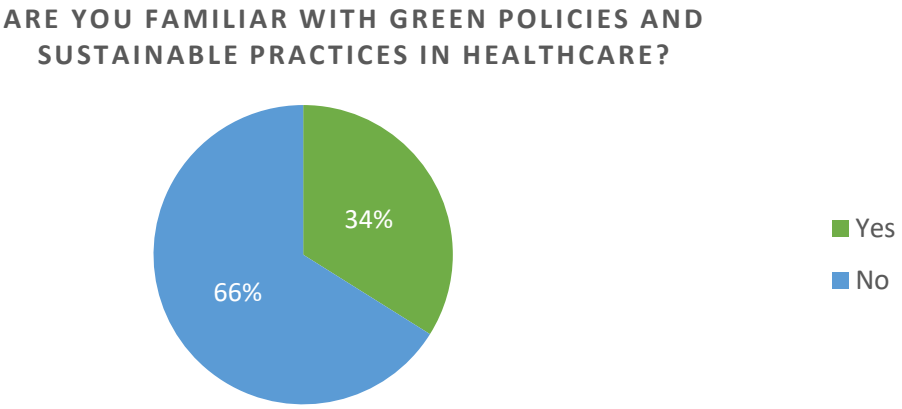


Figure 17 Proportion of individuals who are familiar with green policies and sustainable practices in healthcare.

From those aware with green policies and sustainable practices in healthcare, only **29 participants (21%)** reported having received training on sustainable practices in healthcare, while **108 (79%)** indicated they had not. These results further underscore the **limited exposure to sustainability education** among professionals, reinforcing the need to integrate **green policies and sustainable practices** more explicitly into training programmes in geriatrics and gerontology.

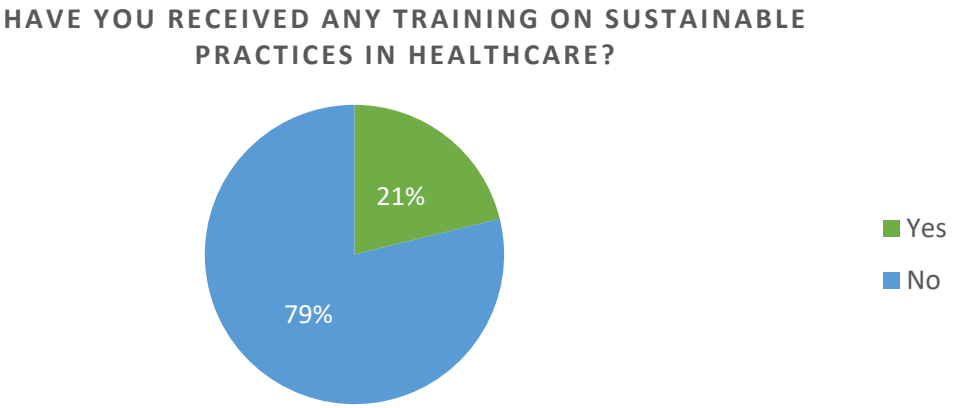


Figure 18 Proportion of individuals who received specific training on sustainable practices in healthcare.

When asked about the application of sustainable practices in their workplace, **69.8%** of participants reported engaging in **recycling materials** such as paper, plastic, or glass. **51.0%** stated they ensure the **safe disposal of hazardous waste**, including diapers, bandages, or other medical waste. Measures to **reduce energy consumption** were mentioned by **37.1%**, while **26.2%** apply **water conservation practices**. Only **17.8%** reported using **environmentally friendly products**, suggesting that while some eco-friendly measures are common, others remain underutilised in geriatric care settings.

Table 12 Participant-reported implementation of environmentally sustainable practices at work.

In your workplace, do you apply any sustainable practices?	%
Recycling materials (e.g., paper, plastic, glass)	69.8
Safe disposal of hazardous waste (e.g., diapers, bandages, medical waste)	51.0
Reducing energy consumption (e.g., efficient lighting, equipment)	37.1
Water conservation measures	26.2
Using environmentally friendly products	17.8

When asked about the challenges faced in implementing sustainable practices in their work environment, **54.0%** of participants identified a **lack of training on green policies** as the main barrier. **42.3%** reported **limited access to eco-friendly resources**, while **35.4%** pointed to **institutional resistance to change**. Additionally, **29.7%** cited the **cost of sustainable alternatives** as a challenge, and **26.2%** mentioned **time constraints**, highlighting the need for systemic support and accessible training to foster more sustainable practices in geriatric care.

Table 13 Challenges faced by participants in implementing sustainable practices at work.

What challenges do you face in implementing sustainable practices in your work environment?	%
Lack of training on green policies	54.0
Limited access to eco-friendly resources	42.3
Institutional resistance to change	35.4
Cost of sustainable alternatives	29.7
Time constraints	26.2

The vast majority of participants (**89.6%**) believe that **incorporating green policies into nursing education is important**, while only **10.4%** responded negatively. This indicates a strong consensus on the relevance of sustainability and environmental responsibility within the professional training of nurses.

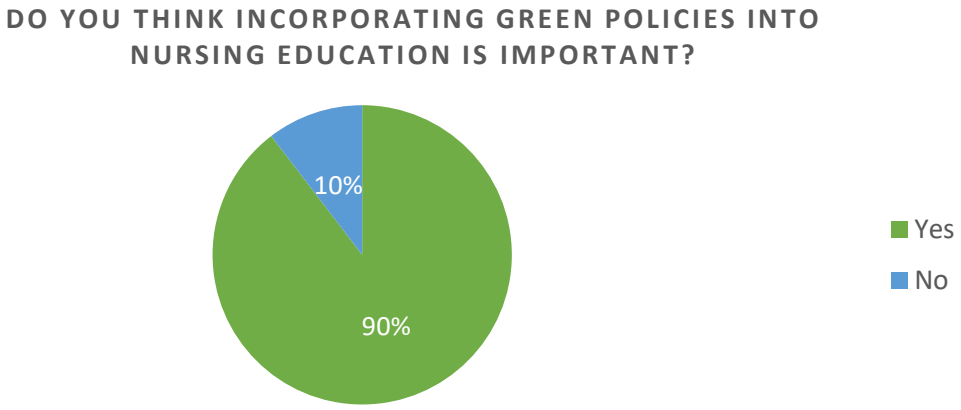


Figure 19 Proportion of individuals who think is important to incorporate green policies into nursing education.

Participants who answered "yes" to the importance of incorporating green policies into nursing education shared a strong consensus on several key themes. Many emphasized the **urgency of the climate crisis**, the **social responsibility of healthcare professionals**, and the **need to promote sustainability in care delivery**. Respondents noted that education in this area can help **foster environmentally conscious behaviours**, **reduce waste and costs**, and **encourage sustainable workplace practices**, such as proper waste management and resource conservation. Several participants linked this topic to the **United Nations Sustainable Development Goals**, highlighting that **nurses play a crucial role in transforming health systems**, and that **change must begin in education**. Many also argued that sustainability should be a **cross-cutting theme throughout all areas of training**, viewing it as both an **ethical and civic duty**. Additionally, some comments pointed out that incorporating green policies into nursing education can also **promote critical thinking, leadership, and innovation** among students and professionals.

Those who answered "no" to incorporating green policies into nursing education mostly felt that these topics are **not directly related** to their core responsibilities. Some expressed that the **curriculum is already full**, with more urgent priorities needing attention. Others believe that while environmental issues are important, the **primary focus of nursing education should remain on clinical care, practical skills, ethics, and patient interaction**, rather than on sustainability topics.

Participants highlighted several key areas where education on sustainability could be most beneficial. The majority emphasized **environmental preservation education for both staff and patients (61.1%)**, closely followed by **safe disposal of hazardous waste (60.6%)**. The **use of eco-friendly materials and products (56.4%)** and **waste management and recycling (49.8%)** were also considered important topics. Additionally, nearly half the participants valued education on **resource conservation (48.8%)** and **reducing energy consumption (45.5%)**, indicating a strong interest in practical, actionable sustainability practices within healthcare settings.

Table 14 Sustainability areas participants believe should be emphasised in geriatric and gerontological care.

In your opinion, what areas of sustainability should be emphasised in geriatric and gerontological care?	%
Environmental preservation education for staff and patients	61.1
Safe disposal of hazardous waste	60.6
Use of eco-friendly materials and products	56.4
Waste management and recycling	49.8
Resource conservation	48.8
Reducing energy consumption	45.5

Participants were asked how confident they felt in safely disposing of hazardous waste commonly used in the care of older adults. The majority reported feeling **somewhat confident (57.9%)** or **very confident (26.5%)**, while **15.6% indicated they were not confident**, highlighting the need for further training and support in this area.

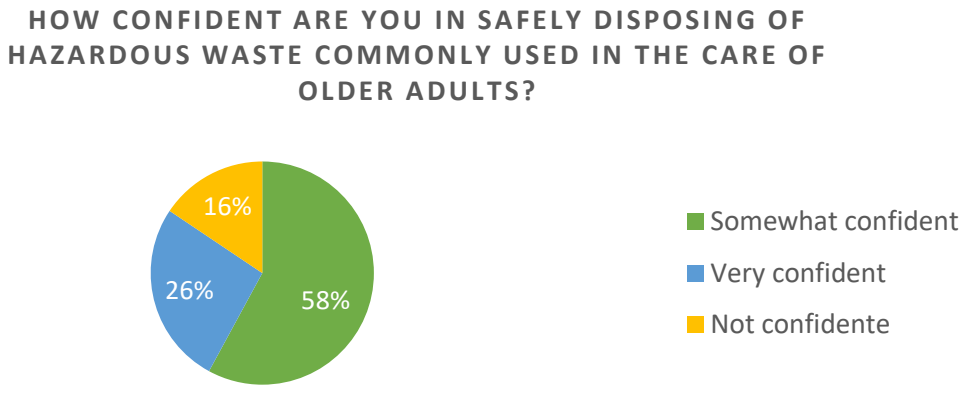


Figure 20 Confidence levels that participants reported in safely disposing hazardous waste commonly used in the care of older adults.

Participants believe several practices could enhance sustainability in the care of older adults. The most supported measure, with **61.9%**, is providing **training on green policies**. Encouraging the **use**

of reusable products was also widely favoured by **55.0%** of respondents. Additionally, improving **waste disposal systems for hazardous materials** was seen as important by **50.2%**, while **implementing more recycling initiatives** and **using renewable energy sources** each garnered support from **46.0%** of participants. These responses reflect a strong interest in both education and practical actions to foster environmental sustainability in geriatric care.

Table 15 Participant-reported strategies to improve environmental sustainability in geriatric care.

What practices do you believe would improve sustainability in the care of older adults?	%
Providing training on green policies	61.9
Encouraging the use of reusable products	55.0
Improving waste disposal systems for hazardous materials	50.2
Implementing more recycling initiatives	46.0
Using renewable energy sources	46.0

A clear majority of participants, **337 out of 404 (83.4%)**, expressed willingness to participate in training programs focused on sustainable healthcare practices. Only **67 (16.6%)** indicated they would not be willing to participate, demonstrating strong overall interest in gaining knowledge and skills related to sustainability in healthcare settings.

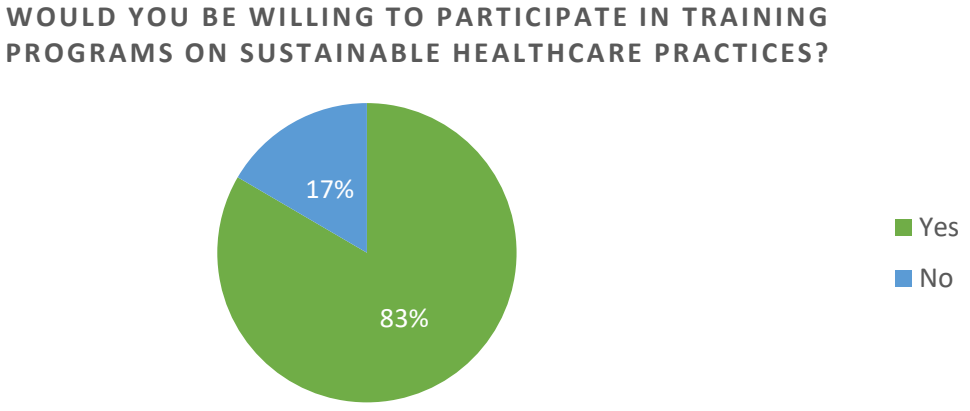


Figure 21 Proportion of individuals who would be willing to participate in training programs on sustainable healthcare practices.

Participants offered diverse suggestions for promoting sustainable practices in geriatric and gerontological nursing. Many emphasised the importance of **designing care environments that promote autonomy, safety, and accessibility** for older adults. Others highlighted the need for **effective planning and waste reduction, especially through improved management of hazardous waste and minimising medication and material waste**. Training and education were recurrent

themes, with calls for **practical and effective lessons on sustainability**, **raising awareness among staff and caregivers**, and **integrating sustainability topics into nursing education**.

Several participants suggested the use of reusable materials, improved recycling systems, and resource conservation practices such as water and energy saving measures. The incorporation of digital tools like electronic records and telemedicine was also mentioned as a way to reduce environmental impact. Organisational support was considered crucial, with ideas about municipal incentives, leadership driving sustainable policies, and ensuring resources are available to implement green initiatives. Overall, there was a strong consensus on combining education, practical action, and institutional commitment to foster sustainability in care for older adults.

3.2 Croatia

3.2.1 Demographics

This study included a total of **102 participants**, with an unbalanced gender distribution where **10%** (n=10) were **male**. The **mean age** of the study population was **39.1 years**, with a **standard deviation** of **12.3 years**, indicating a relatively diverse age range among the participants.

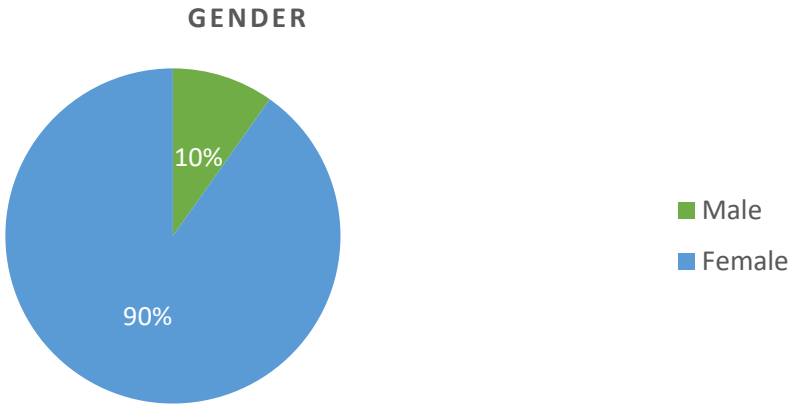


Figure 22 Gender distribution of the Croatian participants (n=102).

Nearly two-thirds of the cohort, nearly **65%**, possessed some form of **higher education**. Specifically, **32%** held a **bachelor's degree**, **28%** had earned a **master's degree**, and **5%** had completed a **PhD**, indicating a highly educated participant group.

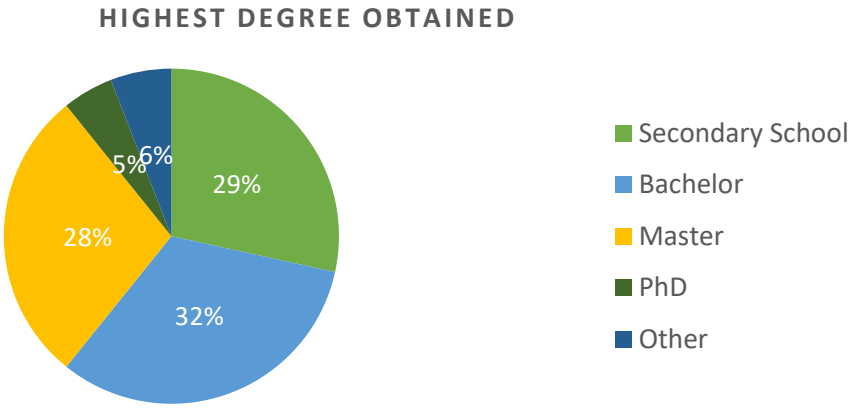


Figure 23 Distribution of Croatian participants by highest degree obtained

The professional background of the **participants** was predominantly within the **healthcare sector**. The sample primarily consisted of **nursing students** (**14%**), **nurses** (**66%**), and **teachers** (**4%**). Other healthcare professionals also contributed to the sample, including **doctors** (**1%**) and **social**

workers (**1%**). The remaining 14% comprised various other types of healthcare workers, ensuring a broad representation of the healthcare workforce.

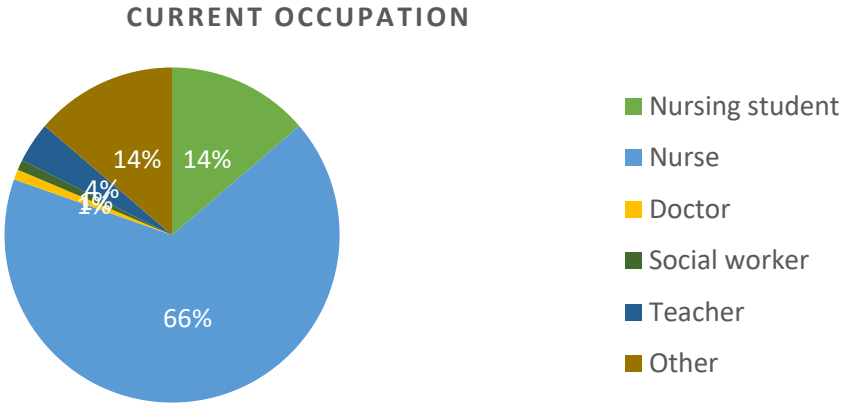


Figure 24 Distribution of Croatian participants by current occupation.

Regarding professional experience in patient care, the participants demonstrated varied levels of tenure. From all, **10%** of the participants had **less than one year of experience** in patient care, suggesting a segment of newer professionals. Approximately **11%** had **between one and five years of experience**, while **18%** had **six to ten years of experience**. The largest group, accounting for **61%**, had **extensive experience of ten years or longer** in patient care, indicating a substantial presence of expert professionals within the study.

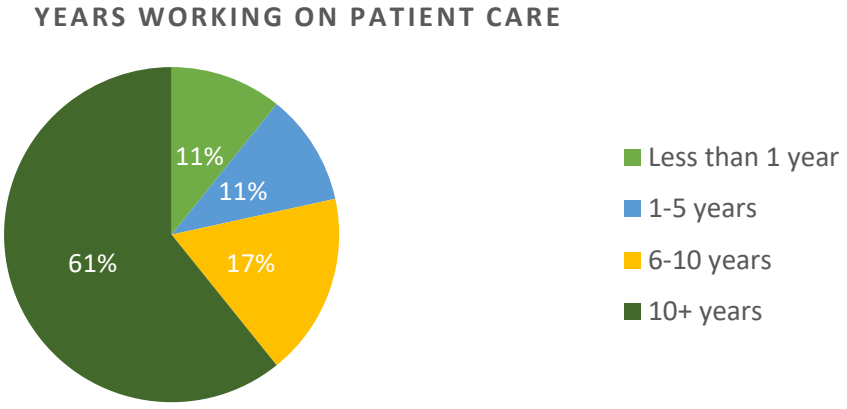


Figure 25 Distribution of Croatian participants by number of years working on patient care.

Despite the diverse experience levels, only **63%** of all participants reported having specific **experience in geriatric care**, pointing to a potential area for specialized training or focus.

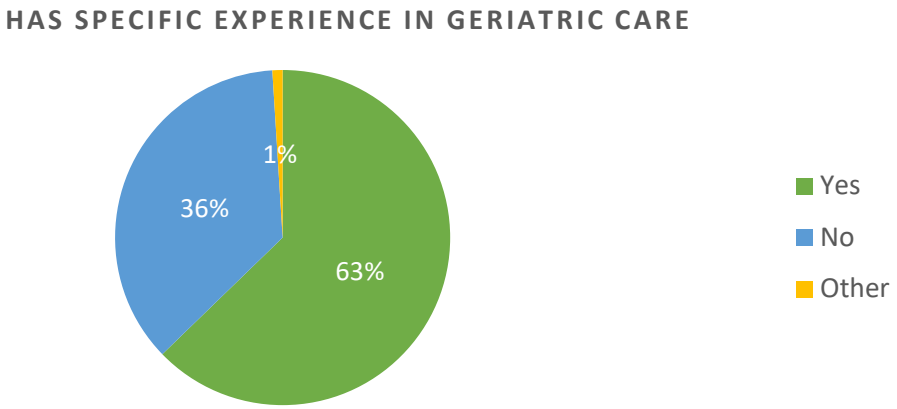


Figure 26 Experience in geriatric care among participants.

The working settings of the participants were also diverse, reflecting various healthcare environments. The majority, **63%,** were engaged in **hospital care**, which is a common setting for patient interaction. A considerable portion, **10%**, worked in **home care**, emphasizing community-based services. **Nursing homes** accounted for **7%** of the participants' workplaces, while **2%** were affiliated with **universities, faculties, or nursing schools**, indicating roles in education or academic research. **Rehabilitation centres** employed **1%** of the participants, and **2%** worked in **long-term care facilities,** while the remaining **15%** worked on **other settings**. These diverse settings underscore the wide range of environments in which healthcare professionals operate and contribute to patient well-being.

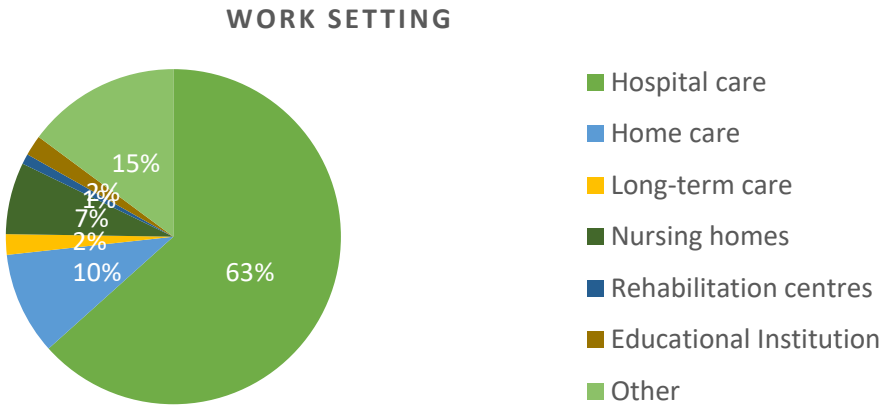


Figure 27 Distribution of work settings among Croatian respondents.

3.2.2 Training and skills

Out of the 102 participants included in this study, only **10%** reported having **received any specific training in geriatrics and gerontology**.

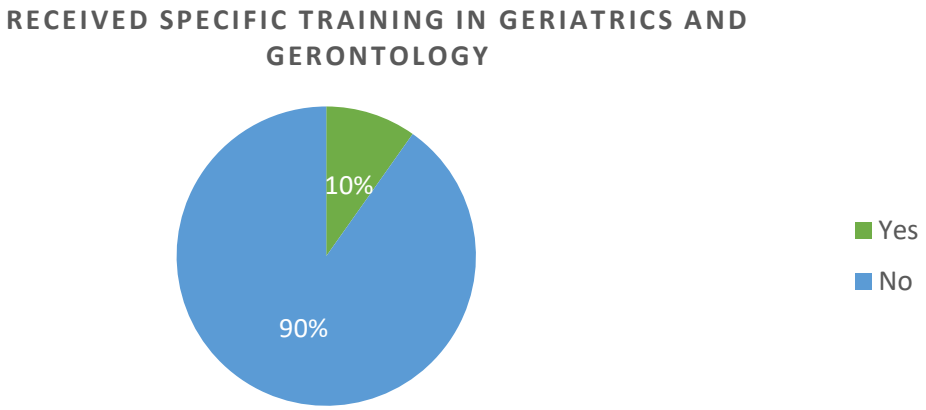


Figure 28 Proportion of overall respondents who received specific training in geriatrics and gerontology.

Among those who did receive such training, only **20%, considered the training sufficient** to manage the challenges associated with the older population effectively. The majority, **70% found the training partially sufficient**, while a smaller proportion, **10%, indicated that the training was inadequate** for addressing the specific needs and particularities of this demographic.

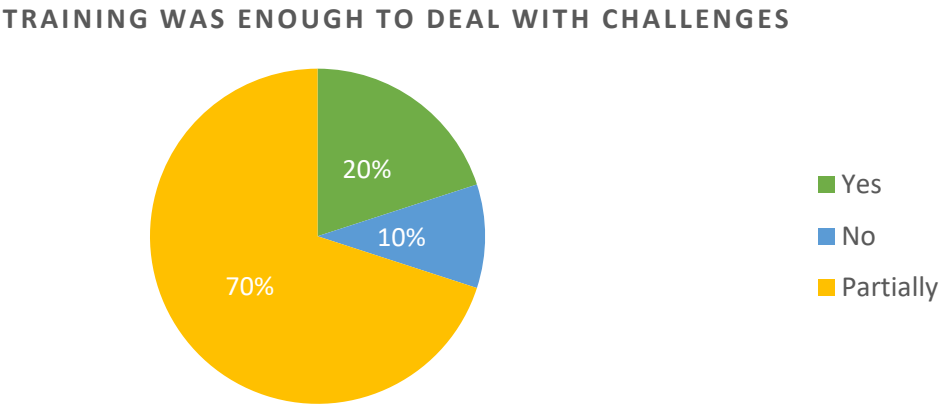


Figure 29 Overall respondents' perception of whether their training was sufficient to deal with challenges.

Among participants who had received training in geriatrics and gerontology, several key topics were reported as being covered, with varying levels of emphasis. The most frequently addressed topic was **Active Ageing, Quality of Life, and the Role of Older Adults in Society** and **Communication with Older Adults and Families** both reported by 100.0% of participants, followed by **Ageing Mechanisms and Physiological Changes** (70.0%) and **Dementia and Mental Health** (60.0%). **Fall Prevention,**

Mobility, and Rehabilitation and **Ethical, Legal Issues, and Person-Centred Care** were both cited by (40.0%), while 30.0% mentioned **Nutrition, Hydration, and Wound Care**, **Caregiver Support, Family Dynamics, and Social Support**, **Comprehensive Geriatric Assessment and Intervention**, **End-of-Life and Palliative Care** and **Technologies for Supporting Geriatric Care.** Other less prominent areas included **Chronic Disease Management and Preventive Care in Older Adults**, as well as **Medication Management, Polypharmacy, and Drug Interactions** and **Green Policies, Sustainability, and Community Engagement** each reported by 20.0% of participants. The least addressed topics were **Geriatric Nursing, Mental Health, and Pain Management** (10.0%).

Table 16 Topics covered during Croatian participants' training.

Which topics were covered during the training?	%
Active ageing, quality of life, and role of older adults in society	100.0
Communication with older adults and families	100.0
Ageing mechanisms and physiological changes	70.0
Dementia and mental health	60.0
Fall prevention, mobility, and rehabilitation	40.0
Ethical, legal issues, and person-centred care	40.0
Nutrition, hydration, and wound care	30.0
Caregiver support, family dynamics, and social support	30.0
Comprehensive geriatric assessment and intervention	30.0
End-of-life and palliative care	30.0
Technologies for supporting geriatric care	30.0
Chronic disease management and preventive care in older adults	20.0
Medication management, polypharmacy, and drug interactions	20.0
Green policies, sustainability, and community engagement	20.0
Geriatric nursing, mental health, and pain management	10.0

Conversely, several participants identified notable gaps in their training in geriatrics and gerontology. The most frequently reported omission was **Green Policies, Sustainability, and Community Engagement**, and **Ethical, Legal Issues, and Person-Centred Care** cited both by 50.0% of respondents. This was followed by **Caregiver Support, Family Dynamics, and Social Support**, **Comprehensive Geriatric Assessment and Intervention** and **End-of-Life and Palliative Care**, mentioned by 30.0%. **Chronic Disease Management and Preventive Care in Older Adults**, **Dementia and Mental Health**, **Medication Management, Polypharmacy, and Drug Interactions**, and **Nutrition, Hydration, and Wound Care** were cited by 20.0% of participants, while **Ageing Mechanisms and Physiological Changes** and **Geriatric Nursing, Mental Health, and Pain Management** were cited by 10.0%. Factors such as **Active Ageing, Quality of Life, and the Role of Older Adults in Society**,

Communication with Older Adults and Families, Fall Prevention, Mobility, and Rehabilitation and **Technologies for Supporting Geriatric Care** were never mentioned as skills missing in participants' training.

Table 17 Training topics identified as missing by Croatian participants.

What skills do you think were lacking in this training?	%
Ethical, legal issues, and person-centred care	50.0
Green policies, sustainability, and community engagement	50.0
Caregiver support, family dynamics, and social support	30.0
Comprehensive geriatric assessment and intervention	30.0
End-of-life and palliative care	30.0
Chronic disease management and preventive care in older adults	20.0
Dementia and mental health	20.0
Medication management, polypharmacy, and drug interactions	20.0
Nutrition, hydration, and wound care	20.0
Ageing mechanisms and physiological changes	10.0
Geriatric nursing, mental health, and pain management	10.0
Active ageing, quality of life, and role of older adults in society	0.0
Communication with older adults and families	0.0
Fall prevention, mobility, and rehabilitation	0.0
Technologies for supporting geriatric care	0.0

Regarding specialised training, only 13% of all participants in the study had received specific training focused on caring for individuals with dementia.

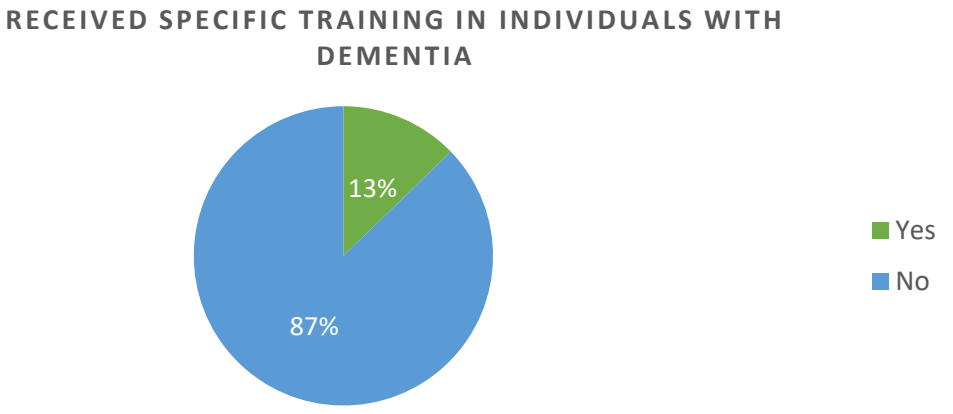


Figure 30 Proportion of Croatian individuals who received specific training in individuals with dementia.

Of this subgroup, **15%** considered their **training fully sufficient to address** the complexities of dementia care. A larger proportion, **77%**, found their **training partially sufficient**, indicating some

preparedness but also areas for improvement. Only **8%** reported that their **training was entirely insufficient** to meet the demands of caring for individuals with dementia.

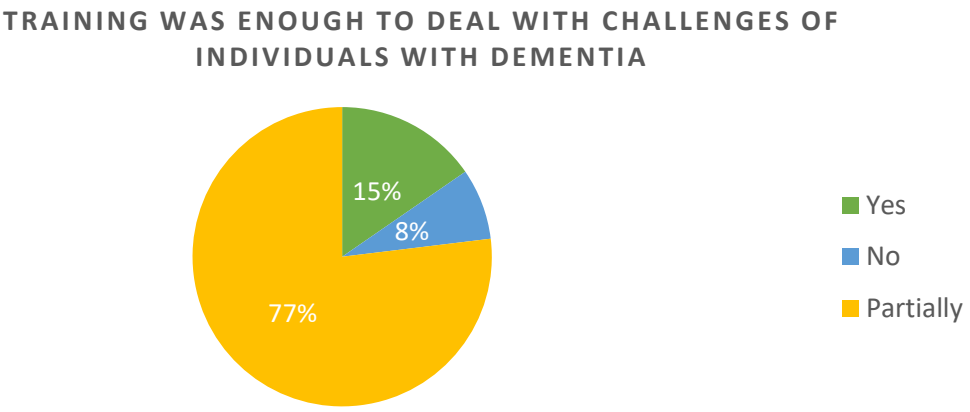


Figure 31 Perceptions of the Croatian individuals if their training was enough to deal with the individuals with dementia.

Finally, the study assessed the participants' confidence levels across various aspects of dementia care. The areas in which participants expressed the highest confidence were **Providing Family Support and Education** (**72.5%**), **End-of-Life Care in Dementia** (**44.1%**) and **Communication Strategies for Individuals with Cognitive Decline** (**41.2%**). Aspects such as **Early Diagnosis and Management Strategies** and **Managing Behavioural and Psychological Symptoms** were mentioned by **37.3%** and **33.3%**, while the least mentioned aspect was **Ethical Issues in Dementia Care** (**24.5%**).

Table 18 Aspects of dementia care in which Croatian participants reported confidence.

What aspects of dementia do you feel confident about?	%
Providing family support and education	72.5
End-of-life care in dementia	44.1
Communication strategies for individuals with cognitive decline	41.2
Early diagnosis and management strategies	37.3
Ethical issues in dementia care	33.3
Managing behavioural and psychological symptoms	24.5

The challenges that these participants encounter in the care of individuals with dementia are **Lack of support structures** (reported by **60.8%**), **Difficulties communicating with individuals with dementia** (reported by **59.8%**), **Insufficient training** (reported by **58.8%**), **Time constraints** (reported by **48.0%**), and **Managing advanced disease stages** (reported by **46.1%**).

Table 19 Challenges that Croatian participants reported within the care of individuals with dementia.

What challenges do you encounter in the care of individuals with dementia?	%
Lack of support structures	60.8
Difficulties communicating with individuals with dementia	59.8
Insufficient training	58.8
Time constraints	48.0
Managing advanced disease stages	46.1

From all, **67%** of the participants work with older adults in their daily practice.

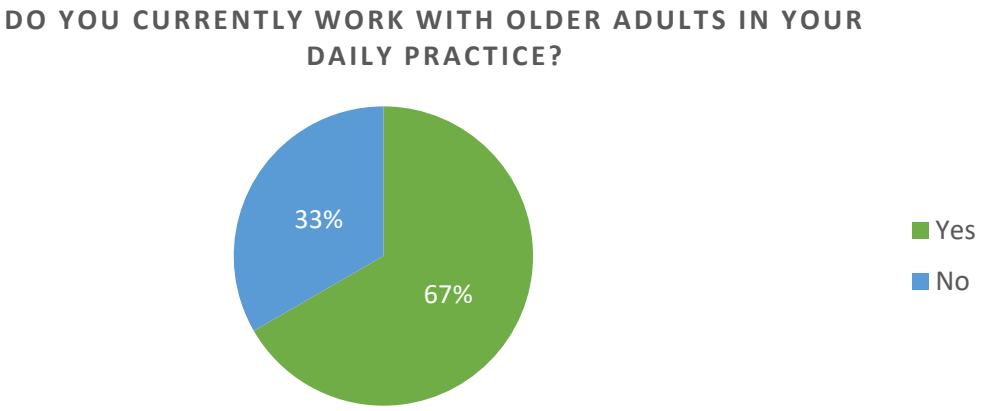


Figure 32 Proportion of Croatian individuals who work daily with older adults.

Participants were asked to self-assess their current level of knowledge across ten topics related to geriatric care. The findings reveal a generally moderate to high level of self-reported knowledge in most areas, with some important variations across topics.

Topics such as **Fall Prevention and Mobility** and **Geriatric Nursing** stood out positively, with over 60% of participants rating their knowledge as good or very good (levels 4 and 5). Similarly, **Chronic Disease Management**, **Dementia**, **Mental Health**, and **Palliative Care** showed relatively strong results, with the majority of respondents placing themselves in the mid to upper knowledge categories (levels 3 to 5).

In contrast, **Green Policies** emerged as the topic with the lowest reported knowledge: more than half of participants (57.8%) rated their understanding as very low or low (levels 1 and 2), and only 8.9% selected levels 4 or 5. **Integrated Care** also showed a notable proportion of participants (37.2%) in the lower knowledge categories, despite a significant share (41.2%) reporting moderate knowledge (level 3).

These results suggest that while participants feel reasonably confident in core clinical areas of geriatric care, there are evident gaps, particularly regarding environmental sustainability in ageing and integrated models of care, where focused educational efforts may be especially beneficial.

Table 20 Self-reported knowledge levels across topics related to ageing and care among Croatian participants.

What is your current level of knowledge about the following topics?					
	1	**2**	**3**	**4**	**5**
Chronic disease management	6.9	6.9	37.3	26.5	22.5
Comprehensive geriatric assessment	9.8	7.8	40.2	33.3	8.8
Dementia	7.8	11.8	49.0	22.5	8.8
Fall prevention and mobility	4.9	5.9	28.4	29.4	31.4
Geriatric nursing	5.9	2.9	27.5	32.4	31.4
Green Policies	33.3	24.5	33.3	6.9	2.0
Integrated care	19.6	17.6	41.2	13.7	7.8
Mental health	7.8	5.9	45.1	27.5	13.7
Pain management	8.8	10.8	29.4	28.4	22.5
Palliative care	10.8	7.8	31.4	30.4	19.6
1 – No Knowledge; 3 – Average Knowledge: 5 – Deep Knowledge					

3.2.3 Needs and shortcomings

When asked which themes should receive greater emphasis in geriatric and gerontological nursing studies, participants highlighted a broad range of topics, suggesting important areas for curricular enhancement. **Dementia and Mental Health** and **End-of-Life and Palliative Care** emerged as the most pressing needs, identified by **63.7%** of respondents, followed closely by **Communication with Older Adults and Families** (**61.8%**), **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (**56.9%**) and **Comprehensive Geriatric Assessment and Intervention** (**54.9%**).

Other key areas seen as deserving more attention included Geriatric Nursing, Mental Health, and Pain Management (49.0%), Nutrition, Hydration, and Wound Care (48.0%), Medication Management, Polypharmacy, and Drug Interactions (47.1%), and Technologies for Supporting Geriatric Care (46.1%). Other points considered important to strengthen were Chronic Disease Management and Preventive Care (44.1%), Ethical, Legal Issues, and Person-Centred Care (43.1%) and Caregiver Support, Family Dynamics, and Social Support (39.2%). Additional suggestions included Fall Prevention, Mobility, and Rehabilitation (35.3%), Green Policies, Sustainability, and Community Engagement (33.3%), and Ageing Mechanisms and Physiological Changes (29.4%), however those were somewhat less prioritised, they still garnered significant interest.

Table 21 Topics identifies by Croatian participants as needing more emphasis in geriatric and gerontological nursing studies.

What are the main themes you think should be covered more in geriatric and gerontological nursing studies?	%
Dementia and mental health	63.7
End-of-life and palliative care	63.7
Communication with older adults and families	61.8
Active ageing, quality of life, and role of older adults in society	56.9
Comprehensive geriatric assessment and intervention	54.9
Geriatric nursing, mental health, and pain management	49.0
Nutrition, hydration, and wound care	48.0
Medication management, polypharmacy, and drug interactions	47.1
Technologies for supporting geriatric care	46.1
Chronic disease management and preventive care in older adults	44.1
Ethical, legal issues, and person-centred care	43.1
Caregiver support, family dynamics, and social support	39.2
Fall prevention, mobility, and rehabilitation	35.3
Green policies, sustainability, and community engagement	33.3
Ageing mechanisms and physiological changes	29.4

Participants from Croatia highlighted the need to enhance geriatric and gerontological nursing training through increased **hands-on experience**, particularly in care homes and dementia settings, emphasising the importance of **practical skills** and direct interaction with older adults. They called for more **comprehensive content**, with clearer **distinctions between geriatric and palliative care**, and greater focus on **dementia-related issues** such as behavioural symptoms, emotional support, and effective communication. The **quality of teaching** was also a concern, with suggestions to involve experienced educators and use **simulations** to connect theory with practice. Respondents stressed the importance of **improving the image of geriatric care** among younger nurses, addressing **stigma**, and offering **better working conditions and salaries**. Some also recommended the integration of **digital tools**, including electronic records and assistive technologies, to modernise both training and care delivery. Overall, Croatian participants advocated for **applied, specialised, and well-supported training** that aligns with the **real-world demands** of caring for older adults.

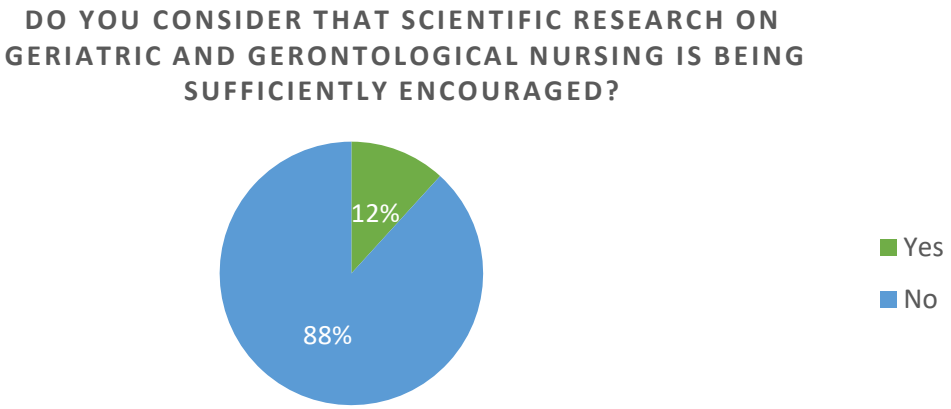


Figure 33 Proportion of individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged.

Participants were asked "Do you consider that scientific research on geriatric and gerontological nursing is being sufficiently encouraged?". From all only **12%** answered "**Yes**".

Among those who answered "yes" to the question about whether scientific research in geriatric and gerontological nursing is being sufficiently encouraged, the responses revealed a more nuanced reality.

Participants from Croatia acknowledged the growing relevance of scientific research in geriatric and gerontological nursing, particularly due to the increasing proportion of older adults in the population. They emphasised the **need to collect scientific evidence that can be applied to develop specific areas of nursing practice**, highlighting the importance of translating research findings into practical improvements. This reflects a recognition that **research should not only grow in quantity but also in applicability**, aiming to directly support the advancement of geriatric care in clinical and community settings.

Among those who responded negatively, Croatian participants expressed concerns that research in geriatric and gerontological nursing is **not receiving adequate attention or resources**. They emphasised that this field often lacks **financial investment and professional support** and is not prioritised to the same extent as other medical areas, despite the **growing need for older care**. Several noted that there is **insufficient collaboration between healthcare systems and long-term care institutions**, which hampers efforts to improve care through evidence-based approaches. Additionally, respondents pointed out the **lack of specialised programs** and **limited visibility of research efforts**, which contribute to the overall perception that the topic is undervalued. More systematic efforts and targeted funding were seen as essential to **enhance research, improve the quality of life for older adults**, and ensure that findings are practically applicable in care settings.

3.2.4 Development opportunities

The training needs identified by participants highlight a strong desire to deepen knowledge in **dementia and mental health** (**62.7%**), which stands out as the top priority for further education. This is closely followed by areas focusing on **quality of life and social participation**, such as **active ageing and the role of older adults in society** (**53.9%**), as well as **ethical and legal issues, person-centred care** (**52.0%**), and **end-of-life and palliative care** (**52.0%**), indicating significant concern for values, autonomy, and quality in the final stages of life. **Communication with older adults and their families** (**51.0%**) also emerged as a key area, underlining the importance of relational and empathetic approaches. More clinically oriented topics like **comprehensive geriatric assessment and intervention** (**47.1%**), **geriatric nursing, mental health, and pain management** (**45.1%**), and **medication management, polypharmacy, and drug interactions** (**44.1%**) received substantial attention, reflecting awareness of the complexity of care in ageing populations. Participants also showed interest in **chronic disease management and preventive care** (**42.2%**), and **technologies for supporting geriatric care** (**41.2%**), recognising the role of innovation in enhancing practice. Equally noted were **caregiver support, family dynamics, and social support** (**41.2%**), as well as **nutrition, hydration, and wound care** (**40.2%**), suggesting a holistic perspective on care provision. Though slightly less emphasised, **green policies, sustainability, and community engagement** (**36.3%**), **ageing mechanisms and physiological changes** (**32.4%**), and **fall prevention, mobility, and rehabilitation** (**31.4%**) still attracted meaningful interest. Collectively, these preferences underscore the need for **interdisciplinary, ethically grounded, and person-centred training** that addresses both clinical and societal challenges in geriatric and gerontological care.

Table 22 Areas in which Croatian participants would like to improve through training.

What areas would you like to improve through training in geriatrics and gerontology?	%
Dementia and mental health	62.7
Active ageing, quality of life, and role of older adults in society	53.9
Ethical, legal issues, and person-centred care	52.0
End-of-life and palliative care	52.0
Communication with older adults and families	51.0
Comprehensive geriatric assessment and intervention	47.1
Geriatric nursing, mental health, and pain management	45.1
Medication management, polypharmacy, and drug interactions	44.1
Chronic disease management and preventive care in older adults	42.2
Technologies for supporting geriatric care	41.2

Caregiver support, family dynamics, and social support	41.2
Nutrition, hydration, and wound care	40.2
Green policies, sustainability, and community engagement	36.3
Ageing mechanisms and physiological changes	32.4
Fall prevention, mobility, and rehabilitation	31.4

When asked about preferred training formats in geriatrics and gerontology, most participants expressed a clear preference for **in-person training** (66%) which underscores the importance of direct interaction, hands-on learning and engagement with instructors and peers. **Hybrid formats** were chosen by 35% of respondents, reflecting a growing interest in blended approaches that combine physical presence with the flexibility of digital tools. **Online training** was selected by 30% of participants, indicating that while digital learning remains relevant, especially for those with limited availability or in remote areas, the preference still leans toward more traditional or mixed methods. These results highlight the need to offer diverse and adaptable training formats to meet the varying needs of professionals in the field of ageing.

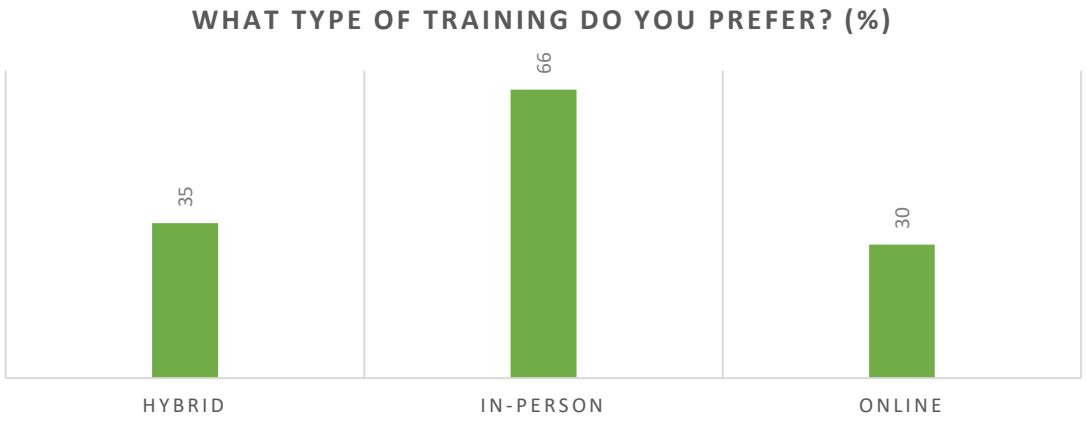


Figure 34 Proportion of Crotian individuals who prefer different types of training.

When considering the most effective formats for professional development in geriatrics and gerontology, participants showed a strong preference for **practical workshops** (**62.7%**) and **coaching to support learning** (**59.8%**), emphasizing the value of applied, guided, and interactive learning experiences. **Experiential learning** (**52.9%**) and **theoretical-practical courses** (**48.0%**) were also highly regarded, reflecting the importance of integrating conceptual knowledge with real-world application. While **clinical simulation** (**30.4%**), **training games** (**29.4%**), and **interactive online classes** (**17.6%**) were selected less frequently, they still hold relevance as complementary strategies, suggesting that more immersive, hands-on approaches are generally preferred for building confidence and skills in geriatric and gerontological care.

Table 23 Preferred training formats for professional development reported by participants.

What format of training do you consider most effective for your professional development?	%
Practical workshops	62.7
Coaching to support learning	59.8
Experiential learning	52.9
Theoretical-practical courses	48.0
Clinical simulation	30.4
Training games	29.4
Interactive online classes	17.6

When asked about the amount of time they could realistically dedicate to continuing education in geriatrics and gerontology, the majority of participants indicated a preference for short, manageable commitments. A substantial **68.6%** stated they **could dedicate 1 to 2 hours per week**, while **21.6%** reported being **able to allocate 3 to 5 hours**. Only **9.8%** said they could commit **5 of more hours weekly**. These findings highlight the need for flexible and concise training formats that can be easily integrated into the busy routines of healthcare professionals.

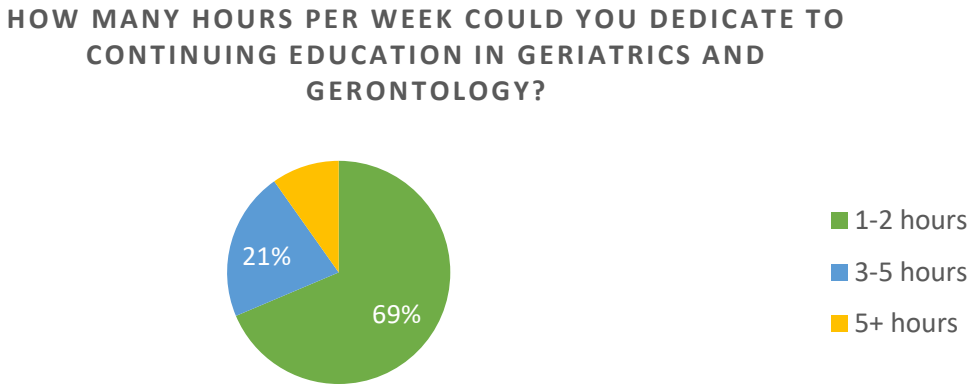


Figure 35 Croatian participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology.

When asked about their availability and willingness to participate in training outside regular work hours, **the majority of participants (79%)** responded positively, indicating they would be willing to engage in training before or after work or on their days off. In contrast, **21% participants expressed that they would not be available or willing** to do so. This suggests a generally strong motivation among professionals to pursue continuing education, although scheduling flexibility remains an important consideration.

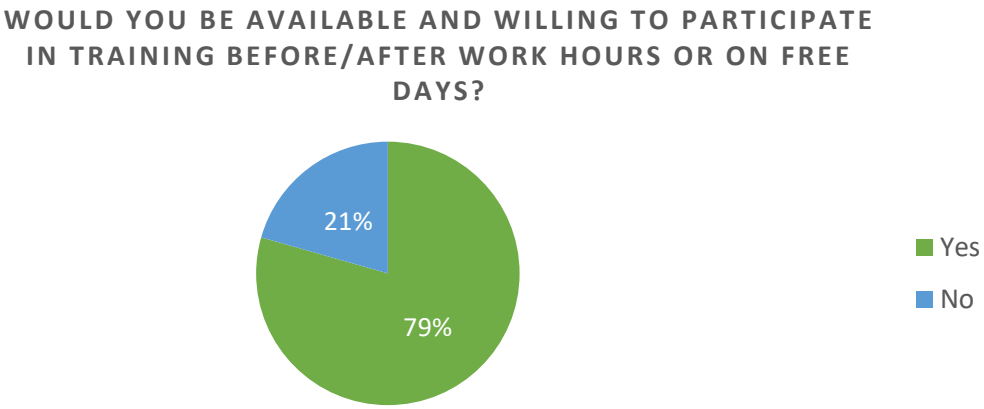


Figure 36 Proportion of participants willing to attend training before or after work hours, or during their free time.

When asked if they would like to receive more ongoing training on geriatric and gerontological care, **a clear majority of 79 participants answered "yes"**, expressing strong interest in continuing their education in this field. Meanwhile, **23 participants responded "no"**, indicating less enthusiasm for additional training. This demonstrates a significant demand for further learning opportunities among professionals working with older adults.

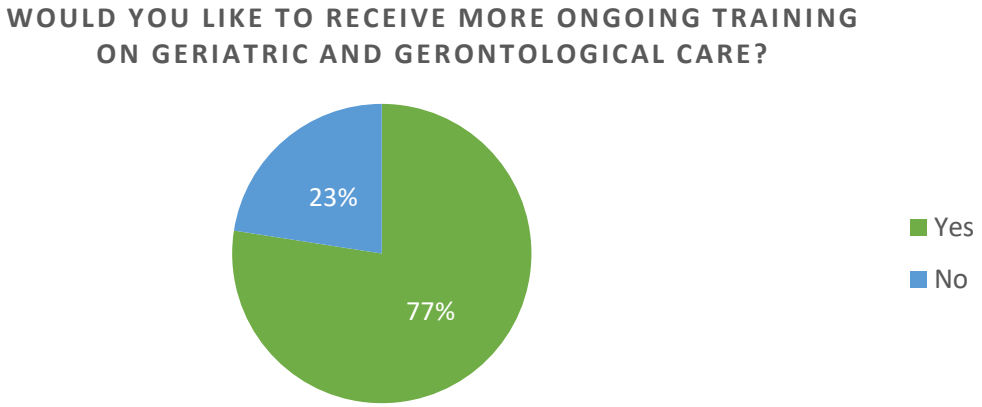


Figure 37 Proportion of Croatian participants interested in receiving additional ongoing training in geriatric and gerontological care.

Participants identified several key motivations for pursuing further specialisation or education in geriatrics. The most frequently cited factor was **professional recognition and expertise** (**58.8%**), followed by a strong **interest in improving patient outcomes** (**55.9%**) and **personal fulfilment** (**51.0%**). **Career advancement** was also a significant motivator (**50.0%**), indicating that many professionals see specialisation/education in geriatrics as a pathway to professional growth. While **access to better employment opportunities** (**36.3%**) and a **supportive learning environment** (**23.5%**) were less commonly selected, they still contributed to the overall motivation. **Demographic trends** (**16.7%**) were the least cited factor. These findings suggest that motivations are primarily driven by a combination

of the desire to improve care quality, achieve professional development, and find personal satisfaction in the field.

Table 24 Factors motivating Croatian participants to pursue further specialisation or education in geriatrics.

What factors would motivate you to pursue further specialisation/ education in geriatrics?	%
Professional Recognition and Expertise	58.8
Interest in improving patient outcomes	55.9
Personal fulfilment	51.0
Career Advancement	50.0
Access to Better Employment Opportunities	36.3
Supportive Learning Environment	23.5
Demographic trends	16.7

When asked about the specific areas in which they would like to deepen their knowledge, participants most frequently identified **dementia and mental health** (**51.0%**), followed by **communication with older adults and families** (**44.1%**) and **end-of-life and palliative care** (**41.2%**). A strong interest was also shown in **comprehensive geriatric assessment and intervention** (**41.2%**), as well as **active ageing, quality of life, and the societal role of older adults** (**40.2%**). Other areas that attracted considerable attention included **medication management, polypharmacy, and drug interactions** (**39.2%**), **ethical and legal issues along with person-centred care** (**38.2%**), and **technologies for supporting geriatric care** (**34.3%**). Participants also expressed interest in **geriatric nursing, mental health, and pain management** (**33.3%**), along with systemic and community-oriented topics such as **green policies and sustainability** (**27.5%**) and **chronic disease management and preventive care** (**27.5%**). Additional areas of relevance included **nutrition, hydration, and wound care** (**27.5%**), **fall prevention and rehabilitation** (**25.5%**), **caregiver support and family dynamics** (**23.5%**), and **ageing mechanisms and physiological changes** (**21.6%**). These preferences indicate a broad and multidimensional interest spanning clinical, psychosocial, technological, and systemic domains of geriatric care.

Table 25 Specific areas in which Croatian participants wish to deepen their knowledge in geriatric and gerontological care.

In which specific areas would you like to deepen your knowledge?	%
Dementia and mental health	51.0
Communication with older adults and families	44.1
End-of-life and palliative care	41.2
Comprehensive geriatric assessment and intervention	41.2

Active ageing, quality of life, and role of older adults in society	40.2
Medication management, polypharmacy, and drug interactions	39.2
Ethical, legal issues, and person-centred care	38.2
Technologies for supporting geriatric care	34.3
Geriatric nursing, mental health, and pain management	33.3
Green policies, sustainability, and community engagement	27.5
Chronic disease management and preventive care in older adults	27.5
Nutrition, hydration, and wound care	27.5
Fall prevention, mobility, and rehabilitation	25.5
Caregiver support, family dynamics, and social support	23.5
Ageing mechanisms and physiological changes	21.6

The most frequently reported barrier to participating in ongoing training was **lack of time (71.6%)**, highlighting a significant constraint for the majority of respondents. **Cost (40.2%)** was also a notable obstacle, suggesting that financial considerations play an important role in limiting participation. Other reported barriers included **limited access to courses (39.2%)** and **lack of supporting structures (32.4%)**, indicating that logistical and institutional factors also impact professionals' ability to engage in continued education.

Table 26 Croatian participants reported obstacles to participation in continuing education.

Are there any barriers that prevent you from participating in ongoing training?	%
Lack of time	71.6
Cost	40.2
Limited access to courses	39.2
Lack of supporting structures	32.4

3.2.5 Green policies and sustainability in geriatric care

When asked about their familiarity with green policies and sustainable practices in healthcare, **only 16 participants responded affirmatively**, while **86 reported not being familiar** with these concepts. This indicates that **a significant majority (84%) lack awareness** of sustainability-related strategies in the healthcare context, particularly within geriatric care, suggesting an important gap in knowledge that could be addressed through targeted educational efforts.

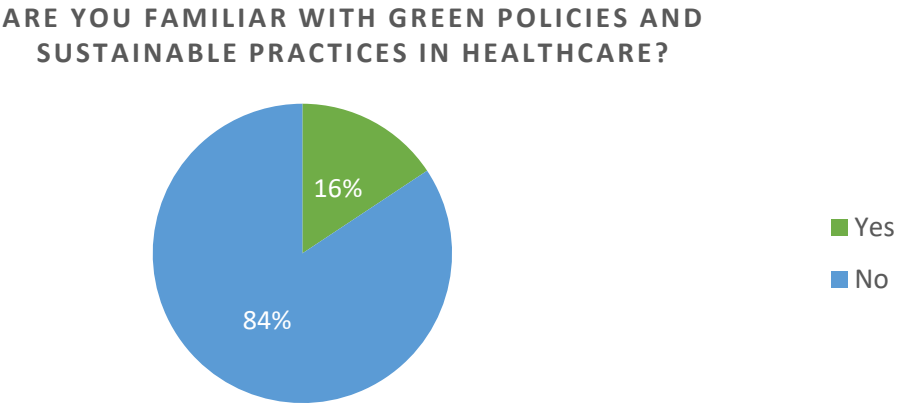


Figure 38 Proportion of Croatian individuals who are familiar with green policies and sustainable practices in healthcare.

From those aware with green policies and sustainable practices in healthcare, only **3 participants (19%)** reported having received training on sustainable practices in healthcare, while **13 (81%)** indicated they had not. These results further underscore the **limited exposure to sustainability education** among professionals, reinforcing the need to integrate **green policies and sustainable practices** more explicitly into training programmes in geriatrics and gerontology.

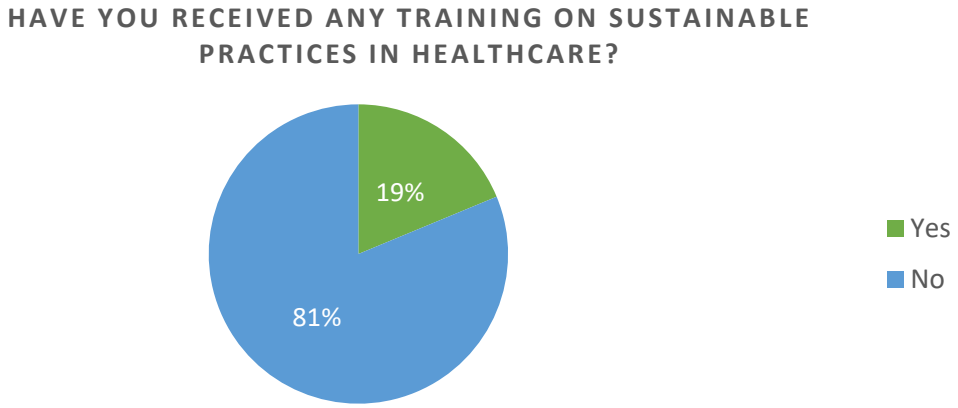


Figure 39 Proportion of Croatian individuals who received specific training on sustainable practices in healthcare.

When asked about the application of sustainable practices in their workplace, **75.5%** of participants reported ensuring the **safe disposal of hazardous waste** such as diapers, bandages, or medical waste. **Recycling materials** like paper, plastic, or glass was cited by **63.7%**, indicating it is also a widely adopted practice. Measures aimed at **reducing energy consumption** were mentioned by **34.3%**, while **water conservation efforts** were less common, reported by **20.6%** of respondents. Only **16.7%** indicated the use of **environmentally friendly products**. These findings suggest that while some

sustainability practices are well integrated into geriatric care settings, others, particularly those related to product choice and water use, remain less frequently implemented.

Table 27 Participant-reported implementation of environmentally sustainable practices at work.

In your workplace, do you apply any sustainable practices?	%
Safe disposal of hazardous waste (e.g., diapers, bandages, medical waste)	75.5
Recycling materials (e.g., paper, plastic, glass)	63.7
Reducing energy consumption (e.g., efficient lighting, equipment)	34.3
Water conservation measures	20.6
Using environmentally friendly products	16.7

When asked about the challenges faced in implementing sustainable practices in their work environment, **62.9%** of participants identified a **lack of training on green policies** as the main barrier. Overall, **42.2%** mentioned **time constraints**, **41.2%** reported **limited access to eco-friendly resources**, while **38.2%** cited the **cost of sustainable alternatives** as a challenge. Additionally, **32.8%** pointed to **institutional resistance to change**, highlighting the need for systemic support and accessible training to foster more sustainable practices in geriatric care.

Table 28 Challenges faced by Croatian participants in implementing sustainable practices at work.

What challenges do you face in implementing sustainable practices in your work environment?	%
Lack of training on green policies	62.7
Time constraints	42.2
Limited access to eco-friendly resources	41.2
Cost of sustainable alternatives	38.2
Institutional resistance to change	32.4

The vast majority of participants (**84.0%**) believe that **incorporating green policies into nursing education is important**, while only **16.0%** responded negatively. This indicates a strong consensus on the relevance of sustainability and environmental responsibility within the professional training of nurses.

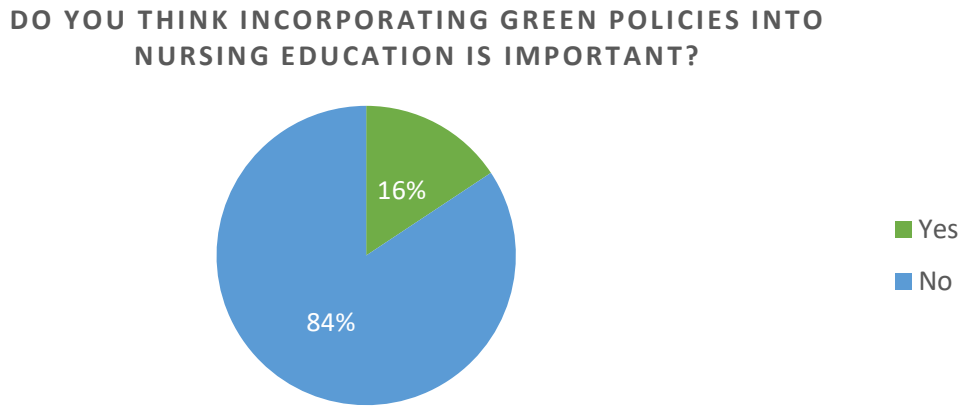


Figure 40 Proportion of Croatian individuals who think is important to incorporate green policies into nursing education.

Croatian participants who supported the inclusion of **green policies** in nursing education highlighted several key motivations. Many emphasised the importance of **environmental protection**, referring to the need for both general and comprehensive preservation of the environment. Others pointed to the necessity of **safeguarding the planet for future generations**, linking ecological responsibility to a **safer and more sustainable future**. In addition to these ethical and environmental concerns, some participants also mentioned **practical benefits**, such as **cost reduction**, suggesting that implementing green practices could lead to both **ecological and economic advantages**.

Those who responded negatively to the inclusion of green policies in nursing education argued that the **primary focus** of nursing education should remain on **healthcare delivery and patient care**. While acknowledging the importance of ecological issues, they felt these topics are **not central** to the **core medical curriculum**. Instead, they emphasised the need to prioritise **practical skills**, **ethics**, and **direct patient interaction** as the fundamental components of nursing training.

Participants identified several priority areas where sustainability education could have the greatest impact. The most frequently mentioned was **environmental preservation education for both staff and patients** (**70.6%**), followed by **safe disposal of hazardous waste** (**67.6%**). The **use of eco-friendly materials and products** was also considered highly relevant (**61.8%**). Other important topics included **resource conservation** (**56.9%**) and **reducing energy consumption** (**44.1%**), reflecting a clear interest in tangible and practical sustainability measures. **Waste management and recycling** were noted by **42.2%** of participants, indicating that while still relevant, this topic may be seen as slightly less urgent compared to others.

Table 29 Sustainability areas that Croatian participants believe should be emphasised in geriatric and gerontological care.

In your opinion, what areas of sustainability should be emphasised in geriatric and gerontological care?	%
Environmental preservation education for staff and patients	70.6
Safe disposal of hazardous waste	67.6
Use of eco-friendly materials and products	61.8
Resource conservation	56.9
Reducing energy consumption	44.1
Waste management and recycling	42.2

Participants were asked how confident they felt in safely disposing of hazardous waste commonly used in the care of older adults. The majority reported feeling **somewhat confident (49.0%)** or **very confident (21.6%)**, while **29.4% indicated they were not confident**, highlighting the need for further training and support in this area.

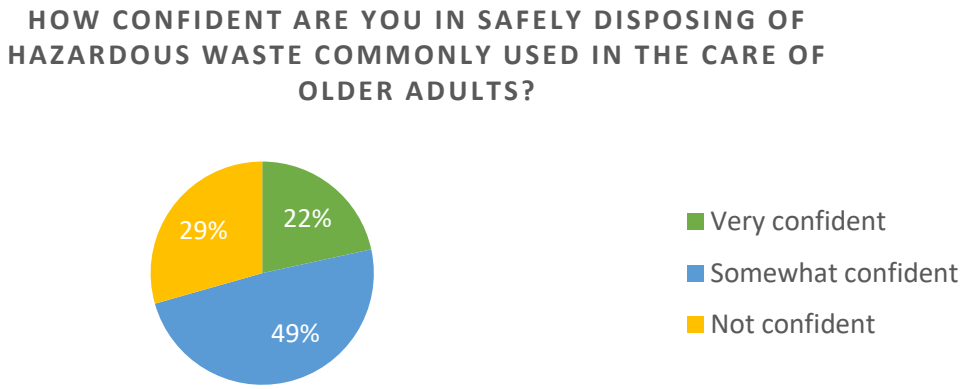


Figure 41 Confidence levels that participants reported in safely disposing hazardous waste commonly used in the care of older adults.

Participants identified several practices that could promote sustainability in the care of older adults. The most supported measure was **providing training on green policies**, endorsed by **57.8%** of respondents. **Improving waste disposal systems for hazardous materials** followed closely, with **55.9%** recognizing its importance. **Encouraging the use of reusable products** was also favoured by **54.9%** of participants. Meanwhile, **using renewable energy sources** (**40.2%**) and **implementing more recycling initiatives** (**38.2%**) received moderate support. These results highlight a strong emphasis on both educational and operational strategies to enhance environmental sustainability in geriatric care settings.

Table 30 Croatian participants-reported strategies to improve environmental sustainability in geriatric care.

What practices do you believe would improve sustainability in the care of older adults?	%
Providing training on green policies	57.8
Improving waste disposal systems for hazardous materials	55.9
Encouraging the use of reusable products	54.9
Using renewable energy sources	40.2
Implementing more recycling initiatives	38.2

A clear majority of participants, **76 out of 102 (74.5%)**, expressed willingness to participate in training programs focused on sustainable healthcare practices. Only **26 (25.5%)** indicated they would not be willing to participate, demonstrating strong overall interest in gaining knowledge and skills related to sustainability in healthcare settings.

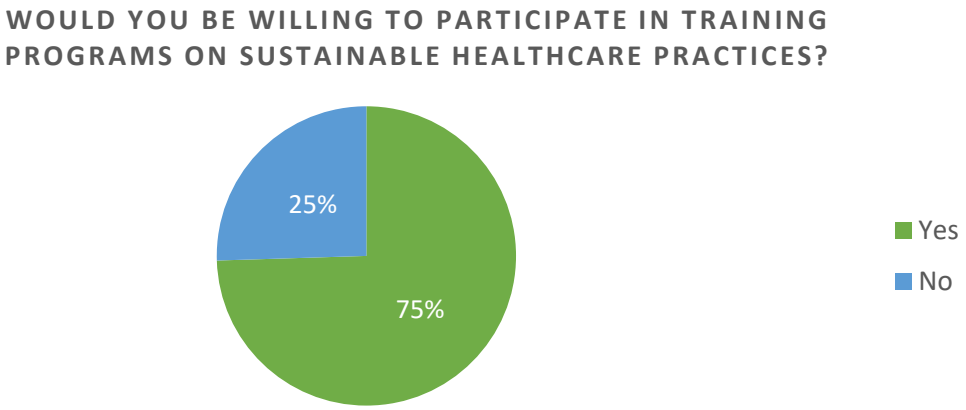


Figure 42 Proportion of Croatian individuals who would be willing to participate in training programs on sustainable healthcare practices.

Participants from Croatia provided valuable suggestions for promoting sustainable practices in geriatric and gerontological nursing, with a strong emphasis on **education** and **awareness raising**. Many highlighted the need for **more lectures and training sessions**, particularly within **professional nursing curricula**, to better prepare staff for sustainable care practices. A recurring recommendation was the **use of reusable products** in the care of older adults, such as **reusable diapers**, **bandaging materials**, and **medical tools**, paired with **proper waste sorting and disposal**, especially of **hazardous materials**. Respondents also stressed the importance of **resource conservation** and increased **recycling** and the use of **renewable energy sources**. These suggestions reflect a clear desire to integrate sustainability more deeply into both the **educational** and **practical** dimensions of geriatric nursing in Croatia.

3.3 Greece

3.3.1 Demographics

This study included a total of 102 participants, with a notable gender distribution where **42%** (n=43) were **male**. The mean age of the study population was **33.2 years**, with a standard deviation of 10.4 years, indicating a relatively diverse age range among the participants.

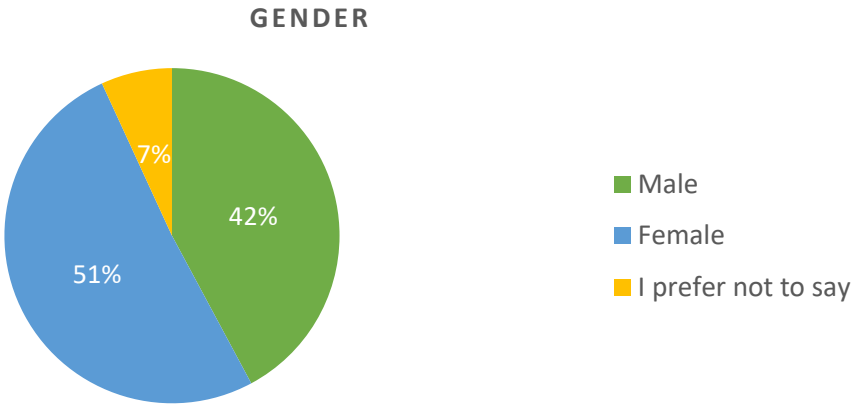


Figure 43 Gender distribution of the Greek participants (n=102).

A significant proportion of the cohort, nearly **83%**, possessed some form of **higher education**. Specifically, **33%** held a **bachelor's degree**, **38%** had accomplished a **master's degree**, and **12%** had completed a **PhD**, highlighting a highly educated participant group.

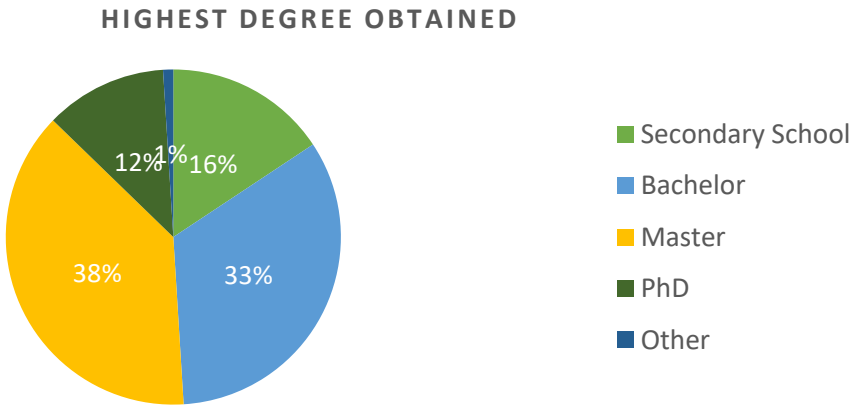


Figure 44 Distribution of Greek participants by highest degree obtained.

The professional background of the **participants** was predominantly within the **healthcare sector**. The sample primarily consisted of **nursing students** (**16%**), **nurses** (**45%**), and **doctors (13%)**. Other healthcare professionals also contributed to the sample, including **social workers** (**15%**), and

occupational therapists (**9%**). The remaining 2% comprised various other types of healthcare workers, ensuring a broad representation of the healthcare workforce.

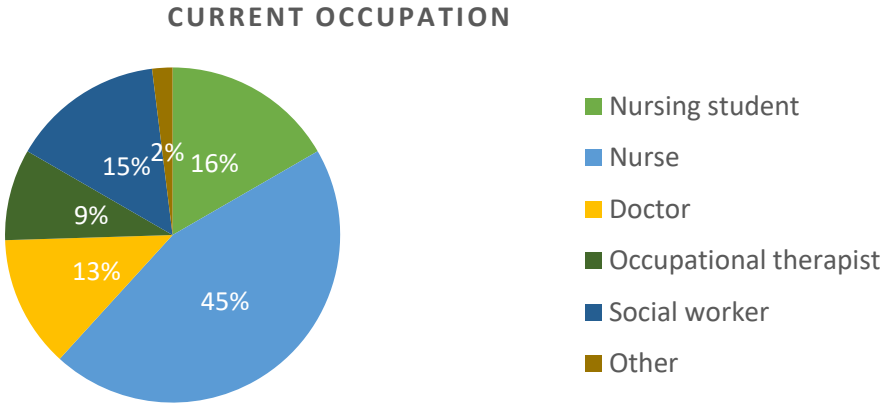


Figure 45 Distribution of Greek participants by current occupation.

Regarding professional experience in patient care, the participants demonstrated varied levels of tenure. Among all participants, **20%** had **less than one year of experience** in patient care, suggesting a segment of newer professionals. Approximately **22%** had **between one and five years of experience**, while **17%** had **six to ten years of experience**. The other participants, accounting for **41%**, had **extensive experience of ten years or longer** in patient care, indicating a substantial presence of expert professionals within the study.

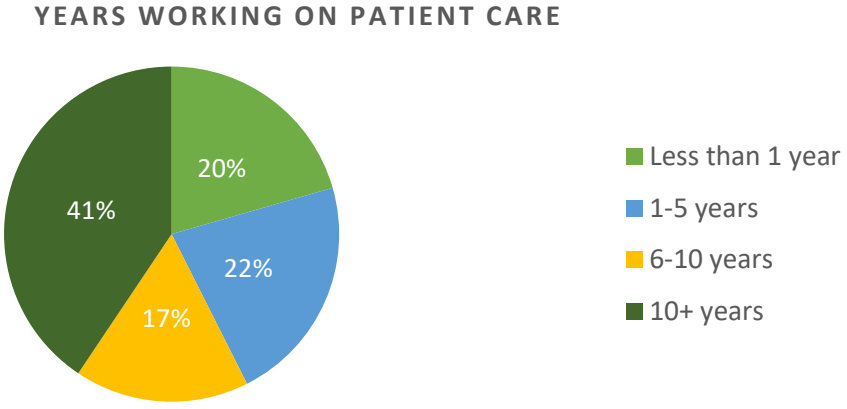


Figure 46 Distribution of Greek participants by number of years working on patient care.

Despite the diverse experience levels, only **42%** of all participants reported having specific **experience in geriatric care**, pointing to a potential area for specialized training or focus.

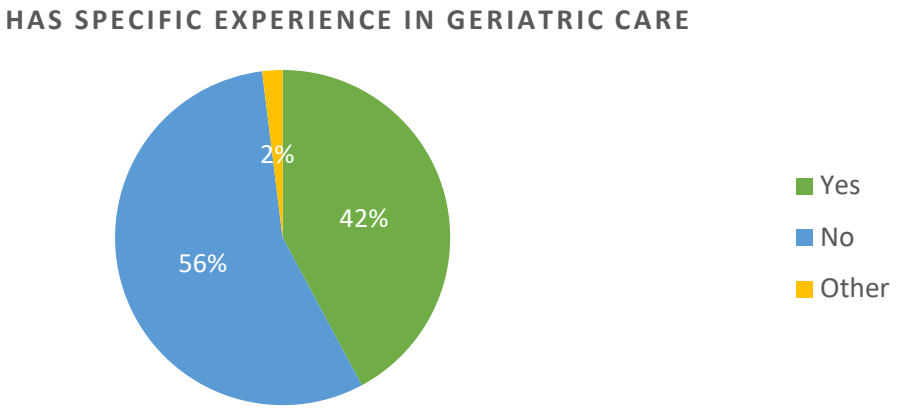


Figure 47 Experience in geriatric care among Greek participants.

The working settings of the participants were also diverse, reflecting various healthcare environments. The majority, **46%,** were engaged in **hospital care**, which is a common setting for patient interaction. A considerable portion, **16%**, worked in **home care**, emphasizing community-based services. **Nursing homes** accounted for **6%** of the participants' workplaces, **rehabilitation centres** employed **13%** of the participants, and **6%** worked in **long-term care facilities**, while the **13%** of the participants had **other** work settings. These diverse settings underscore the wide range of environments in which healthcare professionals operate and contribute to patient well-being.

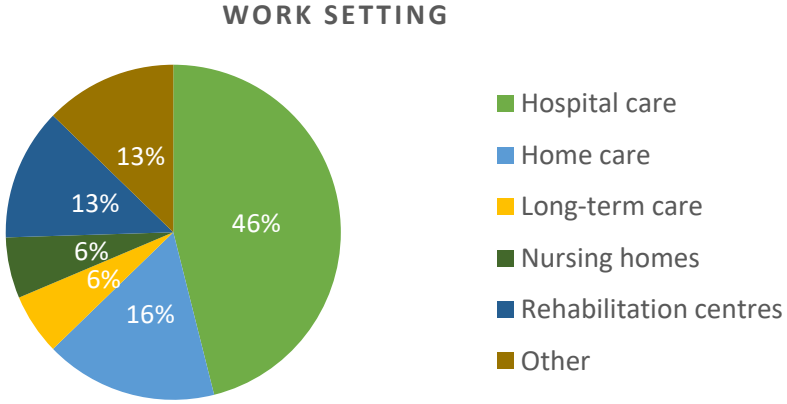


Figure 48 Distribution of work settings among Greek respondents.

3.3.2 Training and skills

Out of the 102 participants included in this study, only **32%** reported having **received any specific training in geriatrics and gerontology**.

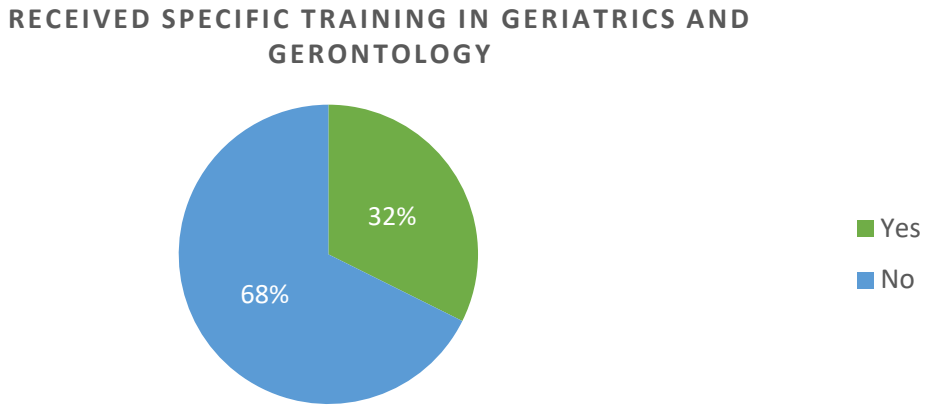


Figure 49 Proportion of Greek respondents who received specific training in geriatrics and gerontology.

Among those who did receive such training, **50%, considered the training sufficient** to effectively manage the challenges associated with the older population, while another **50% found the training partially sufficient** for addressing the specific needs and particularities of this demographic.

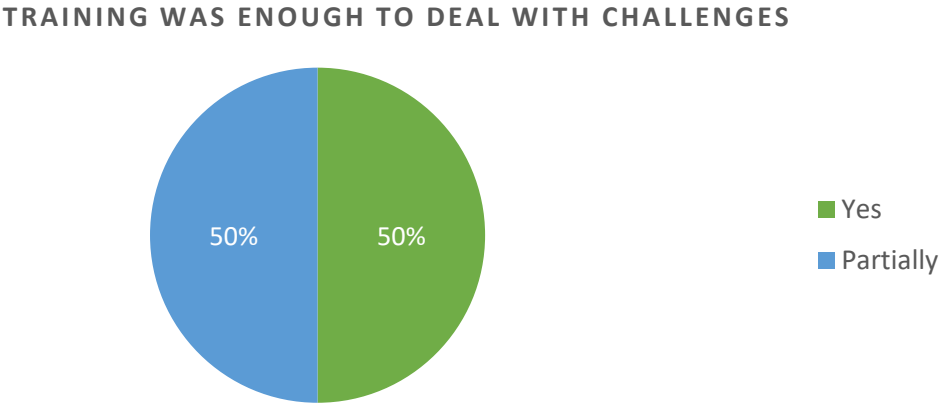


Figure 50 Greek respondents' perception of whether their training was sufficient to deal with challenges.

Among participants who had received training in geriatrics and gerontology, the coverage of specific topics varied considerably. The most frequently addressed areas were **Fall Prevention, Mobility, and Rehabilitation** and **Nutrition, Hydration, and Wound Care**, each included in **75.8%** of the reported training experiences. **Medication Management, Polypharmacy, and Drug Interactions** was also commonly covered (**63.6%**), followed by **Active Ageing, Quality of Life, and the Role of Older Adults in Society** and **Dementia and Mental Health** (both at **57.6%**).

Ageing Mechanisms and Physiological Changes featured in just over half of the trainings (54.5%), while Comprehensive Geriatric Assessment and Intervention was addressed in 48.5% of cases. Less frequently covered topics included Chronic Disease Management and Preventive Care in Older Adults (42.4%), Caregiver Support, Family Dynamics, and Social Support (39.4%), and Geriatric Nursing, Mental Health, and Pain Management (36.4%).

End-of-Life and Palliative Care was part of the training for only **30.3%** of participants, and **Communication with Older Adults and Families** was reported by **24.2%**. Technological and ethical aspects were even less present, with **Technologies for Supporting Geriatric Care** (**18.2%**), **Ethical, Legal Issues, and Person-Centred Care** (**15.2%**), and **Green Policies, Sustainability, and Community Engagement** (**3.0%**) being the least frequently addressed.

These results suggest that while core clinical topics receive substantial attention, there are critical gaps in training, particularly in areas related to communication, ethics, technology, and sustainability, that need further integration into educational programmes.

Table 31 Topics covered during Greek participants' training.

Which topics were covered during the training?	%
Fall prevention, mobility, and rehabilitation	75.8
Nutrition, hydration, and wound care	75.8
Medication management, polypharmacy, and drug interactions	63.6
Active ageing, quality of life, and role of older adults in society	57.6
Dementia and mental health	57.6
Ageing mechanisms and physiological changes	54.5
Comprehensive geriatric assessment and intervention	48.5
Chronic disease management and preventive care in older adults	42.4
Caregiver support, family dynamics, and social support	39.4
Geriatric nursing, mental health, and pain management	36.4
End-of-life and palliative care	30.3
Communication with older adults and families	24.2
Technologies for supporting geriatric care	18.2
Ethical, legal issues, and person-centred care	15.2
Green policies, sustainability, and community engagement	3.0

Several participants identified significant gaps in their training in geriatrics and gerontology. The most frequently mentioned omissions were **Green Policies, Sustainability, and Community Engagement** and **Ethical, Legal Issues, and Person-Centred Care**, both cited by **60.6%** of respondents. These were followed by **Technologies for Supporting Geriatric Care** (**45.5%**) and **Caregiver Support, Family Dynamics, and Social Support** (**39.4%**). Other areas perceived as insufficiently addressed

included **End-of-Life and Palliative Care** (**30.3%**) and **Dementia and Mental Health** (**27.3%**). A smaller proportion of participants pointed to gaps in **Communication with Older Adults and Families** (**21.2%**), **Comprehensive Geriatric Assessment and Intervention** (**15.2%**), **Ageing Mechanisms and Physiological Changes** (**15.2%**), and **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (**15.2%**). Fewer respondents noted inadequate coverage of **Medication Management, Polypharmacy, and Drug Interactions** (**12.1%**), **Chronic Disease Management and Preventive Care in Older Adults** (**12.1%**), and **Geriatric Nursing, Mental Health, and Pain Management** (**6.1%**). Only **3.0%** reported gaps in **Nutrition, Hydration, and Wound Care**, and none identified **Fall Prevention, Mobility, and Rehabilitation** as a missing component, suggesting this area may be more consistently addressed in current training programs.

Table 32 Training topics identified as missing by Greek participants.

What skills do you think were lacking in this training?	%
Green policies, sustainability, and community engagement	60.6
Ethical, legal issues, and person-centred care	60.6
Technologies for supporting geriatric care	45.5
Caregiver support, family dynamics, and social support	39.4
End-of-life and palliative care	30.3
Dementia and mental health	27.3
Communication with older adults and families	21.2
Comprehensive geriatric assessment and intervention	15.2
Ageing mechanisms and physiological changes	15.2
Active ageing, quality of life, and role of older adults in society	15.2
Medication management, polypharmacy, and drug interactions	12.1
Chronic disease management and preventive care in older adults	12.1
Geriatric nursing, mental health, and pain management	6.1
Nutrition, hydration, and wound care	3.0
Fall prevention, mobility, and rehabilitation	0.0

Regarding specialized training, 26% of all participants in the study had received specific training focused on caring for individuals with dementia.

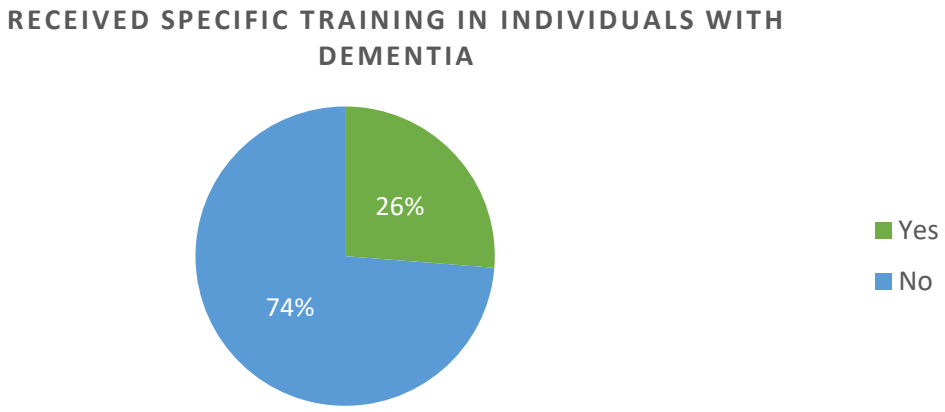


Figure 51 Proportion of Greek individuals who received specific training in individuals with dementia.

Of this subgroup, **37%** considered their **training fully sufficient to address** the complexities of dementia care. A larger proportion, **59%**, found their **training partially sufficient**, indicating some preparedness but also areas for improvement. Only **4%** reported that their **training was entirely insufficient** to meet the demands of caring for individuals with dementia.

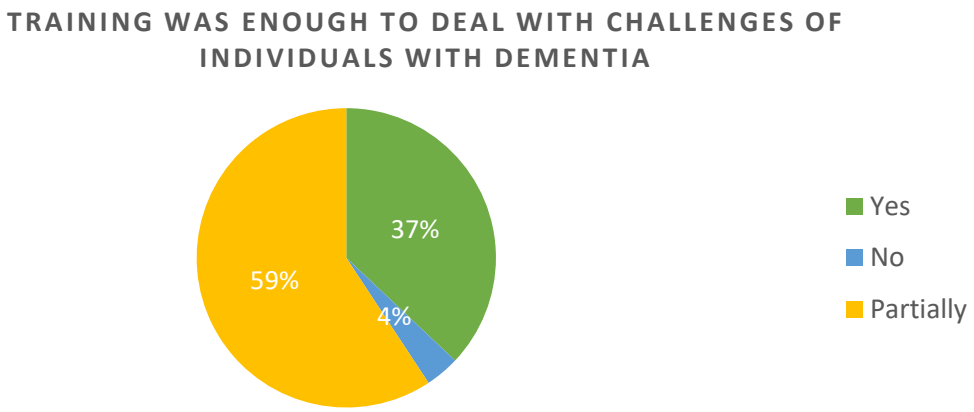


Figure 52 Perceptions of the Greek individuals if their training was enough to deal with the individuals with dementia.

Finally, the study assessed participants' confidence levels across various aspects of dementia care. The area in which participants expressed the greatest confidence was **Early Diagnosis and Management Strategies**, reported by **48.0%** of respondents. This was followed by **Providing Family Support and Education** (**38.2%**) and **Managing Behavioural and Psychological Symptoms** (**35.3%**). Confidence in **Communication Strategies for Individuals with Cognitive Decline** was noted by **28.4%** of participants. Lower levels of confidence were reported for **End-of-Life Care in Dementia** (**20.6%**) and **Ethical Issues in Dementia Care**, which was the least reported area, at **19.6%**.

Table 33 Aspects of dementia care in which Greek participants reported confidence.

What aspects of dementia do you feel confident about?	%
Early diagnosis and management strategies	48.0
Providing family support and education	38.2
Managing behavioural and psychological symptoms	35.3
Communication strategies for individuals with cognitive decline	28.4
End-of-life care in dementia	20.6
Ethical issues in dementia care	19.6

The challenges reported by participants in the care of individuals with dementia include a **Lack of Support Structures**, cited by **51.0%** of respondents, and **Insufficient Training**, reported by **46.1%**. **Difficulties Communicating with Individuals with Dementia** were noted by **34.3%**, while **Time Constraints** and **Managing Advanced Disease Stages** were each mentioned by **18.6%** of participants.

Table 34 Challenges that Greek participants reported within the care of individuals with dementia.

What challenges do you encounter in the care of individuals with dementia?	%
Lack of support structures	51.0
Insufficient training	46.1
Difficulties communicating with individuals with dementia	34.3
Time constraints	18.6
Managing advanced disease stages	18.6

From all, **47%** of the participants **work with older adults in their daily practice**.

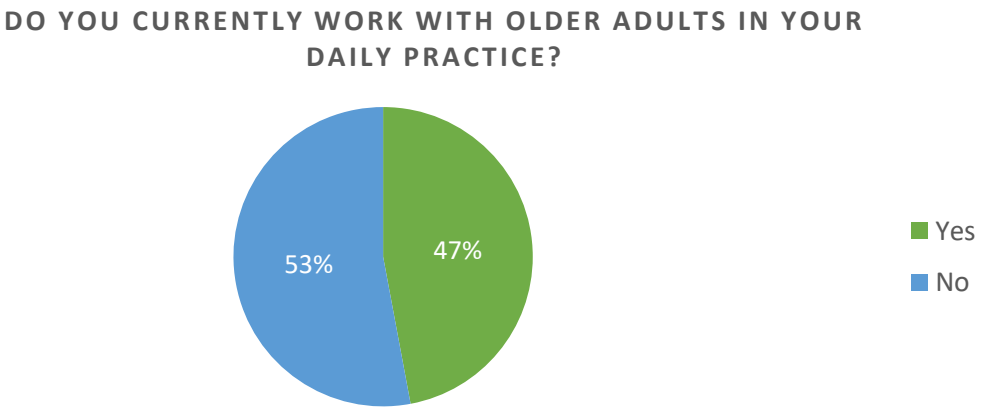


Figure 53 Proportion of Greek individuals who work daily with older adults.

Participants' self-assessed knowledge across ten geriatric-related topics revealed generally moderate levels, with notable variation between subjects. **Geriatric Nursing** and **Fall Prevention and Mobility** stood out as areas of relative strength, with over 60% of respondents rating their knowledge as good or deep (levels 4 and 5). **Mental Health**, **Dementia**, and **Chronic Disease Management** also

showed relatively higher confidence, with the majority placing themselves in average to higher categories (levels 3–5). In contrast, **Green Policies** emerged as the weakest area, with 57.8% of participants reporting no or low knowledge (levels 1 and 2). **Integrated Care** also showed lower confidence, with over a third of respondents rating themselves at the lower end. These findings point to specific needs for targeted educational efforts, particularly in sustainability-related policies and integrated care approaches.

Table 35 Self-reported knowledge levels across topics related to ageing and care among Greek participants.

What is your current level of knowledge about the following topics?					
	1	2	3	4	5
Chronic disease management	6.9	6.9	37.3	26.5	22.5
Comprehensive geriatric assessment	9.8	7.8	40.2	33.3	8.8
Dementia	7.8	11.8	49.0	22.5	8.8
Fall prevention and mobility	4.9	5.9	28.4	29.4	31.4
Geriatric nursing	5.9	2.9	27.5	32.4	31.4
Green Policies	33.3	24.5	33.3	6.9	2.0
Integrated care	19.6	17.6	41.2	13.7	7.8
Mental health	7.8	5.9	45.1	27.5	13.7
Pain management	8.8	10.8	29.4	28.4	22.5
Palliative care	10.8	7.8	31.4	30.4	19.6
1 – No Knowledge; 3 – Average Knowledge: 5 – Deep Knowledge					

3.3.3 Needs and shortcomings

When asked which themes should receive greater emphasis in geriatric and gerontological nursing studies, participants identified a wide range of priority areas for curricular enhancement. **Dementia and Mental Health** was the most frequently mentioned need (**69.6%**), followed by **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (**65.7%**). Several clinical and ethical domains were also highly ranked, including **Medication Management, Polypharmacy, and Drug Interactions** (**53.9%**), **Ethical, Legal Issues, and Person-Centred Care** (**53.9%**), **End-of-Life and Palliative Care** (**52.9%**), and **Nutrition, Hydration, and Wound Care** (**52.9%**). Participants also called for more focus on **Caregiver Support, Family Dynamics, and Social Support** (**44.1%**), **Comprehensive Geriatric Assessment and Intervention** (**44.1%**), and **Fall Prevention, Mobility, and Rehabilitation** (**44.1%**). Other important areas included **Geriatric Nursing, Mental Health, and Pain Management** (**43.1%**), **Ageing Mechanisms and Physiological Changes** (**41.2%**), and **Technologies for Supporting**

Geriatric Care (**40.2%**). While **Chronic Disease Management and Preventive Care in Older Adults** (**35.3%**), **Green Policies, Sustainability, and Community Engagement** (**32.4%**), and **Communication with Older Adults and Families** (**28.4%**) received slightly less emphasis, they were still regarded as relevant topics for strengthening future training.

Table 36 Topics identified by Greek participants as needing more emphasis in geriatric and gerontological nursing studies.

What are the main themes you think should be covered more in geriatric and gerontological nursing studies?	%
Dementia and mental health	69.6
Active ageing, quality of life, and role of older adults in society	65.7
Medication management, polypharmacy, and drug interactions	53.9
Ethical, legal issues, and person-centred care	53.9
End-of-life and palliative care	52.9
Nutrition, hydration, and wound care	52.9
Caregiver support, family dynamics, and social support	44.1
Comprehensive geriatric assessment and intervention	44.1
Fall prevention, mobility, and rehabilitation	44.1
Geriatric nursing, mental health, and pain management	43.1
Ageing mechanisms and physiological changes	41.2
Technologies for supporting geriatric care	40.2
Chronic disease management and preventive care in older adults	35.3
Green policies, sustainability, and community engagement	32.4
Communication with older adults and families	28.4

When asked "What improvements do you suggest for training programs in geriatric and gerontological nursing?" participants from Greece emphasised several priorities for strengthening education in this field. A central theme was the expansion of **clinical practice**, with repeated calls for more hours in geriatric clinics, nursing homes, and hospital geriatric departments. Many stressed the need for **practical, case-based guidance** for working with people living with dementia, as well as **training in real-life conditions** that reflect the realities of care. Another strong focus was the **integration of technology** into the curriculum, including telemedicine, assistive devices, artificial intelligence, and other digital tools that can support independence and quality of life for older adults. Respondents also suggested that technology-related content should be expanded and that more specialised courses should be offered in this area. Other proposals included **increasing psychiatric content**, developing programs where experienced gerontological nurses' mentor and support students and new professionals, and creating short, detailed courses that offer **formal certification**. Participants also called for training to be **free of charge**, more effective in delivery, and supported by **continuous updates**. Finally, there was an emphasis on raising awareness about the **value and**

satisfaction of caring for older adults, promoting prevention, autonomy, and quality of life as central goals of geriatric and gerontological nursing education.

Participants were asked "Do you consider that scientific research on geriatric and gerontological nursing is being sufficiently encouraged?". From all, only **24%** answered "**Yes**".

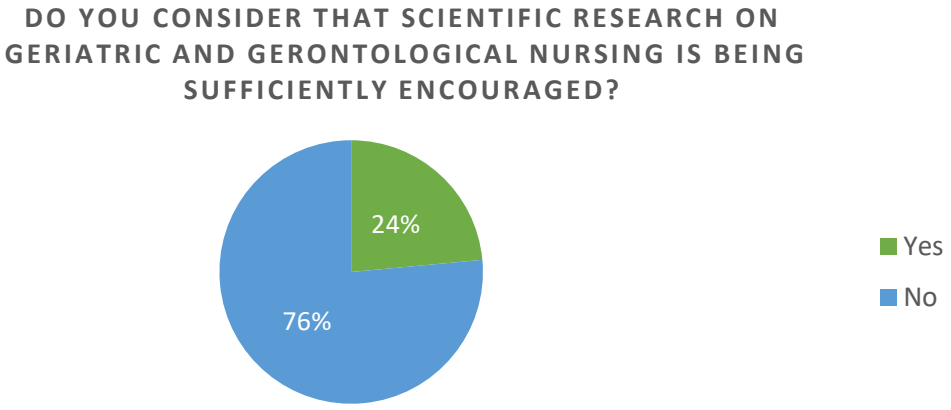


Figure 54 Proportion of Greek individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged.

Among those who responded negatively, participants justified their view by stating that **the main goal of nurse education is to provide healthcare and care for patients**. While **environmental issues are considered important**, they are not regarded as **critical for core medical training**. Instead, they argued that greater emphasis should be placed on **practical skills**, **ethics**, and **working with patients**.

3.3.4 Development opportunities

The training needs identified by participants reveal a strong interest in advancing knowledge across a range of geriatric and gerontological topics. The highest priority area was **Green Policies, Sustainability, and Community Engagement (57.8%)**, reflecting a growing awareness of the environmental and societal dimensions of care. This was closely followed by **Ethical, Legal Issues, and Person-Centred Care (55.9%)**, emphasizing concerns related to autonomy, values, and quality of care. Participants also prioritized **Active Ageing, Quality of Life, and the Role of Older Adults in Society (50.0%)**, along with **Dementia and Mental Health (46.1%)** and **End-of-Life and Palliative Care (46.1%)**, highlighting a desire to focus on holistic, person-centred approaches throughout the ageing trajectory. Interest in **Technologies for Supporting Geriatric Care (45.1%)** and **Ageing Mechanisms and Physiological Changes (44.1%)** underscores the recognition of both practical and biological aspects of ageing. Other areas of interest included **Caregiver Support, Family Dynamics, and Social Support**

(40.2%), while **Comprehensive Geriatric Assessment and Intervention (32.4%)** and **Chronic Disease Management and Preventive Care (28.4%)** also received notable attention. Topics such as **Communication with Older Adults and Families, Medication Management, Polypharmacy, and Drug Interactions, Geriatric Nursing, Mental Health, and Pain Management, Fall Prevention, Mobility, and Rehabilitation, and Nutrition, Hydration, and Wound Care** were less frequently selected but remain relevant for comprehensive training. Overall, these results underscore the importance of interdisciplinary, ethically grounded, and environmentally conscious training that addresses the complex clinical, social, and technological demands of modern geriatric care.

Table 37 Areas in which Greek participants would like to improve through training.

What areas would you like to improve through training in geriatrics and gerontology?	%
Green policies, sustainability, and community engagement	57.8
Ethical, legal issues, and person-centred care	55.9
Active ageing, quality of life, and role of older adults in society	50.0
Dementia and mental health	46.1
End-of-life and palliative care	46.1
Technologies for supporting geriatric care	45.1
Ageing mechanisms and physiological changes	44.1
Caregiver support, family dynamics, and social support	40.2
Comprehensive geriatric assessment and intervention	32.4
Chronic disease management and preventive care in older adults	28.4
Communication with older adults and families	27.5
Medication management, polypharmacy, and drug interactions	27.5
Geriatric nursing, mental health, and pain management	27.5
Fall prevention, mobility, and rehabilitation	24.5
Nutrition, hydration, and wound care	23.5

When asked about preferred training formats in geriatrics and gerontology, the majority of participants indicated a preference for **in-person training (55.9%)**, suggesting a continued value placed on face-to-face interaction, hands-on learning, and opportunities for direct engagement with peers and instructors. **Hybrid formats (32.4%)** were also well received, reflecting a growing openness to blended approaches that combine the benefits of physical presence with the flexibility of digital tools. Meanwhile, **online training (28.4%)** was selected by nearly a third of respondents, highlighting the relevance of accessible and self-paced learning, especially for professionals managing demanding schedules or located in remote areas. These results point to the importance of offering **diverse and**

adaptable training modalities to effectively meet the varied needs and preferences of healthcare professionals in the field of ageing.



Figure 55 Proportion of Greek individuals who prefer different types of training.

When evaluating the most effective formats for professional development in geriatrics and gerontology, participants expressed a strong preference for **Experiential Learning (59.8%)**, highlighting the importance of learning through direct experience and real-world application. **Clinical Simulation (51.0%)** and **Practical Workshops (48.0%)** were also highly valued, reflecting the significance of hands-on, practice-based approaches for building confidence and clinical skills. **Theoretical-Practical Courses (45.1%)** were appreciated for integrating conceptual knowledge with applied learning. Other formats, such as **Interactive Online Classes (43.1%)**, **Training Games (34.3%)**, and **Coaching to Support Learning (25.5%)**, were selected less frequently but remain relevant, suggesting that digital and innovative methods are most effective when combined with immersive, experience-based training.

Table 38 Preferred training formats for professional development reported by Greek participants.

What format of training do you consider most effective for your professional development?	%
Experiential learning	59.8
Clinical simulation	51.0
Practical workshops	48.0
Theoretical-practical courses	45.1
Interactive online classes	43.1
Training games	34.3
Coaching to support learning	25.5

When asked about the amount of time they could realistically dedicate to continuing education in geriatrics and gerontology, the majority of participants indicated a preference for short,

manageable commitments. **A substantial 64.7% stated they could dedicate 1 to 2 hours per week**, while **36.3% reported being able to allocate 3 to 5 hours**. Only **3.9% said they could commit more than 5 hours weekly**. These findings highlight the need for flexible and concise training formats that can be easily integrated into the busy routines of healthcare professionals.

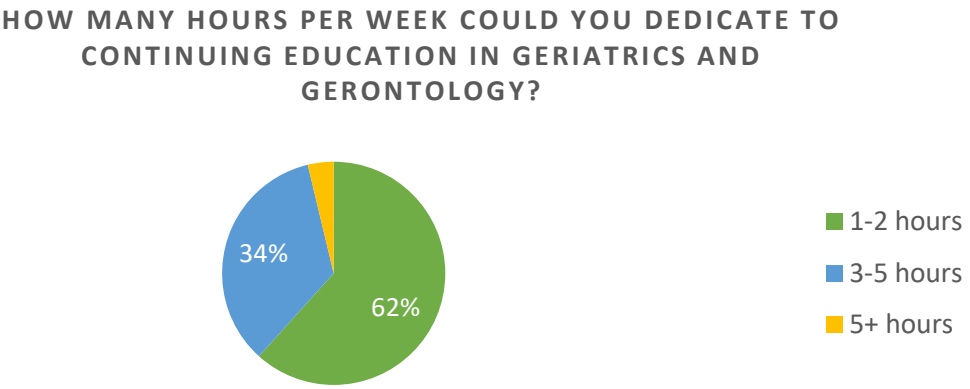


Figure 56 Greek participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology.

When asked about their availability and willingness to participate in training outside regular work hours, **the majority of participants (93%)** responded positively, indicating they would be willing to engage in training before or after work or on their days off. This suggests a generally strong motivation among professionals to pursue continuing education, although scheduling flexibility remains an important consideration.

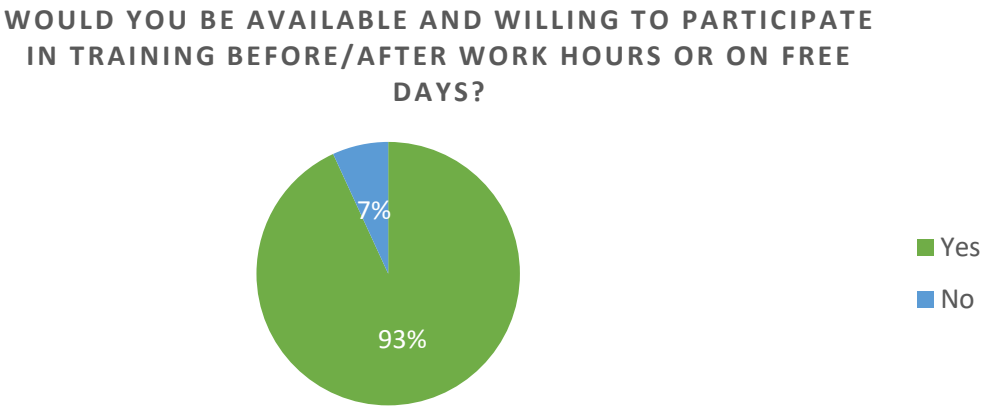


Figure 57 Proportion of Greek participants willing to attend training before or after work hours, or during their free time.

When asked if they would like to receive more ongoing training on geriatric and gerontological care, **a clear majority of 89 participants answered yes**, expressing strong interest in continuing their education in this field.

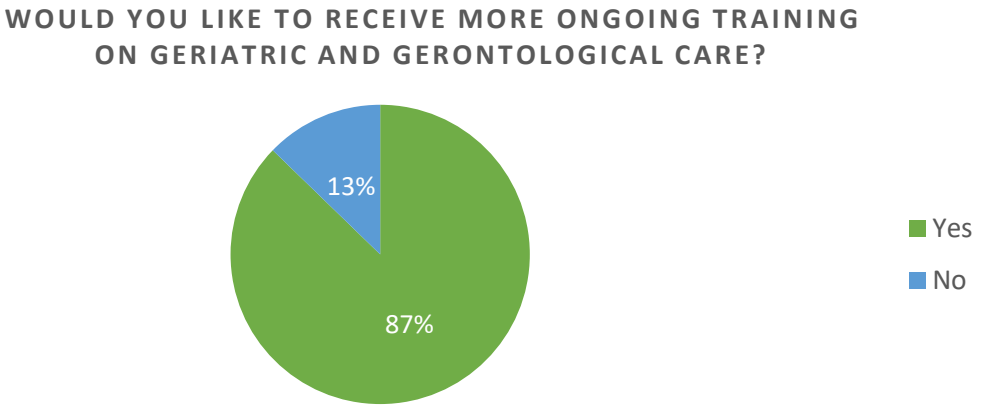


Figure 58 Proportion of Greek participants interested in receiving additional ongoing training in geriatric and gerontological care.

Participants highlighted several key motivations for pursuing further training in geriatrics and gerontology. The most commonly cited factor was **Personal Fulfilment (55.9%)**, followed by **Career Advancement (45.1%)** and **Demographic Trends (44.1%)**. **Interest in Improving Patient Outcomes (40.2%)** and **Access to Better Employment Opportunities (33.3%)** were also important, while **Professional Recognition and Expertise (32.4%)** played a smaller role. A **Supportive Learning Environment (19.6%)** was the least frequently mentioned motivation. Overall, these results suggest that participants are driven primarily by personal growth, professional development, and awareness of demographic changes influencing geriatric care.

Table 39 Factors motivating Greek participants to pursue further specialization or education in geriatrics.

What factors would motivate you to pursue further specialisation/ education in geriatrics?	%
Personal fulfilment	55.9
Career Advancement	45.1
Demographic trends	44.1
Interest in improving patient outcomes	40.2
Access to Better Employment Opportunities	33.3
Professional Recognition and Expertise	32.4
Supportive Learning Environment	19.6

When asked about the specific areas in which they would like to deepen their knowledge, participants most frequently highlighted **Ethical, Legal Issues, and Person-Centred Care (62.7%)**, followed by **Green Policies, Sustainability, and Community Engagement (54.9%)** and **End-of-Life and Palliative Care (52.9%)**. **Dementia and Mental Health (52.0%)** and **Technologies for Supporting Geriatric Care (46.1%)** were also highly prioritized. Participants further expressed interest in **Active**

Ageing, Quality of Life, and the Role of Older Adults in Society (42.2%), **Ageing Mechanisms and Physiological Changes (39.2%)**, and **Caregiver Support, Family Dynamics, and Social Support (34.3%)**. Other areas of interest included **Comprehensive Geriatric Assessment and Intervention (31.4%)**, **Chronic Disease Management and Preventive Care in Older Adults (28.4%)**, and **Medication Management, Polypharmacy, and Drug Interactions (27.5%)**. Less frequently selected, though still relevant, were **Geriatric Nursing, Mental Health, and Pain Management (21.6%)**, **Communication with Older Adults and Families (20.6%)**, **Fall Prevention, Mobility, and Rehabilitation (18.6%)**, and **Nutrition, Hydration, and Wound Care (17.6%)**. These results reflect a broad interest in both clinical and systemic aspects of geriatric care, encompassing ethical, technological, and psychosocial dimensions.

Table 40 Specific areas in which Greek participants wish to deepen their knowledge in geriatric and gerontological care.

In which specific areas would you like to deepen your knowledge?	%
Ethical, legal issues, and person-centred care	62.7
Green policies, sustainability, and community engagement	54.9
End-of-life and palliative care	52.9
Dementia and mental health	52.0
Technologies for supporting geriatric care	46.1
Active ageing, quality of life, and role of older adults in society	42.2
Ageing mechanisms and physiological changes	39.2
Caregiver support, family dynamics, and social support	34.3
Comprehensive geriatric assessment and intervention	31.4
Chronic disease management and preventive care in older adults	28.4
Medication management, polypharmacy, and drug interactions	27.5
Geriatric nursing, mental health, and pain management	21.6
Communication with older adults and families	20.6
Fall prevention, mobility, and rehabilitation	18.6
Nutrition, hydration, and wound care	17.6

The most frequently reported barrier to participating in ongoing training was **lack of time (74.5%)**, highlighting a significant constraint for the majority of respondents. **Cost (48.0%)** was also a notable obstacle, suggesting that financial considerations play an important role in limiting participation. Other reported barriers included **limited access to courses (32.4%)** and **lack of supporting structures (14.7%)**, indicating that logistical and institutional factors also impact professionals' ability to engage in continued education.

Table 41 Greek participants reported obstacles to participation in continuing education.

Are there any barriers that prevent you from participating in ongoing training?	%
Lack of time	74.5
Cost	48.0
Limited access to courses	32.4
Lack of supporting structures	14.7

3.3.5 Green policies and sustainability in geriatric care

When asked about their familiarity with green policies and sustainable practices in healthcare, **only 41 participants responded affirmatively**, while **61 reported not being familiar** with these concepts. This indicates that **a significant majority (60%) lack awareness** of sustainability-related strategies in the healthcare context, particularly within geriatric care, suggesting an important gap in knowledge that could be addressed through targeted educational efforts.

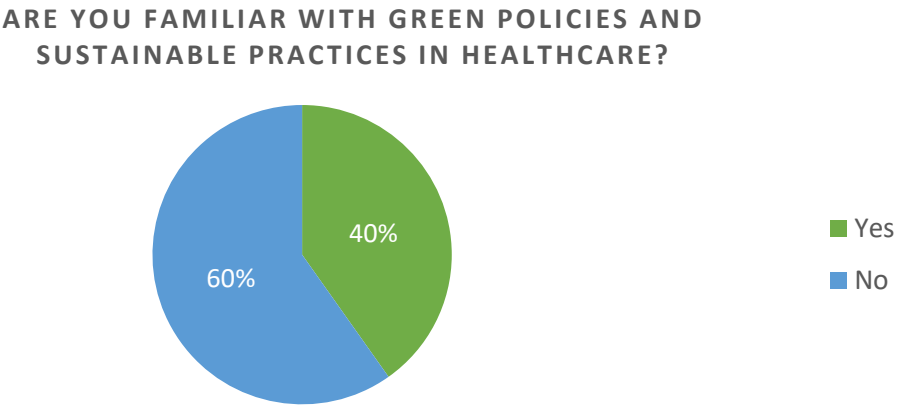


Figure 59 Proportion of Greek individuals who are familiar with green policies and sustainable practices in healthcare.

From those aware with green policies and sustainable practices in healthcare, only **11 participants (27%)** reported having received training on sustainable practices in healthcare, while **30 (73%)** indicated they had not. These results further underscore the **limited exposure to sustainability education** among professionals, reinforcing the need to integrate **green policies and sustainable practices** more explicitly into training programmes in geriatrics and gerontology.

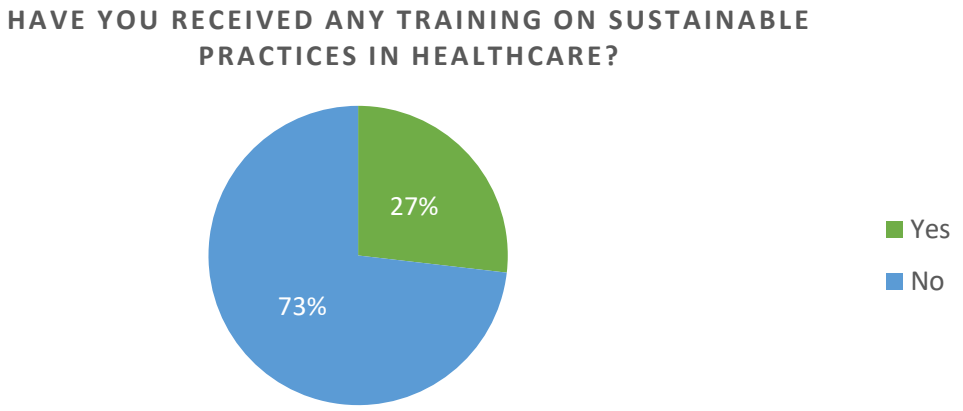


Figure 60 Proportion of Greek individuals who received specific training on sustainable practices in healthcare.

When asked about the application of sustainable practices in their workplace, **89.2% of participants reported recycling materials** such as paper, plastic, or glass. **36.3% stated they adopt measures to reduce energy consumption**, while **33.3% apply water conservation practices**. **Safe disposal of hazardous waste** (e.g., diapers, bandages, or other medical waste) was mentioned by **21.6%**, and only **17.6% reported using environmentally friendly products,** which indicate that while recycling is widely adopted, other eco-friendly practices remain less frequent in geriatric care settings.

Table 42 Greek participants reported implementation of environmentally sustainable practices at work.

In your workplace, do you apply any sustainable practices?	%
Recycling materials (e.g., paper, plastic, glass)	89.2
Reducing energy consumption (e.g., efficient lighting, equipment)	36.3
Water conservation measures	33.3
Safe disposal of hazardous waste (e.g., diapers, bandages, medical waste)	21.6
Using environmentally friendly products	17.6

When asked about the challenges faced in implementing sustainable practices in their work environment, **54.9% of participants** identified both **a lack of training on green policies** and **institutional resistance to change as the main barriers**. In addition, **25.5% reported limited access to eco-friendly resources**, while **22.5% highlighted the cost of sustainable alternatives and time constraints** as further challenges. These findings underscore the importance of systemic support, institutional commitment, and accessible training to foster more sustainable practices in geriatric care.

Table 43 Challenges faced by Greek participants in implementing sustainable practices at work.

What challenges do you face in implementing sustainable practices in your work environment?	%
Lack of training on green policies	54.9
Institutional resistance to change	54.9
Limited access to eco-friendly resources	25.5
Cost of sustainable alternatives	22.5
Time constraints	22.5

The vast majority of participants (**90.2%**) believe that **incorporating green policies into nursing education is important**, while only **9.8%** responded negatively. This indicates a strong consensus on the relevance of sustainability and environmental responsibility within the professional training of nurses.

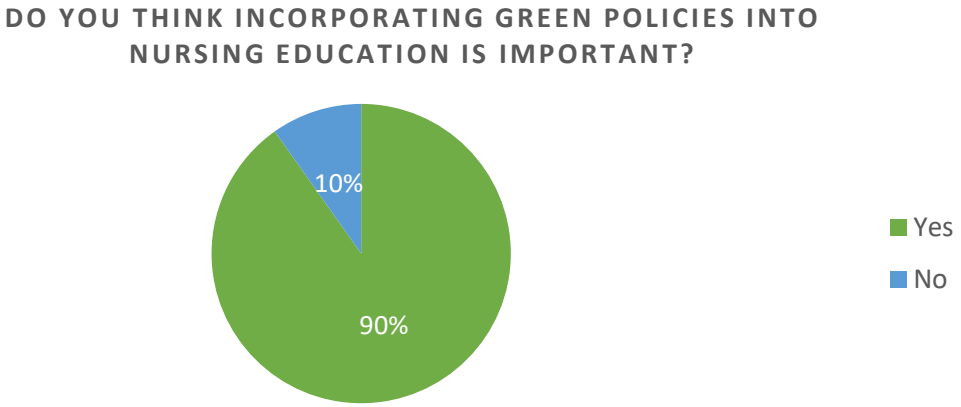


Figure 61 Proportion of Greek individuals who think is important to incorporate green policies into nursing education.

Participants who answered "yes" to the importance of incorporating green policies into nursing education highlighted several recurring themes. Many emphasised the **need for better waste management and resource conservation**, noting practices such as **recycling, energy saving, and efficient use of materials** as essential. Others stressed that such training would **enhance ecological awareness**, leading to more sustainable behaviours while also contributing to **cost reduction** in healthcare settings. A number of participants pointed to the **climate crisis as the most urgent challenge of our time**, underscoring the responsibility of the nursing profession to engage actively in solutions. While most viewed sustainability as a pressing priority, a few comments reflected that in their country, **other major problems currently take precedence**, though they still recognized the relevance of green education. Overall, respondents agreed that **integrating green policies into nursing education is necessary to promote environmentally responsible practices and prepare professionals to meet the challenges of a changing world**.

Respondents who opposed the inclusion of green policies in nursing education explained their position with the view that such **topics are not connected to the core responsibilities of the profession**. In their perspective, **sustainability** is considered **outside the scope of nursing education**, which should remain centred on clinical care, practical skills, ethics, and patient interaction.

Participants identified several priority areas where sustainability should be emphasised in geriatric and gerontological care. The most frequently mentioned was **safe disposal of hazardous waste (75.5%)**, followed by **reducing energy consumption (59.8%)**. **Environmental preservation education for both staff and patients (58.8%)** and **waste management and recycling (58.8%)** were equally valued. **Resource conservation (52.0%)** and the **use of eco-friendly materials and products (51.0%)** were also highlighted, underscoring a strong interest in practical and actionable sustainability practices within healthcare for older adults.

Table 44 Sustainability areas that Greek participants believe should be emphasised in geriatric and gerontological care.

In your opinion, what areas of sustainability should be emphasised in geriatric and gerontological care?	%
Safe disposal of hazardous waste	75.5
Reducing energy consumption	59.8
Environmental preservation education for staff and patients	58.8
Waste management and recycling	58.8
Resource conservation	52.0
Use of eco-friendly materials and products	51.0

Participants were asked how confident they felt in safely disposing of hazardous waste commonly used in the care of older adults. The majority reported feeling **somewhat confident (60.8%)** or **very confident (26.5%)**, while **12.7% indicated they were not confident**, highlighting the need for further training and support in this area.

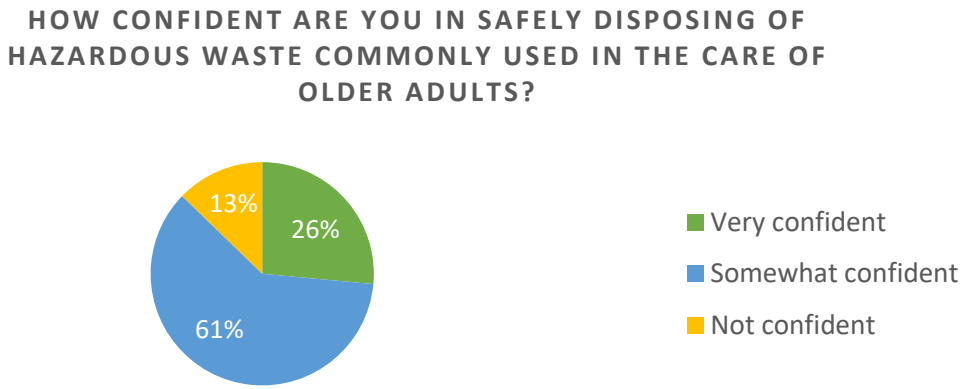


Figure 62 Confidence levels that Greek participants reported in safely disposing hazardous waste commonly used in the care of older adults.

Participants identified several practices that could enhance sustainability in the care of older adults. The most supported measure was **providing training on green policies (62.7%)**, followed closely by **improving waste disposal systems for hazardous materials (60.8%)**. **Using renewable energy sources (55.9%)** and **encouraging the use of reusable products (52.0%)** were also widely endorsed. **Implementing more recycling initiatives (41.2%)** was additionally highlighted, reflecting a strong interest in both education and practical measures to foster environmental sustainability in geriatric care.

Table 45 Greek participants reported strategies to improve environmental sustainability in geriatric care.

What practices do you believe would improve sustainability in the care of older adults?	%
Providing training on green policies	62.7
Improving waste disposal systems for hazardous materials	60.8
Using renewable energy sources	55.9
Encouraging the use of reusable products	52.0
Implementing more recycling initiatives	41.2

A clear majority of participants, **96 out of 102 (94.1%)**, expressed willingness to participate in training programs focused on sustainable healthcare practices. Only **6 (5.9%)** indicated they would not be willing to participate, demonstrating strong overall interest in gaining knowledge and skills related to sustainability in healthcare settings.

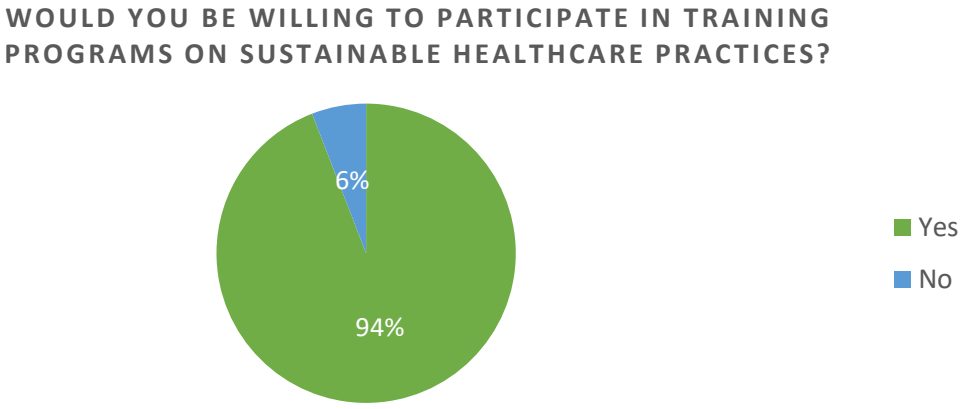
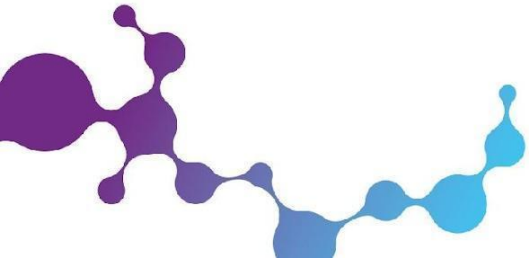


Figure 63 Proportion of Greek individuals who would be willing to participate in training programs on sustainable healthcare practices.

Participants provided a variety of suggestions for promoting sustainable practices in geriatric and gerontological nursing. Many emphasised **designing care environments that enhance autonomy, safety, and accessibility** for older adults. The importance of **effective planning**, including careful meal preparation, proper food storage, and waste reduction, particularly **better management of hazardous**

waste, was also highlighted. **Training and education** emerged as key themes, with calls for practical and impactful lessons on sustainability. Participants recommended **using products with environmental certifications**, **implementing safe reuse systems** where feasible, and incorporating **digital tools such as electronic records, telemedicine, and remote monitoring** to reduce environmental impact. Additionally, suggestions included **recruiting and properly training staff** and creating specialised care structures and networks to support sustainable practices. Overall, the responses reflect a focus on combining practical actions, educational initiatives, and organisational support to foster sustainability in geriatric and gerontological care.



3.4 Netherlands

3.4.1 Demographics

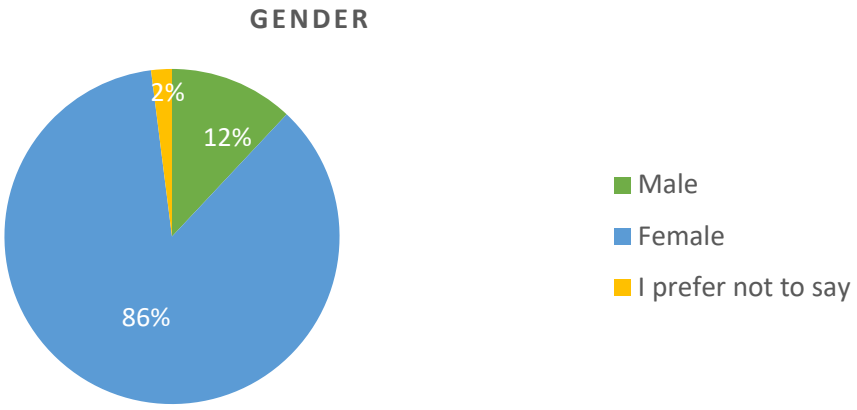


Figure 64 Gender distribution of the Dutch participants (n=100).

This study included a total of 100 participants, with **women** comprising an overwhelming majority (**86%**). The mean age of the study population was **26.4 ± 9.9 years**, indicating that while most participants were young adults, the sample included individuals from a broader age range.

A significant proportion of the cohort, nearly **80%**, possessed some form of **higher education**. Specifically, **58%** held a **bachelor's degree**, **17%** had attained a **master's degree**, and **5%** had completed a **PhD**, highlighting a highly educated participant group.

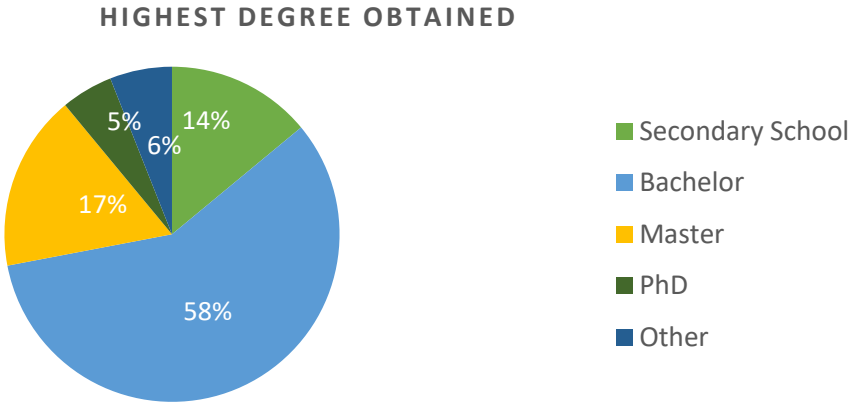


Figure 65 Distribution of Dutch participants by highest degree obtained.

The professional background of the **participants** was predominantly within the **healthcare sector**. The sample primarily consisted of **nursing students** (**70%**) and **teachers** (**23%**), but healthcare professionals also contributed to the sample, including **nurses (6%)** and **social workers (1%).**

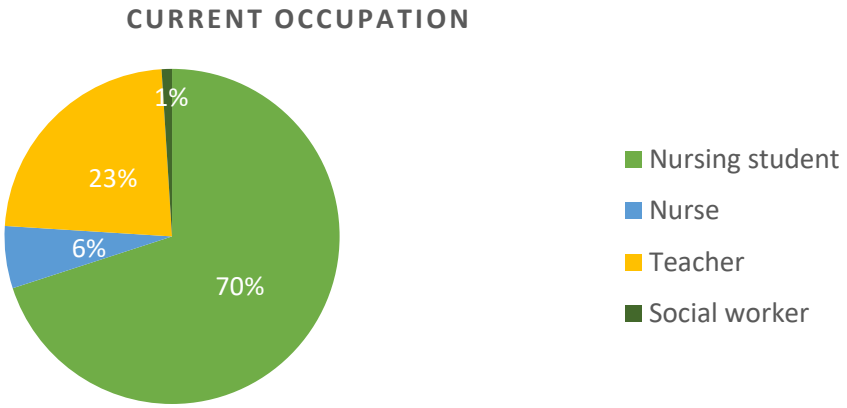


Figure 66 Distribution of Dutch participants by current occupation.

Regarding professional experience in patient care, **50%** had **less than one year of experience** in patient care, probably because participants were mainly nurse students. Almost one third (**31%)** had **between one and five years of experience**, while **6%** had **six to ten years of experience** and **12%** had **extensive experience of ten years or longer**.

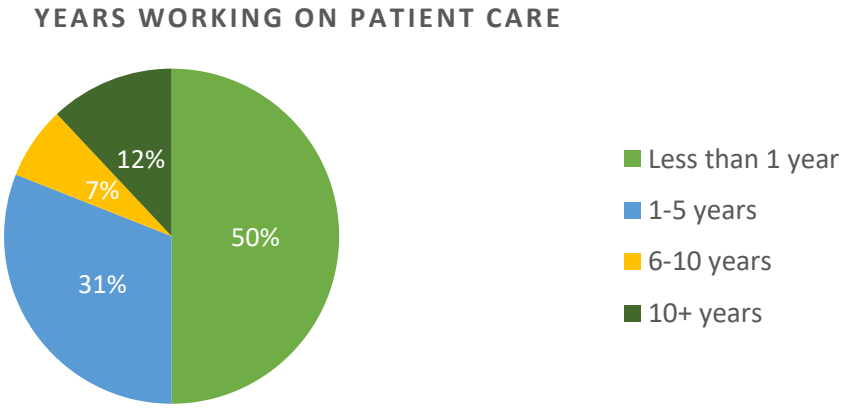


Figure 67 Distribution of Dutch participants by number of years working on patient care.

Most participants (**52%**) report **not having specific experience in geriatric care,** which clearly indicates a potential area for specialized training or focus.

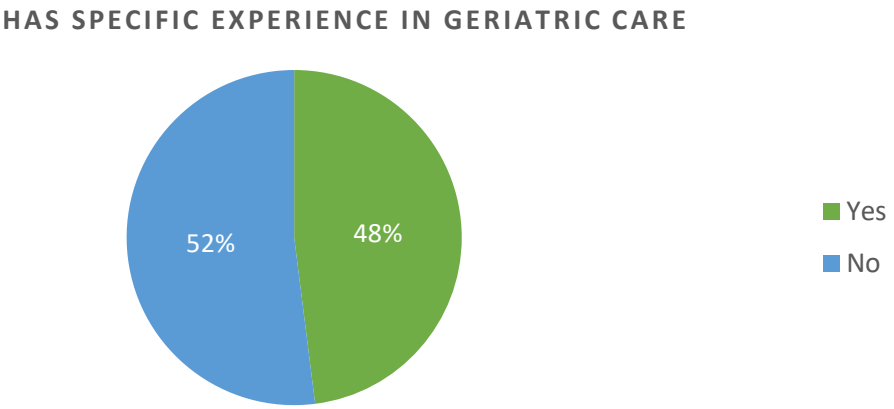


Figure 68 Experience in geriatric care among Dutch participants.

The working settings of the participants were also diverse, reflecting various healthcare environments. The majority, **31%**, worked in **home care**, emphasizing community-based services, while **22%** were engaged in **hospital care**, which is a common setting for patient interaction. A considerable portion, **14%**, worked in nursing homes, **9%** were affiliated with **universities, faculties, or nursing schools**, 5% worked in **rehabilitation centres** and **long-term care facilities employed 4%.** These diverse settings underscore the wide range of environments in which healthcare professionals operate and contribute to patient well-being.

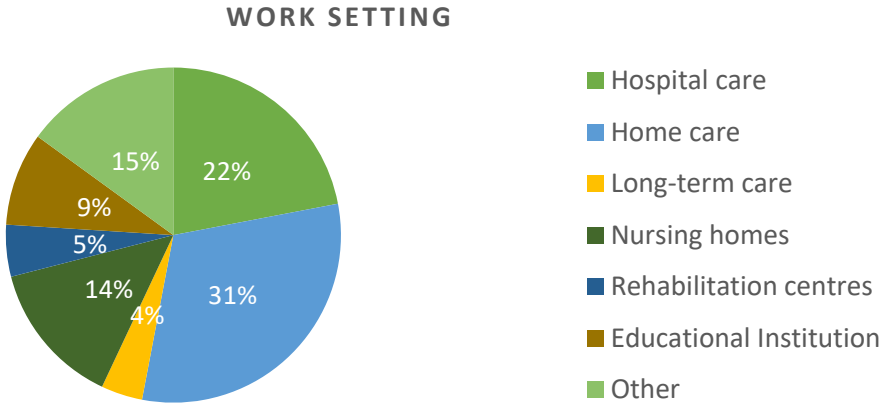


Figure 69 Distribution of work settings among Dutch respondents.

3.4.2 Training and skills

Out of the 100 participants included in this study, only **29%** reported having **received any specific training in geriatrics and gerontology**.

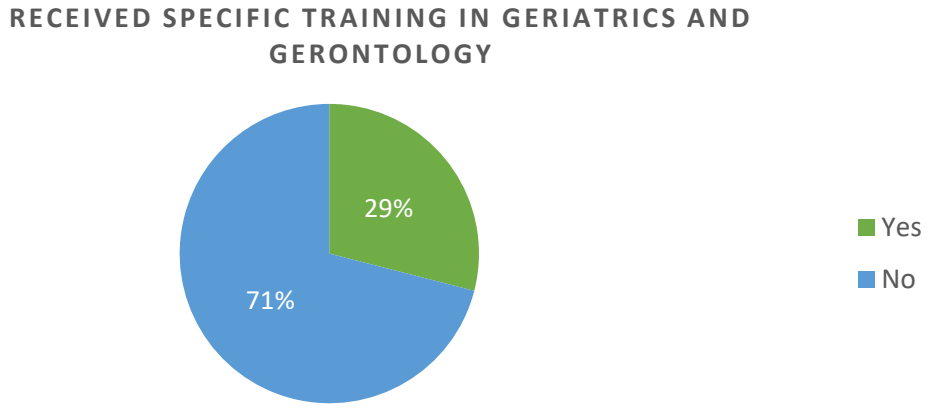


Figure 70 Proportion of Dutch respondents who received specific training in geriatrics and gerontology.

Among those who did receive such training, a majority, **66%, considered the training sufficient** to effectively manage the challenges associated with the older population. Another **24% found the training partially sufficient**, while **10%, indicated that the training was inadequate** for addressing the specific needs and particularities of this demographic group.

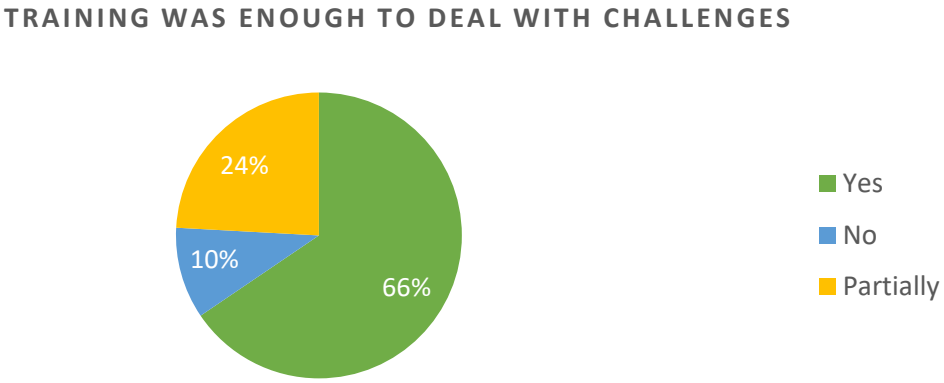


Figure 71 Dutch respondents' perception of whether their training was sufficient to deal with challenges.

Among participants who had received training in geriatrics and gerontology, several key topics were reported as being covered, with varying levels of emphasis. The topics **Dementia and Mental Health** and **Communication with Older Adults and Families** were addressed by all the participants (100%) as being covered in their training. The most frequently addressed topics were **Active Ageing, Quality of Life, and the Role of Older Adults in Society**, **Ageing Mechanisms and Physiological Changes, Chronic Disease Management and Preventive Care in Older Adults** and **Caregiver Support,**

Family Dynamics, and Social Support all with 96.6% of responses. **Fall Prevention, Mobility, and Rehabilitation** was covered in 93.1% of cases, while **Ethical, Legal Issues, and Person-Centred Care** featured 89.7%. Other prominent areas included **Nutrition, Hydration, and Wound Care**, **Comprehensive Geriatric Assessment and Intervention**, **Medication Management, Polypharmacy, and Drug Interactions**, **End-of-Life and Palliative Care**, **Geriatric Nursing, Mental Health**, **and Pain Management** and **Technologies for Supporting Geriatric Care** all with 86.2%. The less commonly addressed topic was **Green Policies, Sustainability, and Community Engagement** included in 79.3% of trainings.

Table 46 Topics covered during Dutch participants training.

Which topics were covered during the training?	%
Dementia and mental health	100.0
Communication with older adults and families	100.0
Active ageing, quality of life, and role of older adults in society	96.6
Ageing mechanisms and physiological changes	96.6
Chronic disease management and preventive care in older adults	96.6
Caregiver support, family dynamics, and social support	96.6
Fall prevention, mobility, and rehabilitation	93.1
Ethical, legal issues, and person-centred care	89.7
Nutrition, hydration, and wound care	86.2
Comprehensive geriatric assessment and intervention	86.2
Medication management, polypharmacy, and drug interactions	86.2
End-of-life and palliative care	86.2
Geriatric nursing, mental health, and pain management	86.2
Technologies for supporting geriatric care	86.2
Green policies, sustainability, and community engagement	79.3

Conversely, several participants identified notable gaps in their training in geriatrics and gerontology. The most frequently reported omission by all the participants was **Nutrition, Hydration, and Wound Care** (100%). **Green Policies, Sustainability, and Community Engagement** was cited by 27.6% of respondents, followed by **End-of-Life and Palliative Care** (6.9%) and **Geriatric Nursing, Mental Health, and Pain Management** (6.9%). Other areas perceived as insufficiently addressed included **Technologies for Supporting Geriatric Care, Ethical, Legal Issues, and Person-Centred Care, Dementia and Mental Health**, **Comprehensive Geriatric Assessment and Intervention, Medication Management, Polypharmacy, and Drug Interactions, Communication with Older Adults and Families** and **Fall Prevention, Mobility, and Rehabilitation**, all with 3.4%. The topics **Caregiver Support, Family Dynamics, and Social Support, Ageing Mechanisms and Physiological Changes, Chronic Disease**

Management and Preventive Care in Older Adults and **Active Ageing, Quality of Life, and the Role of Older Adults in Society** were not perceived as gaps by any of the participants.

Table 47 Training topics identified as missing by Dutch participants.

What skills do you think were lacking in this training?	%
Nutrition, hydration, and wound care	100.0
Green policies, sustainability, and community engagement	27.6
End-of-life and palliative care	6.9
Geriatric nursing, mental health, and pain management	6.9
Technologies for supporting geriatric care	3.4
Ethical, legal issues, and person-centred care	3.4
Dementia and mental health	3.4
Comprehensive geriatric assessment and intervention	3.4
Medication management, polypharmacy, and drug interactions	3.4
Communication with older adults and families	3.4
Fall prevention, mobility, and rehabilitation	3.4
Caregiver support, family dynamics, and social support	0.0
Ageing mechanisms and physiological changes	0.0
Chronic disease management and preventive care in older adults	0.0
Active ageing, quality of life, and role of older adults in society	0.0

Regarding specialised training, **32%** of all participants in the study **received specific training focused on caring for individuals with dementia.**

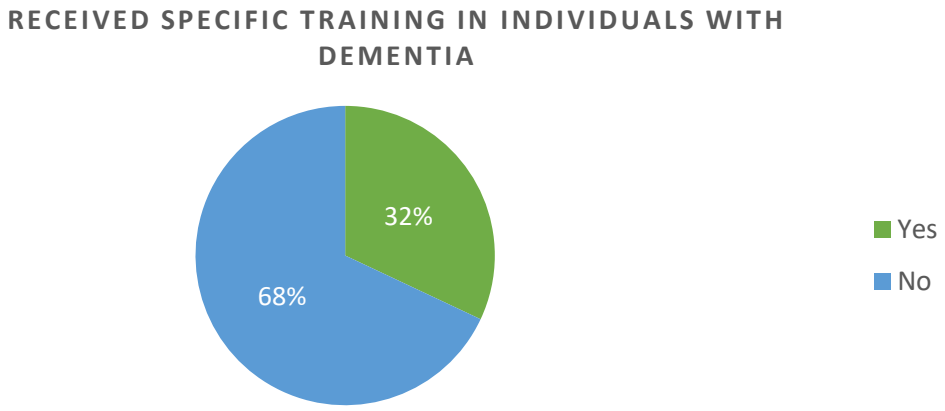


Figure 72 Proportion of Dutch individuals who received specific training in individuals with dementia.

Of this subgroup, only **34.4%** considered their **training fully sufficient to address** the complexities of dementia care. A larger proportion, **37.5%**, found their **training partially sufficient**, indicating some preparedness but also areas for improvement. Conversely, **28.1%**

reported that their **training was entirely insufficient** to meet the demands of caring for individuals with dementia.

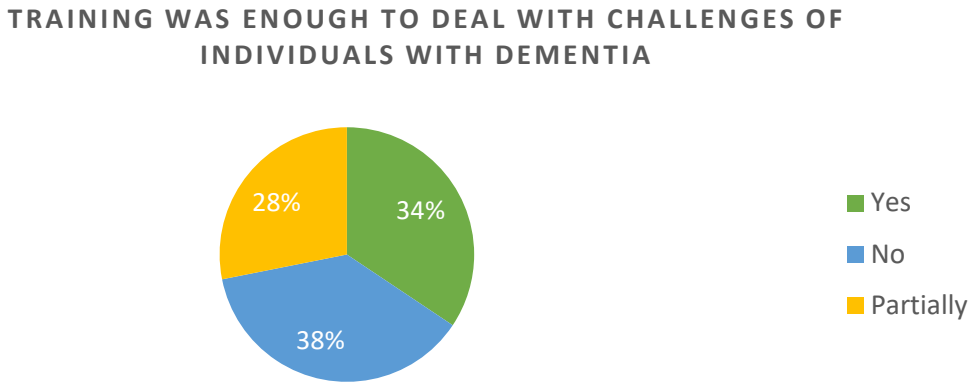


Figure 73 Perceptions of the Dutch individuals if their training was enough to deal with individuals with dementia.

Finally, the study assessed the participants' confidence levels across various aspects of dementia care. The areas in which participants expressed the highest confidence were **Providing Family Support and Education** (37%), **Communication Strategies for Individuals with Cognitive Decline** (26%) and **Managing Behavioural and Psychological Symptoms** (25%)**. Ethical Issues in Dementia Care** garnered confidence from 14% of participants, **Early Diagnosis and Management Strategies** was 12% and **End-of-Life Care in Dementia** was the area where participants reported lower confidence, at 5.0%.

Table 48 Challenges that Dutch participants reported within the care of individuals with dementia.

What aspects of dementia do you feel confident about?	%
Providing family support and education	37.0
Communication strategies for individuals with cognitive decline	26.0
Managing behavioural and psychological symptoms	25.0
Ethical issues in dementia care	14.0
Early diagnosis and management strategies	12.0
End-of-life care in dementia	5.0

The main challenges that these participants reported in the care of individuals with dementia are **time constraints** (74%), **difficulties communicating with individuals with dementia** (56%), **lack of support structures** (54%), **managing advanced disease stages** (49%) and **insufficient training** (40%).

Table 49 Challenges that Dutch participants reported within the care of individuals with dementia.

What challenges do you encounter in the care of individuals with dementia?	%
Time constraints	74.0
Difficulties communicating with individuals with dementia	56.0
Lack of support structures	54.0
Managing advanced disease stages	49.0
Insufficient training	40.0

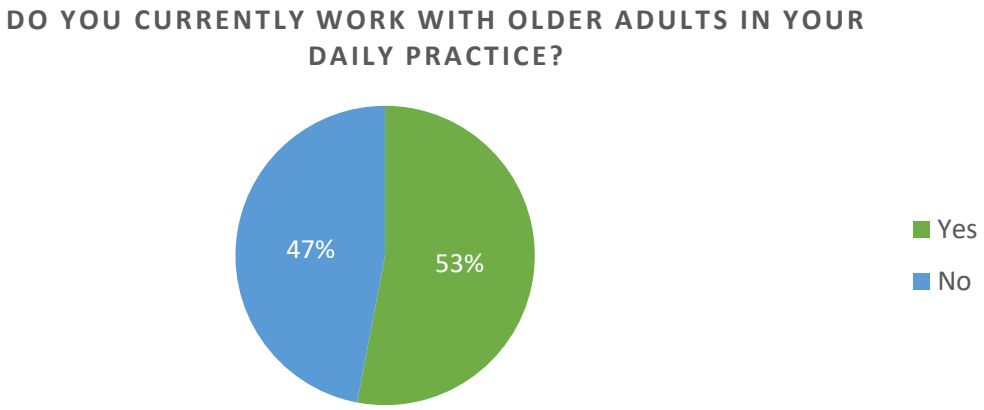


Figure 74 Proportion of Dutch individuals who work daily with older adults.

From all the participants, 53% work with older adults in their daily practice.

Their knowledge on some topics regarding geriatric care was analysed. The results present participants' self-reported knowledge across ten geriatric-related topics. Overall, the results suggest a moderate level of knowledge in most areas, with only a few topics showing a concentration of responses in the higher categories. Topics like **chronic diseases management, fall prevention and mobility, mental health** and **integrated care** had the highest percentage of participants reporting a good or very good understanding (levels 3 and 4). **Comprehensive geriatric assessment, Dementia, Geriatric nursing, Pain management** and **Palliative** care revealed a concerning gap, with over 30% of participants reporting low knowledge. These findings highlight specific areas where targeted educational interventions may be most needed.

Table 50 Self-reported knowledge levels across topics related to ageing and care among Dutch participants.

What is your current level of knowledge about the following topics?					
	1	**2**	**3**	**4**	**5**
Chronic disease management	4	12	56	24	4
Comprehensive geriatric assessment	28	35	30	5	2

Dementia	3	31	51	10	5
Fall prevention and mobility	3	14	44	28	11
Geriatric nursing	8	34	48	9	1
Green Policies	10	36	47	5	2
Integrated care	4	19	53	20	4
Mental health	4	17	53	19	7
Pain management	7	28	44	14	7
Palliative care	29	40	23	4	4
1 – No Knowledge; 3 – Average Knowledge: 5 – Deep Knowledge					

3.4.3 Needs and shortcomings

When asked which themes should receive greater emphasis in geriatric and gerontological nursing studies, participants highlighted a broad range of topics, suggesting important areas for curricular enhancement. **Chronic Disease Management and Preventive Care in older adults** emerged as the most pressing need, identified by 65% of respondents, followed by **Dementia and Mental Health** (44%), **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (42%) and **Caregiver Support, Family Dynamics, and Social Support** (40%). Other key areas seen as deserving more attention included **Comprehensive Geriatric Assessment and Intervention** (39%), **End-of-Life and Palliative Care** (37%), **Communication with Older Adults and Families** (35%), **Medication Management, Polypharmacy, and Drug Interactions** (31%), **Ethical, Legal Issues, and Person-Centred Care** (31%) and **Geriatric Nursing, Mental Health, and Pain Management** (30%). Although **Ageing Mechanisms and Physiological Changes** (28%), **Technologies for Supporting Geriatric Care** (27%), **Nutrition, Hydration, and Wound Care** (25%), **Fall Prevention, Mobility, and Rehabilitation** (24%) and **Green Policies, Sustainability, and Community Engagement** (22%) were ranked the lowest they were considered a relevant theme for future inclusion in training programs.

Table 51 Topics identified by Dutch participants as needing more emphasis in geriatric and gerontological nursing studies.

What are the main themes you think should be covered more in geriatric and gerontological nursing studies?	%
Chronic disease management and preventive care in older adults	65.0
Dementia and mental health	44.0
Active ageing, quality of life, and role of older adults in society	42.0
Caregiver support, family dynamics, and social support	40.0
Comprehensive geriatric assessment and intervention	39.0
End-of-life and palliative care	37.0

Communication with older adults and families	35.0
Medication management, polypharmacy, and drug interactions	31.0
Ethical, legal issues, and person-centred care	31.0
Geriatric nursing, mental health, and pain management	30.0
Ageing mechanisms and physiological changes	28.0
Technologies for supporting geriatric care	27.0
Nutrition, hydration, and wound care	25.0
Fall prevention, mobility, and rehabilitation	24.0
Green policies, sustainability, and community engagement	22.0

When asked "What improvements do you suggest for training programs in geriatric and gerontological nursing?" participants from the Netherlands highlighted several key areas for improving geriatric and gerontological nursing training. The responses highlighted a strong demand for **more practical, experience-based training** in geriatric and gerontological nursing programs. Many participants emphasised the importance of ensuring that all students complete at least **one clinical placement involving older adults**, particularly in settings focused on **dementia care** and **palliative care**, which are often underrepresented in current curricula. There was also frequent mention of integrating **person-centred and relationship-based approaches**, and of incorporating **experiential learning**, including simulation exercises and involvement of **older adults as active participants** in educational activities. Respondents expressed the need for better **alignment between classroom assignments and clinical practice**, more attention to **communication skills**, **behavioural sciences**, and **societal challenges** related to the ageing population. Finally, several stressed the importance of including topics like **future models of ageing, housing, and care policies**, as well as enhancing students' **critical thinking and clinical reasoning** abilities through case-based learning and real-world interaction. Participants were asked, "Do you consider that scientific research on geriatric and gerontological nursing is being sufficiently encouraged?". Most of the respondents **(52%) answered "Yes"** presenting several key justifications.

Among the participants who answered "Yes," the justifications suggest a moderate level of perceived **support for geriatric and gerontological nursing research**, particularly within the context of Dutch healthcare education. Some respondents mentioned that there is **significant attention to these topics in the Netherlands**, and that research activities are integrated into clinical placements, especially in home care and nursing home settings. While some noted that **students are required to conduct a large amount of research during training**, others acknowledged that the research is not always directly focused on geriatric or gerontological issues, but rather on broader healthcare themes.

Overall, the responses suggest that while opportunities for research exist, there may still be a need for greater visibility, focus, and direction regarding research specific to ageing and older care.

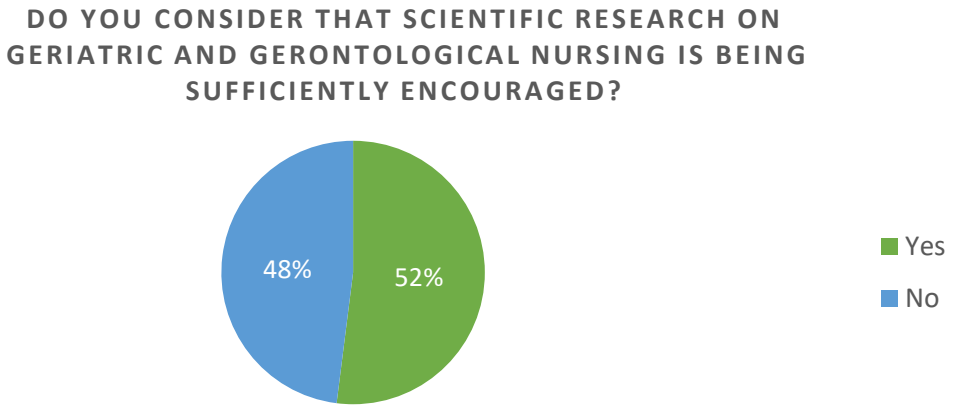


Figure 75 Proportion of Dutch individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged.

Among the **48% of respondents** who believe that geriatric and gerontological nursing research **is not** being sufficiently encouraged, several recurring concerns were identified. Many expressed **uncertainties or a lack of awareness** regarding the current state of research in geriatric and gerontological nursing, with several stating they had **no exposure to such research** or were **unsure how it is being promoted**. Some participants noted that **research in older people care receives less visibility and attention** compared to hospital-based or acute care research, suggesting a persistent **imbalance in research priorities**. A few highlighted the **low visibility of existing studies**, limited promotion of opportunities, and a **lack of encouragement during nursing education**, especially at the undergraduate level. One respondent remarked that the field is still seen as the "underdog" of healthcare, **underfunded, undervalued, and poorly recognised**, with outdated perceptions that geriatric care requires fewer skills. Concerns were also raised about **insufficient evidence-based practices** and **disconnects between research and real-world practice**, especially in international contexts where the quality of older care remains critical.

3.4.4 Development opportunities

The training needs expressed by participants reveal a clear interest in deepening knowledge in **dementia and mental health (29%)**, which emerged as the most prioritised area for further education. Closely following are **comprehensive geriatric assessment and intervention (27%),** and **medication management, polypharmacy, and drug interactions (21%). End-of-life and palliative care (18%)**, **caregiver support, family dynamics, and social support (17%)** and **communication with older adults and families (17%)** also ranked high, reflect a wish to adopt more holistic and proactive

approaches and the recognition of the complex social, and emotional dimensions of care. Participants further expressed interest in more clinically and ethical focused topics namely, **ethical and legal issues, and person-centred care (13%)**, **chronic disease management and preventive care in older adults (13%), ageing mechanisms and physiological changes (12%)**, **technologies for supporting geriatric care (11%), geriatric nursing, mental health, and pain management (11%)** and **nutrition, hydration, and wound care (10%). Active ageing, quality of life, and the role of older adults in society (9%), Green policies, sustainability, and community engagement (9%)** and **fall prevention, mobility, and rehabilitation (6%)** were the least mentioned**.** Overall, the results underscore a growing awareness of the multifaceted nature of geriatric care and the need for **interdisciplinary, ethically grounded, and person-focused training** that responds to the current and future demands of an ageing population.

Table 52 Areas in which Dutch participants would like to improve through training.

What areas would you like to improve through training in geriatrics and gerontology?	%
Dementia and mental health	29.0
Comprehensive geriatric assessment and intervention	27.0
Medication management, polypharmacy, and drug interactions	21.0
End-of-life and palliative care	18.0
Caregiver support, family dynamics, and social support	17.0
Communication with older adults and families	17.0
Ethical, legal issues, and person-centred care	13.0
Chronic disease management and preventive care in older adults	13.0
Ageing mechanisms and physiological changes	12.0
Technologies for supporting geriatric care	11.0
Geriatric nursing, mental health, and pain management	11.0
Nutrition, hydration, and wound care	10.0
Active ageing, quality of life, and role of older adults in society	9.0
Green policies, sustainability, and community engagement	9.0
Fall prevention, mobility, and rehabilitation	6.0

When asked about preferred training formats in geriatrics and gerontology, the majority of participants indicated a preference for **in-person training (67%)**, suggesting a continued value placed on face-to-face interaction, hands-on learning, and opportunities for direct engagement with peers and instructors. **Online training (37%)** was selected by nearly a third of respondents, highlighting the relevance of accessible and self-paced learning, especially for professionals managing demanding schedules or located in remote areas. **Hybrid formats** were only preferred by **7%** of the participants**.**

These results point to the importance of offering **diverse and adaptable training modalities** to effectively meet the varied needs and preferences of healthcare professionals in the field of ageing.



Figure 76 Proportion of Dutch individuals who prefer different types of training.

When considering the most effective formats for professional development in geriatrics and gerontology, participants strongly favoured **experiential learning (60%),** highlighting the importance of hands-on, practice-based approaches in building confidence and clinical skills. **Clinical simulation (36%), practical workshops (33%) and theoretical-practical courses (29%)** and were also highly rated, underscoring the value of learning through direct experience and real-world application combined with conceptual understanding with applied components. **Training games (28%)**, **coaching to support learning and interactive online classes (24%) and interactive online classes (15%)** were still considered relevant, but while digital and innovative methods are useful, they are most effective when complementing more experience-based training formats.

Table 53 Preferred training formats for professional development reported by Dutch participants.

What format of training do you consider most effective for your professional development?	%
Experiential learning	60.0
Clinical simulation	36.0
Practical workshops	33.0
Theoretical-practical courses	29.0
Training games	28.0
Coaching to support learning	24.0
Interactive online classes	15.0

When asked about the amount of time they could realistically dedicate to continuing education in geriatrics and gerontology, the majority of participants indicated a preference for short, manageable commitments. **A substantial 94% stated they could dedicate 1 to 2 hours per week**, while **4% reported being able to allocate 3 to 5 hours**. Only **2% said they could commit more than 5 hours weekly**. These findings highlight the need for flexible and concise training formats that can be easily integrated into the busy routines of healthcare professionals.

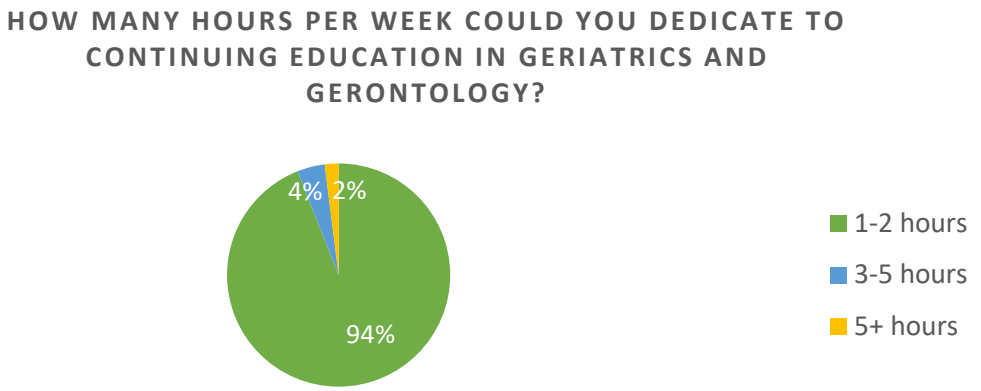


Figure 77 Dutch participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology.

When asked about their availability and willingness to participate in training outside regular work hours, **the majority of participants (69%)** responded **that they would not be available or willing** to do so. Only 31% answered positively, indicating they would be willing to engage in training before or after work or on their days off.

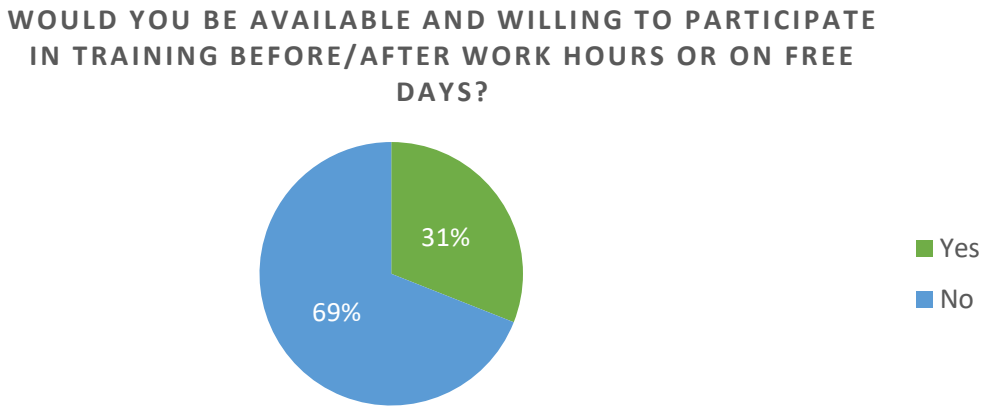


Figure 78 Proportion of Dutch participants willing to attend training before or after work hours, or during their free time.

When asked if they would like to receive more ongoing training on geriatric and gerontological care, **a clear majority of 60 participants answered yes**, expressing strong interest in continuing their education in this field. Meanwhile, **40 participants responded no**, indicating less enthusiasm for

additional training. This demonstrates a significant demand for further learning opportunities among professionals working with older adults.

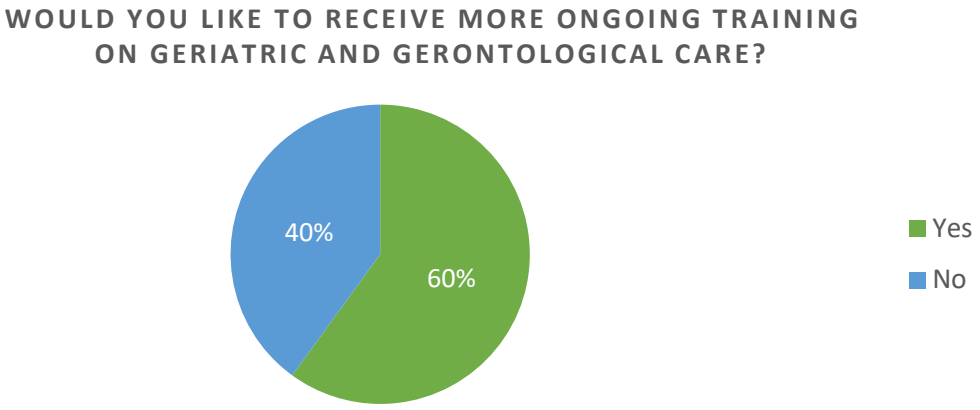


Figure 79 Proportion of Dutch participants interested in receiving additional ongoing training in geriatric and gerontological care.

Participants identified several key motivations for pursuing training in geriatrics and gerontology. The strongest driver was clearly **career advancement (31%). Personal fulfilment (23%), interest in improving patient outcomes (19%), professional recognition and expertise (18%), demographic trends (13%)** and **supportive learning environment (12%)** also played an important role in motivating participation. **Access to better employment opportunities (6%)** was the motivation less frequently cited. These results highlight that the primary incentives for training are focused on making a meaningful impact on patient care and personal and professional growth.

Table 54 Factors motivating Dutch participants to pursue further specialisation or education in geriatrics.

What factors would motivate you to pursue further specialisation / education in geriatrics?	%
Career Advancement	31.0
Personal fulfilment	23.0
Interest in improving patient outcomes	19.0
Professional Recognition and Expertise	18.0
Demographic trends	13.0
Supportive Learning Environment	12.0
Access to Better Employment Opportunities	6.0

When asked about the specific areas in which they would like to deepen their knowledge, participants most frequently pointed to **comprehensive geriatric assessment and intervention (36%),** followed by **dementia and mental health (35%)** and **medication management and polypharmacy**

(33%). Areas such as **end-of-life and palliative care (24%)**, **green policies, sustainability, and community engagement (23%), caregiver and family support (22%)**, **ethical, legal issues, and person-centred care (20%)** and **geriatric nursing and pain management (20%)** also received considerable interest. Participants also expressed a desire to further explore **communication with older adults (19%)**, **ageing mechanisms and physiological changes (19%)**, **chronic disease management and preventive care in older adults (18%)**, **technologies for supporting geriatric care (14%)** and **active ageing and the societal role of older adults (13%).** Less frequently selected, though still relevant, were topics like **nutrition and wound care (11%)**, and **fall prevention and rehabilitation (7%)**. These responses reflect a broad interest across clinical, psychosocial, and systemic dimensions of geriatric care.

Table 55 Specific areas in which Dutch participants wish to deepen their knowledge in geriatric and gerontological care.

In which specific areas would you like to deepen your knowledge?	%
Comprehensive geriatric assessment and intervention	36.0
Dementia and mental health	35.0
Medication management, polypharmacy, and drug interactions	33.0
End-of-life and palliative care	24.0
Green policies, sustainability, and community engagement	23.0
Caregiver support, family dynamics, and social support	22.0
Ethical, legal issues, and person-centred care	20.0
Geriatric nursing, mental health, and pain management	20.0
Communication with older adults and families	19.0
Ageing mechanisms and physiological changes	19.0
Chronic disease management and preventive care in older adults	18.0
Technologies for supporting geriatric care	14.0
Active ageing, quality of life, and role of older adults in society	13.0
Nutrition, hydration, and wound care	11.0
Fall prevention, mobility, and rehabilitation	7.0

The most frequently reported barrier to participating in ongoing training was **lack of time (66%)**, highlighting a significant constraint for the majority of respondents. **Limited access to courses (19%) and cost (13%)** were also a notable obstacle, suggesting that financial considerations play an important role in limiting participation. Other reported barrier included **lack of supporting structures (10%)**, indicating that logistical and institutional factors also impact professionals' ability to engage in continued education.

Table 56 Dutch participants reported obstacles to participation in continuing education.

Are there any barriers that prevent you from participating in ongoing training?	%
Lack of time	66.0
Limited access to courses	19.0
Cost	13.0
Lack of supporting structures	10.0

3.4.5 Green policies and sustainability in geriatric care

When asked about their familiarity with green policies and sustainable practices in healthcare, **37 participants responded affirmatively**, while **63 reported not being familiar** with these concepts. This indicates that **a significant majority lack awareness** of sustainability-related strategies in the healthcare context, particularly within geriatric care, suggesting an important gap in knowledge that could be addressed through targeted educational efforts.

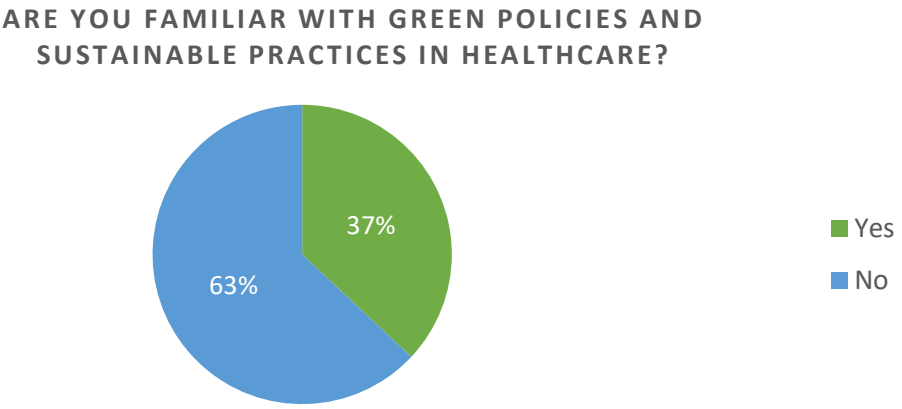


Figure 80 Proportion of Dutch individuals who are familiar with green policies and sustainable practices in healthcare.

From those aware with green policies and sustainable practices in healthcare, only **3%** of **participants** reported having received training on sustainable practices in healthcare, while **(97%)** indicated they had not. These results further underscore the **limited exposure to sustainability education** among professionals, reinforcing the need to integrate **green policies and sustainable practices** more explicitly into training programmes in geriatrics and gerontology.

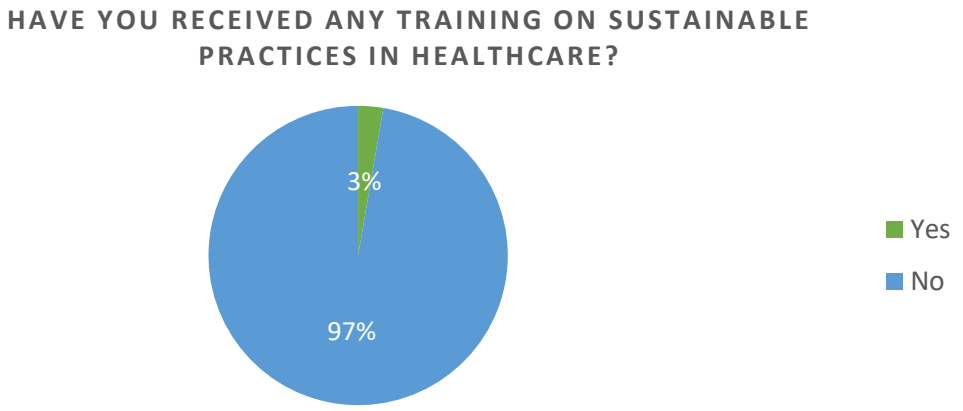


Figure 81 Proportion of Dutch individuals who received specific training on sustainable practices in healthcare.

When asked about the application of sustainable practices in their workplace, **41%** of participants reported engaging in **recycling materials** such as paper, plastic, or glass. Other **40%** stated they ensure the **safe disposal of hazardous waste**, including diapers, bandages, or other medical waste. Measures to **reduce energy consumption** were mentioned by **24%**, while **14%** use **environmentally friendly products.** Only **8%** apply **water conservation practices**.

Table 57 Dutch participants-reported implementation of environmentally sustainable practices at work.

In your workplace, do you apply any sustainable practices?	**%**
Recycling materials (e.g., paper, plastic, glass)	41.0
Safe disposal of hazardous waste (e.g., diapers, bandages, medical waste)	40.0
Reducing energy consumption (e.g., efficient lighting, equipment)	24.0
Using environmentally friendly products	14.0
Water conservation measures	8.0

When asked about the challenges faced in implementing sustainable practices in their work environment, **69**% of participants identified a **limited access to eco-friendly resources** as the main barrier, **45**% reported **lack of training on green policies** while **27%** cited the **cost of sustainable alternatives** as challenges. Additionally, **24%** pointed to **institutional resistance to change**, and **20%** mentioned **time constraints**, highlighting the need for systemic support and accessible training to foster more sustainable practices in geriatric care.

Table 58 Challenges faced by Dutch participants in implementing sustainable practices at work.

What challenges do you face in implementing sustainable practices in your work environment?	**%**
Limited access to eco-friendly resources	69.0

Lack of training on green policies	45.0
Cost of sustainable alternatives	27.0
Institutional resistance to change	24.0
Time constraints	20.0

The vast majority of participants (**85%**) believe that **incorporating green policies into nursing education is important**, while only **15%** responded negatively. This indicates a strong consensus on the relevance of sustainability and environmental responsibility within the professional training of nurses.

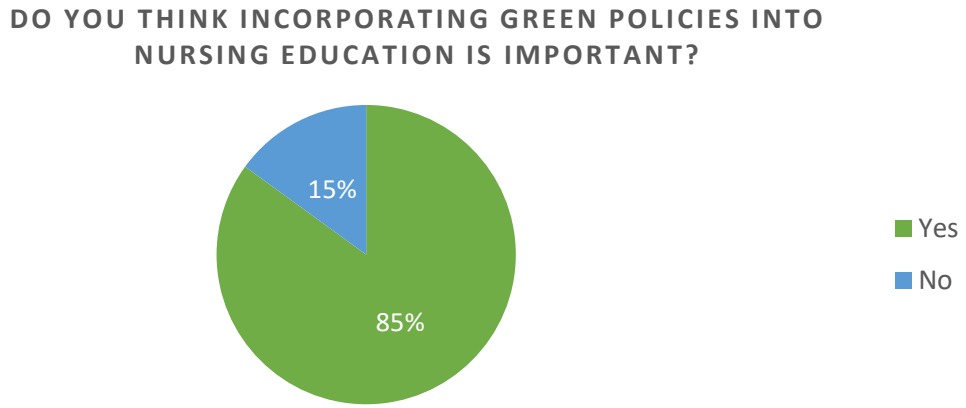


Figure 82 Proportion of Dutch individuals who think is important to incorporate green policies into nursing education.

Among the participants who responded affirmatively to the importance of incorporating green policies into nursing education, a recurring theme was the **urgent need to prepare future healthcare professionals for environmentally responsible practice**. Many highlighted that nurses, particularly at the bachelor's level, have the potential to **drive sustainable change within healthcare institutions**, and that education plays a central role in developing the **competencies, leadership, and critical thinking skills** needed for this. Several noted that the healthcare sector has a **significant ecological footprint**, and climate-related issues such as **air pollution and heat stress** disproportionately affect vulnerable populations, especially older adults, making sustainability highly relevant to geriatric care. Respondents stressed that introducing sustainability concepts early in training can **normalize eco-conscious behaviour**, foster **student innovation**, and align nursing practice with broader global challenges. Although a few voiced concern about curriculum overload, the majority viewed sustainability not as an optional topic, but as a **core responsibility** of modern nursing education, directly linked to **health promotion, advocacy, and future-readiness**.

Participants highlighted several key areas where education on sustainability could be most beneficial. The majority emphasised **use of eco-friendly materials and products (49%),** closely followed by **environmental preservation education for both staff and patients (46%).**

Wa**ste management and recycling (37%)** and **reducing energy consumption 335%)**, were also considered important topics. Additionally, 29% of the participants valued education on **resource conservation (57%)** and in **safe disposal of hazardous waste (27%)**, indicating a strong interest in practical, actionable sustainability practices within healthcare settings.

Table 59 Sustainability areas that Dutch participants believe should be emphasised in geriatric and gerontological care.

In your opinion, what areas of sustainability should be emphasised in geriatric and gerontological care?	%
Use of eco-friendly materials and products	49.0
Environmental preservation education for staff and patients	46.0
Waste management and recycling	37.0
Reducing energy consumption	33.0
Resource conservation	29.0
Safe disposal of hazardous waste	27.0

A significant majority of respondents **(60%)** are only ***somewhat confident* in safely disposing of hazardous waste** used in the care of older adults, while just **28% feel *very confident***. Additionally, **12%** admit they are ***not confident* at all.** This indicates a potential gap in training or institutional support regarding hazardous waste management in geriatric care settings. The relatively low proportion of respondents who feel fully confident suggests the need for improved education and clearer protocols to ensure safety and compliance.

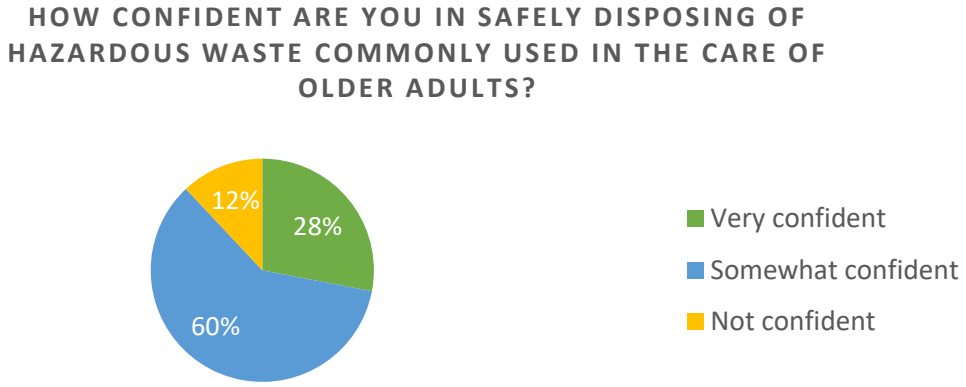


Figure 83 Confidence levels that Dutch participants reported in safely disposing hazardous waste commonly used in the care of older adults.

Participants believe several practices could enhance sustainability in the care of older adults. The most supported measure, with **54%**, is **providing training on green policies**. **Encouraging the use of reusable products** as also widely favoured by **53%** of respondents. Additionally, **implementing more recycling initiatives** was seen as important by **44%**, while **using renewable energy sources** and improving **waste disposal systems for hazardous materials** garnered support from both **33%** participants. These responses reflect a strong interest in both education and practical actions to foster environmental sustainability in geriatric care.

Table 60 Dutch participants reported strategies to improve environmental sustainability in geriatric care.

What practices do you believe would improve sustainability in the care of older adults?	%
Providing training on green policies	54.0
Encouraging the use of reusable products	53.0
Implementing more recycling initiatives	44.0
Using renewable energy sources	33.0
Improving waste disposal systems for hazardous materials	33.0

A clear majority of participants, **88**%, expressed willingness to participate in training programs focused on sustainable healthcare practices. Only **12%** indicated they would not be willing to participate, demonstrating strong overall interest in gaining knowledge and skills related to sustainability in healthcare settings.

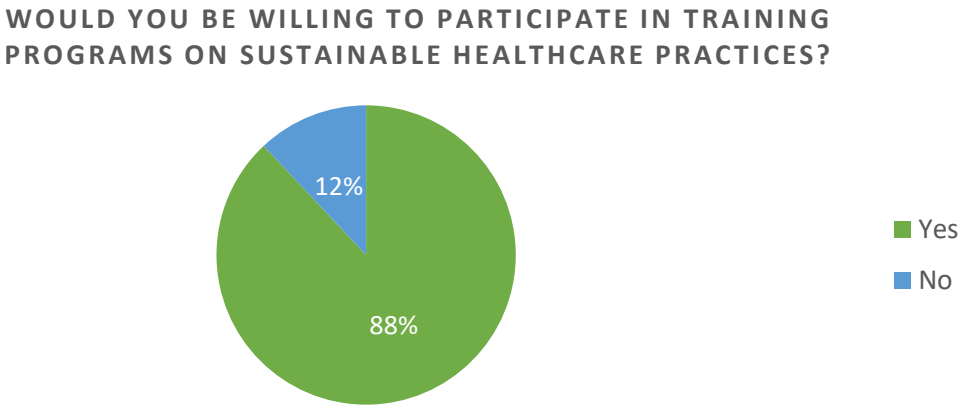


Figure 84 Proportion of Dutch individuals who would be willing to participate in training programs on sustainable healthcare practices.

The suggestions provided by participants for promoting sustainable practices in geriatric nursing emphasized the need for both **system-level support and individual awareness**. Many respondents advocated for stronger **institutional policies and leadership commitment** combined with **grassroots initiatives** that empower nursing staff at all levels to adopt environmentally conscious

behaviours. A recurring theme was the importance of **reducing waste**, particularly in relation to medications and disposable materials, and the need to **train staff in proper waste management**. Several participants highlighted the role of **education and awareness-raising**, both for current professionals and students, as essential in building **sustainable competencies**, promoting **environmental responsibility**, and enabling nurses to implement change in their organizations. Suggestions also included the use of **recyclable materials**, **energy-efficient equipment**, and the development of **patient and staff education** on sustainability. Some stressed that integrating these topics into nursing curricula would help normalize sustainability as part of professional identity and practice. Overall, the responses reflect a desire to make sustainability a **shared responsibility between individuals, educational institutions, and healthcare organisations**.

3.5 Portugal

3.5.1 Demographics

This study included a total of 100 participants, with **women** comprising the majority (**87%**, n = 87). The mean age of the study population was **42.7 ± 12 years**, indicating a relatively diverse age range among the participants.

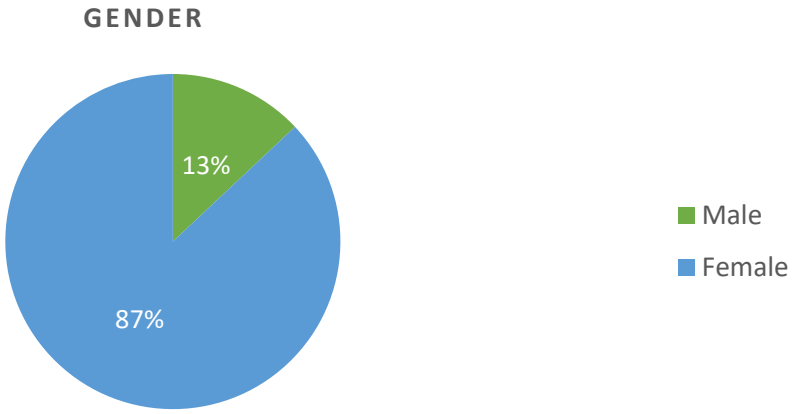


Figure 85 Gender distribution of the Portuguese participants (n=100).

A significant proportion of the cohort, nearly **90%**, possessed some form of **higher education**. Specifically, **26%** held a **bachelor's degree**, **34%** had attained a **master's degree**, and **30%** had completed a **PhD**, highlighting a highly educated participant group.

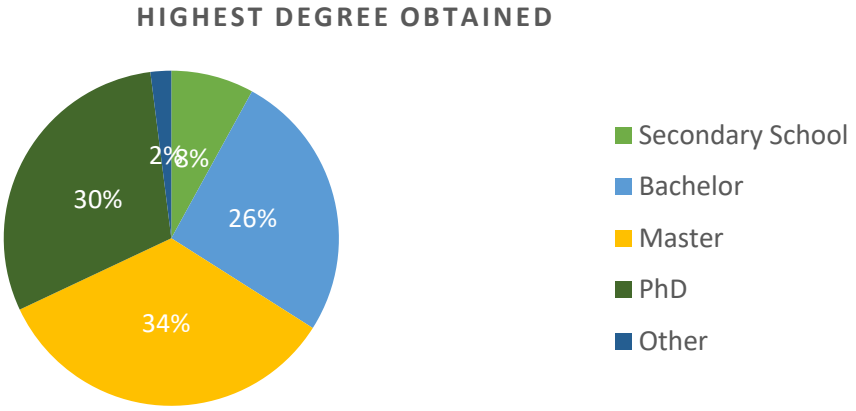


Figure 86 Distribution of Portuguese participants by highest degree obtained.

The professional background of the **participants** was predominantly within the **healthcare sector**. The sample primarily consisted of **nurses** (**59%**), **teachers** (**21%**), and **nursing students** (**10%**). Other healthcare professionals also contributed to the sample, including **doctors** (**2%**), **gerontologists**, **physiotherapists** and **care home assistants** (8%), ensuring a broad representation of the healthcare workforce.

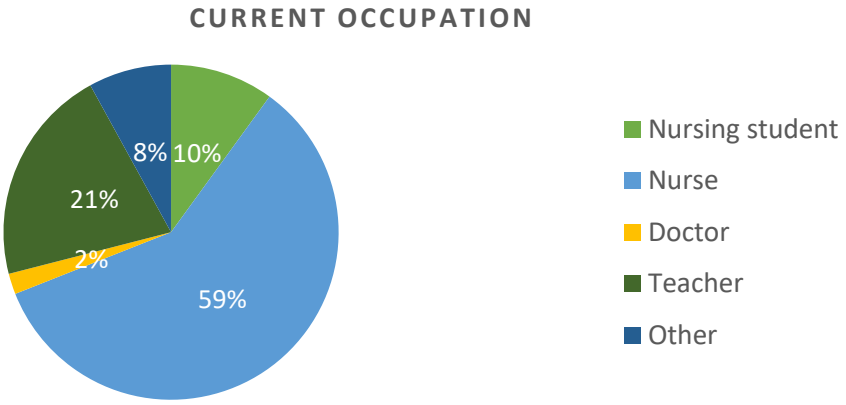


Figure 87 Distribution of Portuguese participants by current occupation.

Regarding professional experience in patient care, **68%** had **extensive experience of ten years or longer**, indicating a substantial presence of expert professionals within the study. Only **2%** of the participants had **less than one year of experience** in patient care, **17%** had **between one and five years of experience**, while **13%** had **six to ten years of experience**.

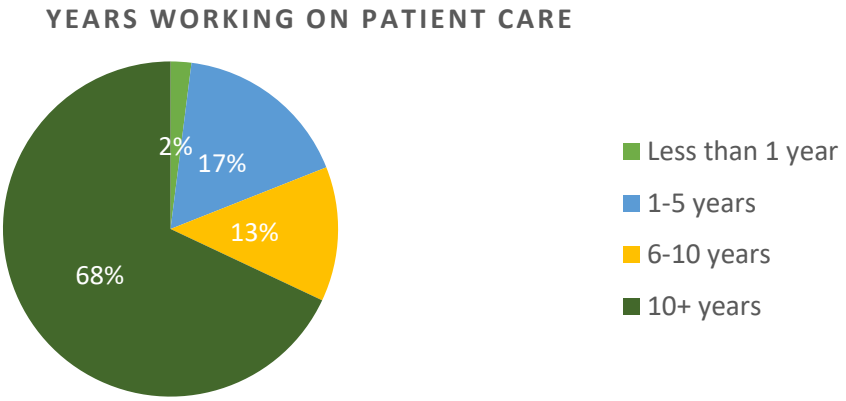


Figure 88 Distribution of Portuguese participants by number of years working on patient care.

While a majority of participants (**63%**) report **having specific experience in geriatric care**, a substantial proportion (**33%**) **do not**, which may indicate a potential area for specialized training or focus. The "**Other**" category (**4%**) includes individuals whose professional activity is solely related to teaching geriatrics and ageing in higher education.

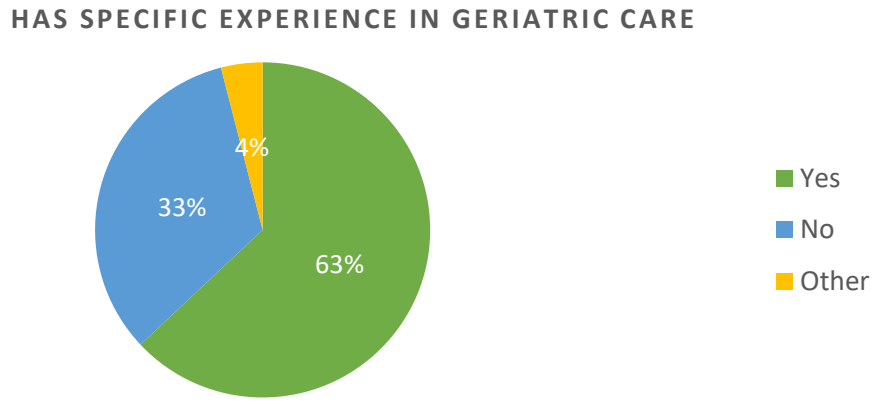


Figure 89 Experience in geriatric care among Portuguese participants.

The working settings of the participants were also diverse, reflecting various healthcare environments. The majority, **39%,** were engaged in **hospital care**, which is a common setting for patient interaction. A considerable portion, **19%**, worked in **home care**, emphasizing community-based services. The option "Other" corresponds to **15%** of the participants who indicated working in **primary care** (in family health units or local health units). While **12%** were affiliated with **universities, faculties, or nursing schools**, indicating roles in education or academic research, **11%** of the participants' workplaces were **nursing homes**, **3%** worked in **long-term care facilities** and **rehabilitation centres** employed only **1%** of the participants. These diverse settings underscore the wide range of environments in which healthcare professionals operate and contribute to patient well-being.

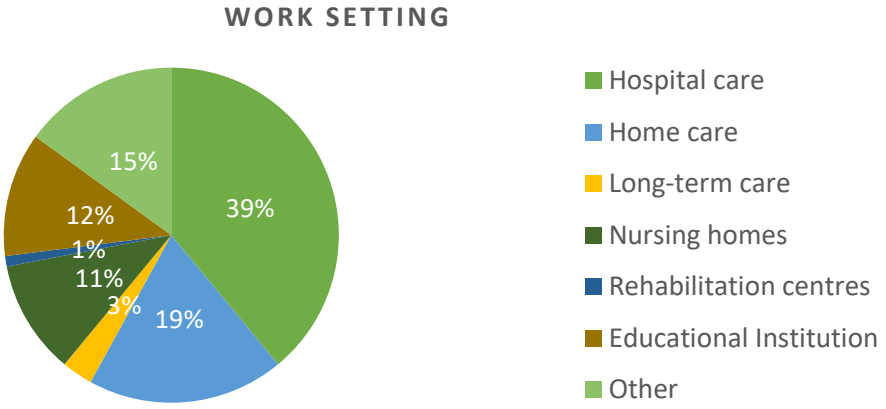


Figure 90 Distribution of work settings among Portuguese respondents.

3.5.2 Training and skills

Out of the 100 participants included in this study, only **31%** reported having **received any specific training in geriatrics and gerontology**.

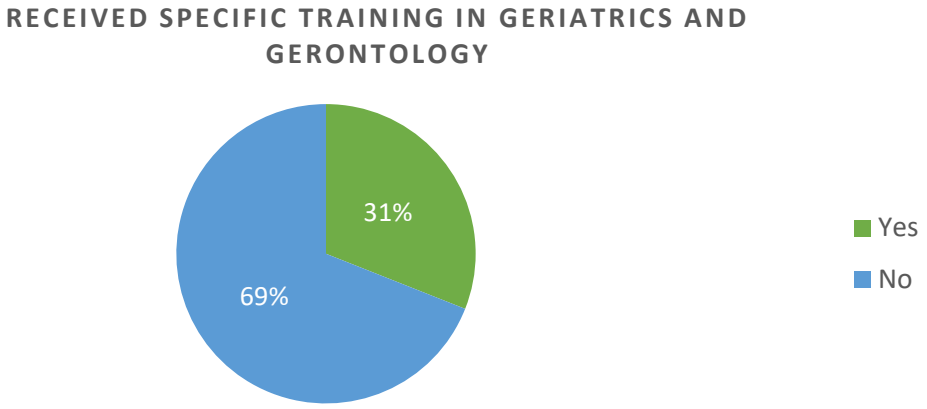


Figure 91 Proportion of Portuguese respondents who received specific training in geriatrics and gerontology.

Among those who did receive such training, a majority, **52%, considered the training sufficient** to effectively manage the challenges associated with the older population. Another **32% found the training partially sufficient**, while **16%, indicated that the training was inadequate** for addressing the specific needs and particularities of this demographic group.

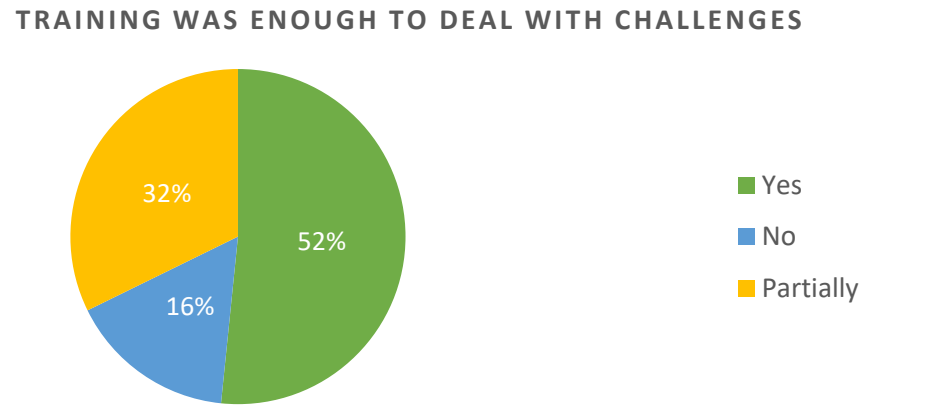


Figure 92 Portuguese respondents' perception of whether their training was sufficient to deal with challenges.

Among participants who had received training in geriatrics and gerontology, several key topics were reported as being covered, with varying levels of emphasis. The most frequently addressed topics were **Active Ageing, Quality of Life, and the Role of Older Adults in Society**, **Fall Prevention, Mobility, and Rehabilitation, Ageing Mechanisms and Physiological Changes** and **Ethical, Legal Issues, and Person-Centred Care,** all with 90.3% of responses. **Chronic Disease Management and Preventive Care in Older Adults** was covered in 83.9% of cases, while **Dementia and Mental Health** featured 80.6%.

Comprehensive Geriatric Assessment and Intervention featured in 74.2% of the training and **End-of-Life and Palliative Care** was included in 71% of trainings. Other prominent areas included **Nutrition, Hydration, and Wound Care**, **Caregiver Support, Family Dynamics, and Social Support** and **Communication with Older Adults and Families**, each reported by 64.5% of the participants, followed closely by **Medication Management, Polypharmacy, and Drug Interactions** (61.3%), and **Geriatric Nursing, Mental Health, and Pain Management** (61.3%). Less commonly addressed topics were **Technologies for Supporting Geriatric Care** (38.7%), and **Green Policies, Sustainability, and Community Engagement**, which was the least frequently covered (19.4%).

Table 61 Topics covered during Portuguese participants training.

Which topics were covered during the training?	%
Active ageing, quality of life, and role of older adults in society	90.3
Fall prevention, mobility, and rehabilitation	90.3
Ageing mechanisms and physiological changes	90.3
Ethical, legal issues, and person-centred care	90.3
Chronic disease management and preventive care in older adults	83.9
Dementia and mental health	80.6
Comprehensive geriatric assessment and intervention	74.2
End-of-life and palliative care	71.0
Nutrition, hydration, and wound care	64.5
Caregiver support, family dynamics, and social support	64.5
Communication with older adults and families	64.5
Medication management, polypharmacy, and drug interactions	61.3
Geriatric nursing, mental health, and pain management	61.3
Technologies for supporting geriatric care	38.7
Green policies, sustainability, and community engagement	19.4

Contrarywise, several participants identified notable gaps in their training in geriatrics and gerontology. The most frequently reported omission was **Green Policies, Sustainability, and Community Engagement**, cited by 64.5% of respondents, followed by **Technologies for Supporting Geriatric Care** (58.1%). Other areas perceived as insufficiently addressed included **Medication Management, Polypharmacy, and Drug Interactions** (28.5%), **Geriatric Nursing, Mental Health, and Pain Management** (25.8%), **Ethical, Legal Issues, and Person-Centred Care** (22.6%) and **Nutrition, Hydration, and Wound Care** (22.6%). Additionally, 19.4% of participants reported gaps in **Caregiver Support, Family Dynamics, and Social Support, Dementia and Mental Health**, **Comprehensive Geriatric Assessment and Intervention** and **Communication with Older Adults and Families.** Fewer participants reported insufficient coverage in **Ageing Mechanisms and Physiological Changes** (9.7%),

Chronic Disease Management and Preventive Care in Older Adults (9.7%), **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (9.7%), **End-of-Life and Palliative Care** (6.5%) and **Fall Prevention, Mobility, and Rehabilitation** was the least reported gap, noted by only **3.2%** of respondents.

Table 62 Training topics identified as missing by Portuguese participants.

What skills do you think were lacking in this training?	%
Green policies, sustainability, and community engagement	64.5
Technologies for supporting geriatric care	58.1
Medication management, polypharmacy, and drug interactions	25.8
Geriatric nursing, mental health, and pain management	25.8
Ethical, legal issues, and person-centred care	22.6
Nutrition, hydration, and wound care	22.6
Caregiver support, family dynamics, and social support	19.4
Dementia and mental health	19.4
Comprehensive geriatric assessment and intervention	19.4
Communication with older adults and families	19.4
Ageing mechanisms and physiological changes	9.7
Chronic disease management and preventive care in older adults	9.7
Active ageing, quality of life, and role of older adults in society	9.7
End-of-life and palliative care	6.5
Fall prevention, mobility, and rehabilitation	3.2

Regarding specialised training, **34%** of all participants in the study **received specific training focused on caring for individuals with dementia.**

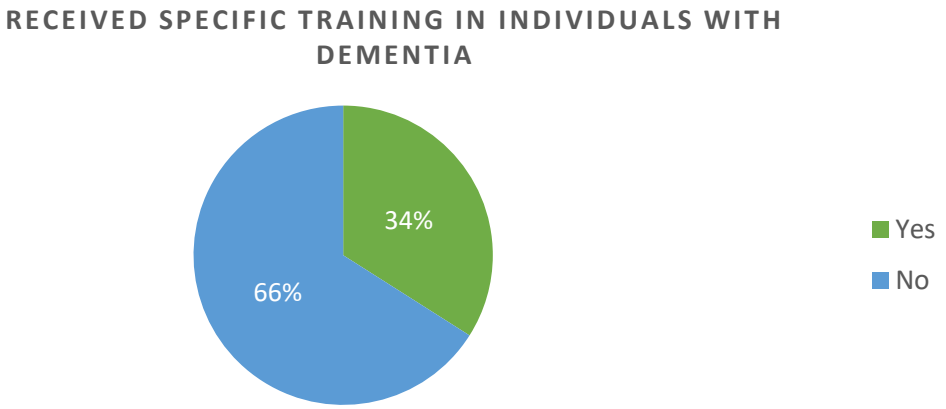


Figure 93 Proportion of Portuguese individuals who received specific training in individuals with dementia.

Of this subgroup, only **29%** considered their **training fully sufficient to address** the complexities of dementia care. A larger proportion, **62%**, found their **training partially sufficient**, indicating some preparedness but also areas for improvement. Conversely, **9%** reported that their **training was entirely insufficient** to meet the demands of caring for people living with dementia.

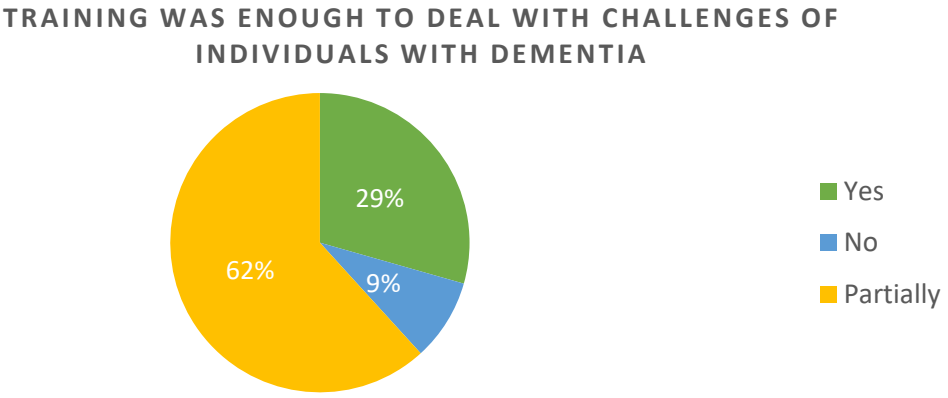


Figure 94 Perceptions of the Portuguese individuals if their training was enough to deal with the individuals with dementia.

Finally, the study assessed the participants' confidence levels across various aspects of dementia care. The areas in which participants expressed the highest confidence were **Managing Behavioural and Psychological Symptoms** (69%) and **Providing Family Support and Education** (58%). **End-of-Life Care in Dementia** garnered confidence from 38% of participants, **Ethical Issues in Dementia Care** was an area of confidence for 33% and **Early Diagnosis and Management Strategies** was 30%. **Communication Strategies for Individuals with Cognitive Decline** was the area where participants reported lower confidence, at 16%.

Table 63 Aspects of dementia care in which Portuguese participants reported confidence.

What aspects of dementia do you feel confident about?	%
Managing behavioural and psychological symptoms	69.0
Providing family support and education	58.0
End-of-life care in dementia	38.0
Ethical issues in dementia care	33.0
Early diagnosis and management strategies	30.0
Communication strategies for individuals with cognitive decline	16.0

The main challenges that these participants reported in the care of individuals with dementia are lack of support structures (72%), insufficient training (55.0%), difficulties communicating with individuals with dementia (52%), managing advanced disease stages (52%) and time constraints (30%).

Table 64 Challenges that Portuguese participants reported within the care of individuals with dementia.

What challenges do you encounter in the care of individuals with dementia?	%
Lack of support structures	72.0
Insufficient training	55.0
Difficulties communicating with individuals with dementia	52.0
Managing advanced disease stages	52.0
Time constraints	30.0

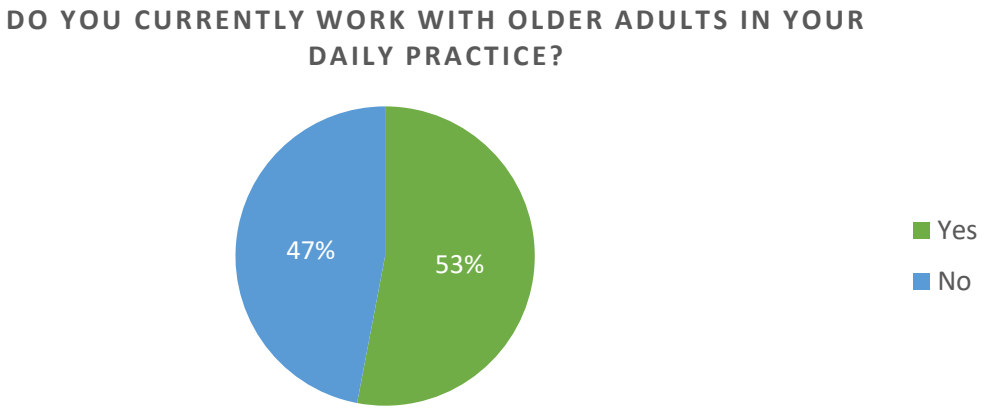


Figure 95 Proportion of Portuguese individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged.

From all the participants, 53% work with older adults in their daily practice.

Their knowledge on some topics regarding geriatric care was analysed. The results present participants' self-reported knowledge across ten geriatric-related topics. Overall, the results suggest a moderate level of knowledge in most areas, with only a few topics showing a concentration of responses in the higher categories. Topics like **chronic diseases management, fall prevention and mobility** and **integrated care** had the highest percentage of participants reporting a good or very good understanding (levels 3 and 4). **Dementia** revealed a concerning gap, with over 30% of participants reporting low knowledge. These findings highlight specific areas, where targeted educational interventions may be most needed.

Table 65 Self-reported knowledge levels across topics related to ageing and care among Portuguese participants.

What is your current level of knowledge about the following topics?					
	1	**2**	**3**	**4**	**5**
Chronic disease management	1.0	6.1	22.2	44.4	26.3
Comprehensive geriatric assessment	4.0	20.2	23.2	35.4	17.2
Dementia	3.0	31.0	51.0	10.0	5.0
Fall prevention and mobility	0	2.0	13.1	47.5	37.4

Geriatric nursing	3.0	17.2	23.2	38.4	18.2
Green Policies	9.1	28.3	35.4	17.2	10.1
Integrated care	4.0	6.1	28.3	44.4	17.2
Mental health	1.0	15.2	36.4	27.3	20.2
Pain management	7.1	1.0	26.3	41.4	24.2
Palliative care	2.0	14.1	32.3	39.4	12.1
1 – No Knowledge; 3 – Average Knowledge: 5 – Deep Knowledge					

3.5.3 Needs and shortcomings

When asked which themes should receive greater emphasis in geriatric and gerontological nursing studies, participants highlighted a broad range of topics, suggesting important areas for curricular enhancement. **Caregiver Support, Family Dynamics, and Social Support** emerged as the most pressing need, identified by 74% of respondents, followed closely by **Active Ageing, Quality of Life, and the Role of Older Adults in Society** (72%), **Dementia and Mental Health** (70%), and **Communication with Older Adults and Families** (70%). Other key areas seen as deserving more attention included **Chronic Disease Management and Preventive Care** (65%), **Geriatric Nursing, Mental Health, and Pain Management** (60%), **Technologies for Supporting Geriatric Care** (60%), **Medication Management, Polypharmacy, and Drug Interactions** (59%), **Ethical, Legal Issues, and Person-Centred Care** (57%), **Nutrition, Hydration, and Wound Care** (57%), **Fall Prevention, Mobility, and Rehabilitation** (57%), **End-of-Life and Palliative Care** (56%), **Comprehensive Geriatric Assessment and Intervention** (54.0%), and **Ageing Mechanisms and Physiological Changes** (53%). **Green Policies, Sustainability, and Community Engagement**, although ranked lowest (39%), was nevertheless considered a relevant theme for future inclusion in training programs.

Table 66 Topics identified by Portuguese participants as needing more emphasis in geriatric and gerontological nursing studies.

What are the main themes you think should be covered more in geriatric and gerontological nursing studies?	%
Caregiver support, family dynamics, and social support	74.0
Active ageing, quality of life, and role of older adults in society	72.0
Dementia and mental health	70.0
Communication with older adults and families	70.0
Chronic disease management and preventive care in older adults	65.0
Geriatric nursing, mental health, and pain management	60.0
Technologies for supporting geriatric care	60.0

Medication management, polypharmacy, and drug interactions	59.0
Ethical, legal issues, and person-centred care	57.0
Nutrition, hydration, and wound care	57.0
Fall prevention, mobility, and rehabilitation	57.0
End-of-life and palliative care	56.0
Comprehensive geriatric assessment and intervention	54.0
Ageing mechanisms and physiological changes	53.0
Green policies, sustainability, and community engagement	39.0

When asked "What improvements do you suggest for training programs in geriatric and gerontological nursing?" participants from Portugal highlighted several key areas for improving geriatric and gerontological nursing training. The participants emphasised the **integration of gerontological and geriatric content** into general health education and specialised nursing curricula. A strong emphasis was placed on the importance of including a **practical training component**, such as internships or clinical placements, to enhance hands-on skills and communication abilities. Additionally, a significant portion called for **increased training hours**, particularly in areas such as **mental health, dementia care, and caregiver support**. Several respondents also advocated for **more dynamic and differentiated training**, including **active learning methods** (e.g., simulation), **technological tools to support geriatric care**, and **non-pharmacological intervention strategies**. Lastly, a few participants stressed the need for training programs to be **person- and family-centred** and tailored to the **diverse realities and needs of learners.**

Participants were asked "Do you consider that scientific research on geriatric and gerontological nursing is being sufficiently encouraged?". From all only **20% answered "Yes".**

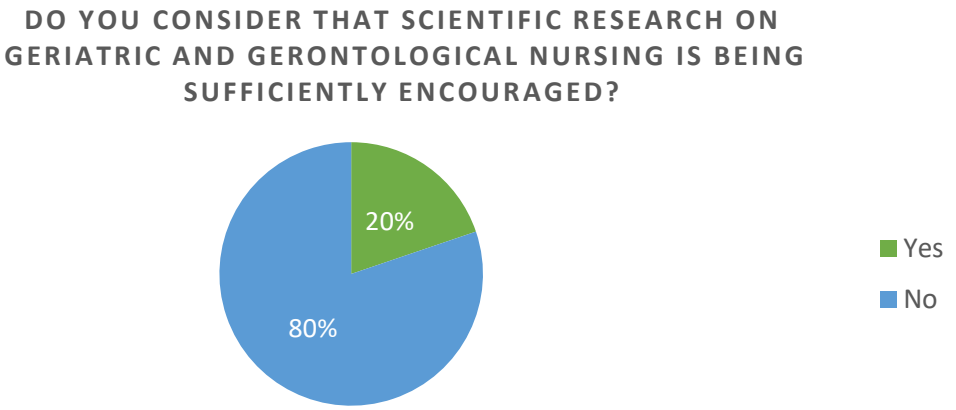


Figure 96 Proportion of Portuguese individuals who consider that scientific research on geriatric and gerontological nursing studies is being sufficiently encouraged.

Among the respondents who answered "yes" several key justifications emerged. Many acknowledged a growing recognition of the **complexity involved in caring for older adults,** particularly in relation to the burden on both healthcare professionals and informal caregivers. Others noted the **existence of ongoing research projects and funding opportunities,** suggesting that scientific interest in this field is increasing. Additionally, some participants pointed to the **development of health promotion and cognitive stimulation programs** aimed at older populations as evidence of progress.

Among the **77% of respondents** who believe that geriatric and gerontological nursing research **is not** being sufficiently encouraged, several recurring concerns were identified. Many pointed to the **lack of institutional and political recognition** of the field, both within higher education and national research funding agencies. A significant number also criticized the **limited support and incentives** available to professionals, noting that research in this area often remains confined to academic requirements at the master's or doctoral levels, without continuity or broader dissemination. Some emphasized the **underrepresentation of older adults** in studies due to barriers such as low literacy and recruitment challenges, while others highlighted a broader **societal undervaluing of ageing and older people**, often perceived as burdens rather than individuals worthy of investment. Additionally, participants expressed frustration with the **lack of innovation** in research approaches and the insufficient focus on promoting autonomy, well-being, and quality of life in older adults. Overall, the responses suggest a pressing need for **greater structural, political, and cultural support** to advance impactful and inclusive research in geriatric and gerontological nursing.

3.5.4 Development opportunities

The training needs expressed by participants reveal a clear interest in deepening knowledge in **dementia and mental health (60%)**, which emerged as the most prioritised area for further education. Closely following are **technologies for supporting geriatric care (56%)** and **chronic disease management and preventive care in older adults (50%). Comprehensive geriatric assessment and intervention (48%), caregiver support, family dynamics, and social support (48%)**, **communication with older adults and families (45%)**, **active ageing, quality of life, and the role of older adults in society (44%)** and **end-of-life and palliative care (42%)**, also ranked high, reflect a wish to adopt more holistic and proactive approaches and the recognition of the complex social, and emotional dimensions of care. Participants further expressed interest in more clinically focused topics namely, **nutrition, hydration, and wound care (38%), medication management, polypharmacy, and drug interactions (37%), ethical and legal issues, and person-centred care (37%)**, **geriatric nursing, mental health, and pain management (36%)** and **ageing mechanisms and physiological changes (30%)**. **G**reen

policies, sustainability, and community engagement (29%) and **fall prevention, mobility, and rehabilitation (29%)** were also considered relevant. Overall, the results underscore a growing awareness of the multifaceted nature of geriatric care and the need for **interdisciplinary, ethically grounded, and person-focused training** that responds to the current and future demands of an ageing population.

Table 67 Areas in which Portuguese participants would like to improve through training.

What areas would you like to improve through training in geriatrics and gerontology?	%
Dementia and mental health	60.0
Technologies for supporting geriatric care	56.0
Chronic disease management and preventive care in older adults	50.0
Comprehensive geriatric assessment and intervention	48.0
Caregiver support, family dynamics, and social support	48.0
Communication with older adults and families	45.0
Active ageing, quality of life, and role of older adults in society	44.0
End-of-life and palliative care	42.0
Nutrition, hydration, and wound care	38.0
Ethical, legal issues, and person-centred care	37.0
Medication management, polypharmacy, and drug interactions	37.0
Geriatric nursing, mental health, and pain management	36.0
Ageing mechanisms and physiological changes	30.0
Green policies, sustainability, and community engagement	29.0
Fall prevention, mobility, and rehabilitation	29.0

When asked about preferred training formats in geriatrics and gerontology, the majority of participants indicated a preference for **hybrid formats (60%),** reflecting a growing openness to blended approaches that combine the benefits of physical presence with the flexibility of digital tools. **Online training (36%)** was selected by nearly a third of respondents, highlighting the relevance of accessible and self-paced learning, especially for professionals managing demanding schedules or located in remote areas. Meanwhile, **in-person training** was selected by **27%**, suggesting a continued value placed on face-to-face interaction, hands-on learning, and opportunities for direct engagement with peers and instructors. These results point to the importance of offering **diverse and adaptable training modalities** to effectively meet the varied needs and preferences of healthcare professionals in the field of ageing.



Figure 97 Proportion of Portuguese individuals who prefer different types of training.

When considering the most effective formats for professional development in geriatrics and gerontology, participants strongly favoured **clinical simulation (60%),** highlighting the importance of hands-on, practice-based approaches in building confidence and clinical skills. **Theoretical-practical courses (53%), Practical workshops (45%),** and **Experiential learning (39%)** were also highly rated, underscoring the value of learning through direct experience and real-world application combined with conceptual understanding with applied components. Less frequently selected, though still relevant, were **coaching to support learning and interactive online classes (32%), interactive online classes (31%)**, and **training games (11%)**, suggesting that while digital and innovative methods are useful, they are most effective when complementing more experience-based training formats.

Table 68 Preferred training formats for professional development reported by Portuguese participants.

What format of training do you consider most effective for your professional development?	%
Clinical simulation	60.0
Theoretical-practical courses	53.0
Practical workshops	45.0
Experiential learning	39.0
Coaching to support learning	32.0
Interactive online classes	31.0
Training games	11.0

When asked about the amount of time they could realistically dedicate to continuing education in geriatrics and gerontology, the majority of participants indicated a preference for short, manageable commitments. **A substantial 50% stated they could dedicate 1 to 2 hours per week**, while **41% reported being able to allocate 3 to 5 hours**. Only **9% said they could commit more than 5 hours**

weekly. These findings highlight the need for flexible and concise training formats that can be easily integrated into the busy routines of healthcare professionals.

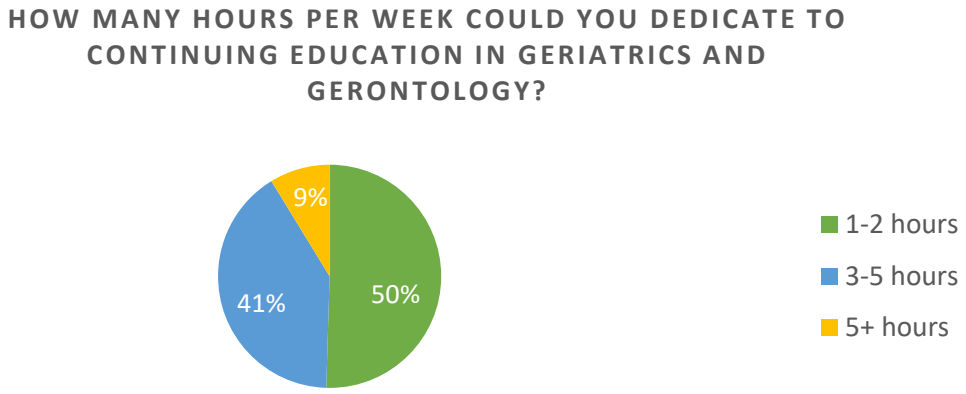


Figure 98 Portuguese participants' willingness to commit varying time intervals to continuing education in geriatrics and gerontology.

When asked about their availability and willingness to participate in training outside regular work hours, **the majority of participants (84%)** responded positively, indicating they would be willing to engage in training before or after work or on their days off. In contrast, **16% participants expressed that they would not be available or willing** to do so. This suggests a generally strong motivation among professionals to pursue continuing education, although scheduling flexibility remains an important consideration.

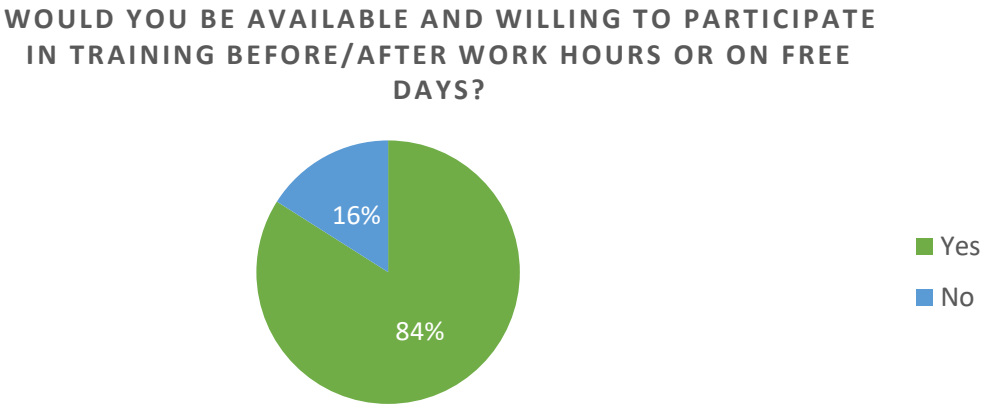


Figure 99 Proportion of Portuguese participants willing to attend training before or after work hours, or during their free time.

When asked if they would like to receive more ongoing training on geriatric and gerontological care, **a clear majority of 87 participants answered yes**, expressing strong interest in continuing their education in this field. Meanwhile, **13 participants responded no**, indicating less enthusiasm for

additional training. This demonstrates a significant demand for further learning opportunities among professionals working with older adults.

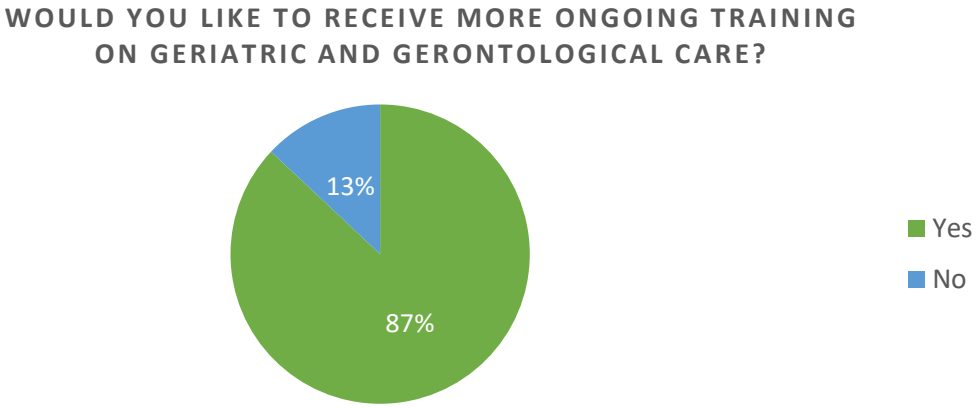


Figure 100 Proportion of Portuguese participants interested in receiving additional ongoing training in geriatric and gerontological care.

Participants identified several key motivations for pursuing training in geriatrics and gerontology. The strongest driver was clearly an **interest in improving patient outcomes (75%)**. **Personal fulfilment (49%), professional recognition and expertise (48%), demographic trends (36%)** and **career advancement (34%)** also played an important role in motivating participation. Other factors such as **supportive learning environment (28%)** and **access to better employment opportunities (20%)** were less frequently cited. These results highlight that the primary incentives for training are focused on making a meaningful impact on patient care and personal and professional growth.

Table 69 Factors motivating Portuguese participants to pursue further specialization or education in geriatrics.

What factors would motivate you to pursue further specialisation / education in geriatrics?	%
Interest in improving patient outcomes	75.0
Personal fulfilment	49.0
Professional Recognition and Expertise	48.0
Demographic trends	36.0
Career Advancement	34.0
Supportive Learning Environment	28.0
Access to Better Employment Opportunities	20.0

When asked about the specific areas in which they would like to deepen their knowledge, participants most frequently pointed to **technologies for supporting geriatric care (50%)**, followed by **dementia and mental health (48%)**. Areas such as **caregiver and family support (43%)**, **chronic disease management and preventive care in older adults (43%)**, **active ageing and the societal role**

of older adults (40%) and **geriatric nursing and pain management (38%)** also received considerable interest. Participants also expressed a desire to further explore **end-of-life and palliative care (35%)**, **medication management and polypharmacy (35%)**, **communication with older adults (34%)**, **comprehensive geriatric assessment and intervention (33%)**, **nutrition and wound care (32%)**, and **green policies, sustainability, and community engagement (31%).** Less frequently selected, though still relevant, were topics like **ageing mechanisms and physiological changes (30%)**, **ethical, legal issues, and person-centred care (29%)** and **fall prevention and rehabilitation (20%)**. These responses reflect a broad interest across clinical, psychosocial, and systemic dimensions of geriatric care.

Table 70 Specific areas in which Portuguese participants wish to deepen their knowledge in geriatric and gerontological care.

In which specific areas would you like to deepen your knowledge?	%
Technologies for supporting geriatric care	50.0
Dementia and mental health	48.0
Caregiver support, family dynamics, and social support	43.0
Chronic disease management and preventive care in older adults	43.0
Active ageing, quality of life, and role of older adults in society	40.0
Geriatric nursing, mental health, and pain management	38.0
End-of-life and palliative care	35.0
Medication management, polypharmacy, and drug interactions	35.0
Communication with older adults and families	34.0
Comprehensive geriatric assessment and intervention	33.0
Nutrition, hydration, and wound care	32.0
Green policies, sustainability, and community engagement	31.0
Ageing mechanisms and physiological changes	30.0
Ethical, legal issues, and person-centred care	29.0
Fall prevention, mobility, and rehabilitation	20.0

The most frequently reported barrier to participating in ongoing training was **lack of time (68%)**, highlighting a significant constraint for the majority of respondents. **Cost (51%)** was also a notable obstacle, suggesting that financial considerations play an important role in limiting participation. Other reported barriers included **limited access to courses (26%)** and **lack of supporting structures (19%)**, indicating that logistical and institutional factors also impact professionals' ability to engage in continued education.

Table 71 Portuguese participants reported obstacles to participation in continuing education.

Are there any barriers that prevent you from participating in ongoing training?	%
Lack of time	68.0
Cost	51.0
Limited access to courses	26.0
Lack of supporting structures	19.0

3.5.5 Green policies and sustainability in geriatric care

When asked about their familiarity with green policies and sustainable practices in healthcare, **43 participants responded affirmatively**, while **57 reported not being familiar** with these concepts. This indicates that **a significant majority lack awareness** of sustainability-related strategies in the healthcare context, particularly within geriatric care, suggesting an important gap in knowledge that could be addressed through targeted educational efforts.

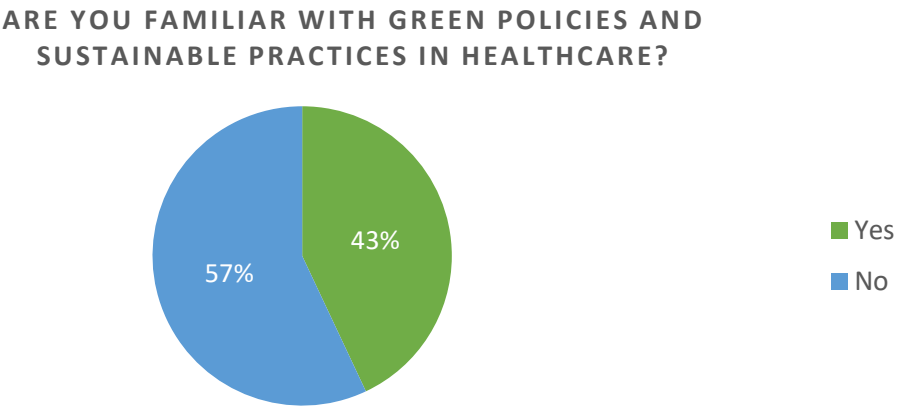


Figure 101 Proportion of Portuguese individuals who are familiar with green policies and sustainable practices in healthcare.

From those aware with green policies and sustainable practices in healthcare, only **14 participants (33%)** reported having received training on sustainable practices in healthcare, while **29 (67%)** indicated they had not. These results further underscore the **limited exposure to sustainability education** among professionals, reinforcing the need to integrate **green policies and sustainable practices** more explicitly into training programmes in geriatrics and gerontology.

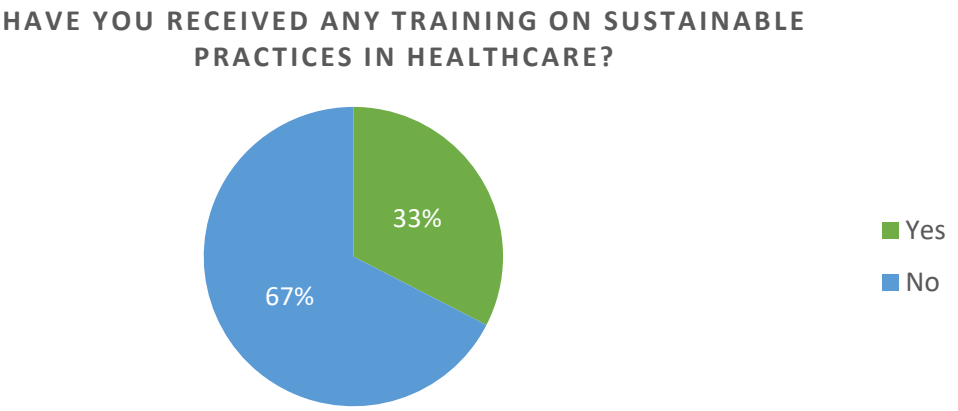


Figure 102 Proportion of Portuguese individuals who received specific training on sustainable practices in healthcare.

When asked about the application of sustainable practices in their workplace, **85%** of participants reported engaging in **recycling materials** such as paper, plastic, or glass. **67%** stated they ensure the **safe disposal of hazardous waste**, including diapers, bandages, or other medical waste. Measures to **reduce energy consumption** were mentioned by **54%**, while **43%** apply **water conservation practices**. Only **23%** reported using **environmentally friendly products**, suggesting that while some eco-friendly measures are common, others remain underutilised in geriatric care settings.

Table 72 Portuguese participants reported implementation of environmentally sustainable practices at work.

In your workplace, do you apply any sustainable practices?	%
Recycling materials (e.g., paper, plastic, glass)	85.0
Safe disposal of hazardous waste (e.g., diapers, bandages, medical waste)	67.0
Reducing energy consumption (e.g., efficient lighting, equipment)	54.0
Water conservation measures	43.0
Using environmentally friendly products	23.0

When asked about the challenges faced in implementing sustainable practices in their work environment, **53%** of participants identified a **lack of training on green policies** as the main barrier, **34%** reported **limited access to eco-friendly resources**, while **31%** cited the **cost of sustainable alternatives** as challenges. Additionally, **30%** pointed to **institutional resistance to change**, and **20%** mentioned **time constraints**, highlighting the need for systemic support and accessible training to foster more sustainable practices in geriatric care.

Table 73 Challenges faced by Portuguese participants in implementing sustainable practices at work.

What challenges do you face in implementing sustainable practices in your work environment?	%
Lack of training on green policies	53.0
Limited access to eco-friendly resources	34.0
Cost of sustainable alternatives	31.0
Institutional resistance to change	30.0
Time constraints	20.0

The vast majority of participants (**97%**) believe that **incorporating green policies into nursing education is important**, while only **3%** responded negatively. This indicates a strong consensus on the relevance of sustainability and environmental responsibility within the professional training of nurses.

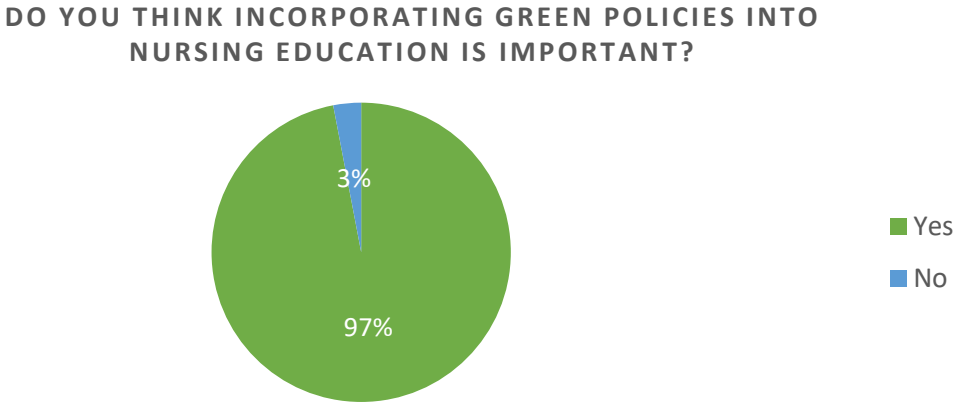


Figure 103 Proportion of Portuguese individuals who think is important to incorporate green policies into nursing education.

Among the participants who responded affirmatively to the importance of incorporating green policies into nursing education, a strong consensus emerged around the **need for environmental sustainability** as a shared responsibility. Many emphasized that nurses, as key actors in the healthcare system, should be **actively engaged in promoting sustainable practices** both within their professional settings and the wider community. Respondents highlighted concerns about **wastefulness in healthcare**, including excessive use of disposable materials and water, and advocated for the integration of environmental awareness as a **transversal topic across all areas of training**, not limited to nursing alone. Furthermore, participants noted that educating nurses in eco-friendly practices can **reduce the environmental impact of health services** without compromising care standards, making green policies not only a matter of environmental ethics but also of **professional and social responsibility**.

Participants highlighted several key areas where education on sustainability could be most beneficial. The majority emphasised **safe disposal of hazardous waste (72%)**, closely followed by **environmental preservation education for both staff and patients (69%).** The **use of eco-friendly materials and products (64%)** and **waste management and recycling (61%)** were also considered important topics. Additionally, around half of the participants valued education on **resource conservation (57%)** and **reducing energy consumption (45%)**, indicating a strong interest in practical, actionable sustainability practices within healthcare settings.

Table 74 Sustainability areas that Portuguese participants believe should be emphasised in geriatric and gerontological care.

In your opinion, what areas of sustainability should be emphasised in geriatric and gerontological care?	%
Environmental preservation education for staff and patients	72.0
Safe disposal of hazardous waste	69.0
Use of eco-friendly materials and products	64.0
Waste management and recycling	61.0
Resource conservation	57.0
Reducing energy consumption	45.0

A significant majority of respondents **(62%)** are only **somewhat confident in safely disposing of hazardous waste** used in the care of older adults, while just **30% feel very confident**. Additionally, **8%** admit they are **not confident at all.** This indicates a potential gap in training or institutional support regarding hazardous waste management in geriatric care settings. The relatively low proportion of respondents who feel fully confident suggests the need for improved education and clearer protocols to ensure safety and compliance.

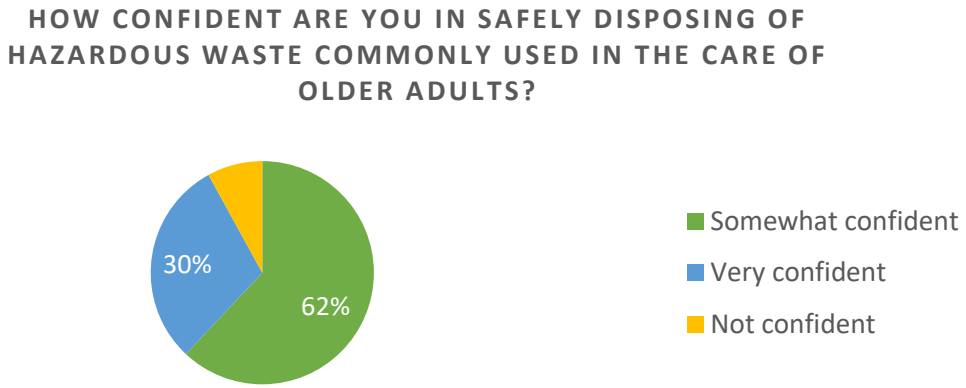


Figure 104 Confidence levels that Portuguese participants reported in safely disposing hazardous waste commonly used in the care of older adults.

Participants believe several practices could enhance sustainability in the care of older adults. The most supported measure, with **73%**, is **providing training on green policies**. **Implementing more recycling initiatives** as also widely favoured by **61%** of respondents. Additionally**, encouraging the use of reusable products** was seen as important by **60%**, while **using renewable energy sources** and improving **waste disposal systems for hazardous materials** garnered support from **55%** and **51%** of participants, respectively. These responses reflect a strong interest in both education and practical actions to foster environmental sustainability in geriatric care.

Table 75 Portuguese participants-reported strategies to improve environmental sustainability in geriatric care.

What practices do you believe would improve sustainability in the care of older adults?	%
Providing training on green policies	73.0
Encouraging the use of reusable products	61.0
Improving waste disposal systems for hazardous materials	60.0
Implementing more recycling initiatives	55.0
Using renewable energy sources	51.0

A clear majority of participants, **77**%, expressed willingness to participate in training programs focused on sustainable healthcare practices. Only **23%** indicated they would not be willing to participate, demonstrating strong overall interest in gaining knowledge and skills related to sustainability in healthcare settings.

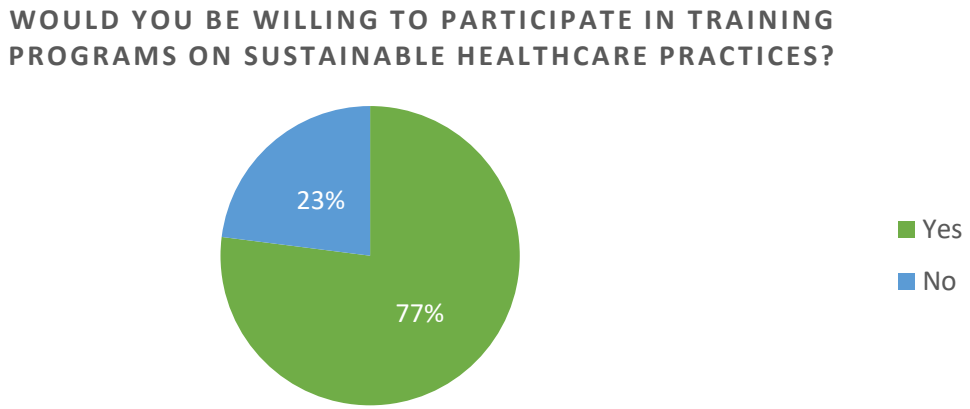


Figure 105 Proportion of Portuguese individuals who would be willing to participate in training programs on sustainable healthcare practices.

The suggestions provided by participants for promoting sustainable practices in geriatric nursing reflect a multifaceted approach centred on **education, resource optimization, and community engagement**. Many emphasized the need for **training and awareness-raising**, particularly directed at caregivers, to encourage environmentally responsible behaviours in older care settings. Proposed

strategies included the **use of educational materials** such as posters and leaflets, as well as **municipal incentives** to support sustainable initiatives. Practical recommendations involved the **reduction of plastic use**, **reliance on reusable materials**, improved **hazardous waste disposal systems**, and **specific solutions** like dedicated containers for geriatric diaper disposal. Some participants also highlighted the importance of promoting sustainability through **functional maintenance and autonomy of older adults**, and through **preventive care measures** that reduce the need for excessive resource use. These responses suggest that promoting sustainability in nursing requires both systemic support and **daily, actionable practices** within care environments.

4 Analysis and Discussion

4.1 Key gaps in nursing education identified

An analysis of the survey results has identified **significant shortcomings** within current nursing education curricula in addressing the **healthcare challenges of an ageing population**. A primary deficiency highlighted by respondents is the **fragmented and insufficient nature of theoretical training in geriatric care**. While the importance of this specialism is widely acknowledged, the teaching of fundamental concepts such as the **principles of ageing, multimorbidity, and polypharmacy** is frequently reported as **superficial**. This lack of depth leaves nursing students **unprepared to manage complex health profiles**, creating a **critical gap** between educational outcomes and professional requirements.

Furthermore, the findings reveal a **significant disconnect between theoretical instruction and its practical application**. Although nursing programmes typically include clinical placements, these are **not consistently structured** to guarantee systematic exposure to geriatric care settings. As a result, graduates may enter the workforce **lacking requisite confidence and practical competencies** to address the needs of **frail older patients, manage chronic conditions holistically, or engage in effective communication with patients and their families**. This indicates a **failure to adequately integrate essential hands-on experience with academic knowledge**.

The survey also brought to light a **notable lack of emphasis on interdisciplinary collaboration** within existing curricula. Effective geriatric care inherently necessitates a **coordinated, multi-professional approach**, involving nurses, physicians, physiotherapists, and social workers, among others. The absence of **foundational training in teamwork and interprofessional communication** therefore, represents a serious limitation. Without such preparation, new graduates are likely to face **significant challenges contributing effectively to integrated care models** central to modern healthcare delivery for older adults.

In summary, the survey data point to a **systemic need to revise and enhance nursing curricula** to better prepare future professionals for the demands of geriatric care. The identified gaps in **theoretical depth, practical experience, and interdisciplinary training** represent **key areas for strategic intervention** and future programme development.

4.2 The need for curricular reform in nursing education

The findings of this report underscore an **urgent imperative for comprehensive reform** of nursing curricula to address the **evolving demographic and epidemiological landscape** across Europe. The confluence of a **rapidly ageing population** and the **rising prevalence of multimorbidity, frailty, and chronic conditions** demands that future nursing professionals are equipped with **advanced knowledge and specialised competencies in geriatric care**. However, the data reveal a **significant disparity between this need and current educational provision**. Nursing programmes in the participating countries frequently allocate **insufficient attention to ageing-related topics**. Furthermore, when such content is included, it is often **confined to optional modules** or **dispersed across various courses without a cohesive, integrated pedagogical strategy**. This **fragmented approach** results in a **superficial treatment of the complexities** inherent in geriatric care and fails to adequately prepare students for the realities of clinical practice.

A successful curricular reform must therefore extend beyond merely **increasing instructional hours**, once it necessitates a **fundamental rethinking of how knowledge is delivered**. A **paradigm shift** is required, moving from a **predominantly biomedical, task-oriented perspective** to a **holistic and person-centred model of care**. This updated approach must place equal value on **patient autonomy, dignity, and quality of life** alongside traditional clinical outcomes. Moreover, the integration of **interprofessional education** is **critical**. The curriculum must provide **structured opportunities for nursing students to learn with and from their peers in medicine, physiotherapy, social work, and pharmacy**, thereby mirroring the collaborative dynamics of professional practice.

A further essential dimension of reform is the **systematic incorporation of digital health and technological innovation**. The emergence of **digital biomarkers, remote monitoring systems, and artificial intelligence tools** is reshaping healthcare delivery. Nursing curricula must cultivate **technical proficiency** and **critical thinking skills** to navigate the **ethical, legal, and practical implications** of these technologies in older adult care. Failure to integrate these advancements risks rendering educational programmes **outdated and disconnected from contemporary clinical environments**.

Ultimately, curricular reform in nursing education is not simply a matter of content updates but a **profound reshaping of pedagogical philosophy**. The goal is to ensure that future nurses are capable of **responding effectively to complex, multidimensional challenges** of an ageing society. Achieving this requires **robust, sustained collaboration** between academic institutions, professional bodies,

policymakers, and healthcare providers, as well as **rigorous mechanisms for continuous evaluation** to ensure alignment with societal needs and clinical advancements.

4.3 Future perspectives and innovation in geriatric nursing education

Looking forward, the evolution of geriatric nursing education must be defined by a **commitment to innovation, flexibility, and a forward-looking perspective** to effectively address the **multifaceted challenges of ageing populations**. The survey findings indicate a **strong demand among healthcare professionals for advanced training** in areas such as **dementia care, mental health, person-centred methodologies, and sustainable practices**. This highlights the need for **educational programmes that are both comprehensive and progressive**. Future curricula must integrate these domains systematically, ensuring nurses are not only **clinically proficient** but also adept at navigating the **psychosocial, ethical, and environmental dimensions** of geriatric care.

The adoption of innovative pedagogical strategies will be paramount. Experiential learning, practical workshops, and high-fidelity clinical simulations are essential for fostering active engagement, critical thinking, and confidence in complex clinical scenarios. Blended learning models that combine immersive in-person experiences with flexible online modules can enhance accessibility for professionals seeking continuous development. Integration of educational technology, including virtual reality simulations, digital assessment tools, and AI-supported learning platforms, is crucial for developing technical proficiency and adaptive problem-solving skills required in contemporary geriatric practice.

A central pillar of future educational models must be the systematic integration of interprofessional and collaborative learning. Providing structured opportunities for students from different disciplines to learn collaboratively enhances care coordination and cultivates a professional culture of mutual respect, effective communication, and shared responsibility, fundamental to high-quality integrated care.

Moreover, sustainability and environmentally responsible practices represent a critical emerging domain. Although current training is limited, the survey identified a strong interest in sustainable healthcare. Integrating waste reduction, energy efficiency, and resource management into nursing curricula will prepare professionals to contribute to environmentally and socially accountable healthcare systems.

In conclusion, the future of geriatric nursing education must be characterised by **adaptability, continuous evaluation, and responsiveness to societal and technological change**. Models supporting

lifelong learning, such as **modular training**, will be essential for enabling professionals to **continually update competencies**. By championing **innovation, interprofessionalism, and a holistic perspective**, geriatric nursing education can empower the next generation to deliver **compassionate, effective, and sustainable care** for ageing societies.

4.4 Study limitations

While this study offers valuable insights into the state of geriatric and gerontological nursing education across the participating countries, its **methodological limitations** must be carefully considered when interpreting the findings.

A primary limitation arises from the **non-probabilistic, convenience-based sampling strategy employed**. This approach, while practical for reaching a diverse professional audience, **restricts the statistical generalisability of the results** to the broader population of nursing students, educators, and practitioners in each country. The resulting sample may therefore **not be fully representative** of all stakeholders involved in geriatric care.

Secondly, the reliance on a **self-administered online questionnaire** introduces the potential for inherent **response biases**. It is plausible that individuals with a **pre-existing interest in gerontology or sustainability** were more inclined to participate, which may have influenced the aggregate findings. Furthermore, the **self-reported nature of the data**, covering perceived competencies, training adequacy, and professional experience, is susceptible to **social desirability bias, recall inaccuracies, and subjective interpretation**. These factors can affect the objectivity of the reported outcomes.

Thirdly, despite a rigorous process of translation and cultural adaptation for each national context, subtle variations in linguistic interpretation, healthcare system structures, or educational norms may have influenced how questions were understood and answered. Such nuances could impact the direct comparability of data across countries.

Finally, the **cross-sectional design** of the research captures a **static snapshot** of respondent perspectives at a single point in time. This design precludes the analysis of **developmental trends** or the establishment of **causal relationships** between educational interventions and professional competencies over time. **Longitudinal research** would be necessary to track the long-term impact of educational programmes on clinical practice in geriatric care.

Notwithstanding these limitations, this report provides a rich and contextually relevant evidence base. The findings serve as a foundational platform for informing targeted curriculum development, guiding future research, and shaping policy recommendations within the field of geriatric nursing education.

5 Conclusion

5.1 Summary of key findings

This report has underscored the urgent need to prepare the nursing workforce to meet the complex needs of an ageing European population. The mapping and analysis conducted throughout the project have revealed important gaps in geriatric nursing education, particularly in relation to advanced competencies such as person-centred care, management of chronic conditions, among others. These findings highlight both challenges and opportunities for strengthening the preparedness of nursing curricula and ensuring alignment with the realities of clinical practice.

5.2 Importance of strengthening geriatric nursing education

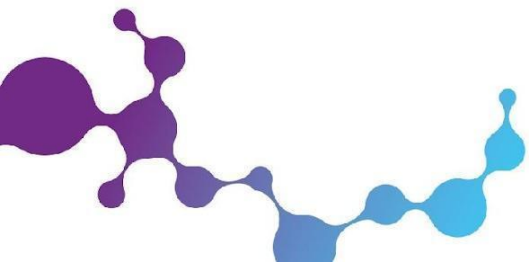
Investing in geriatric nursing education is not only a matter of improving professional training but also a strategic priority for the sustainability of European health systems. As the proportion of older adults continues to rise, the demand for highly skilled nurses with expertise in gerontology and geriatrics will grow exponentially. Strengthening this area of education will contribute to better quality of care, enhanced patient safety, and a more efficient use of healthcare resources. Beyond technical skills, education must also cultivate ethical, cultural, and communication competencies, enabling nurses to deliver care that respects the dignity and autonomy of older adults. Within the Erasmus+ framework, this project provides a unique opportunity to share experiences, exchange good practices, and develop joint approaches across countries, thus fostering a European dimension in geriatric nursing education.

5.3 Next steps and implications for policy and practice

The next stage of this work should move beyond identifying gaps and towards developing innovative curricula, training modules, and pedagogical tools that can be adapted across European nursing schools. Policy frameworks at both national and European levels need to prioritise geriatric competencies within nursing education, ensuring that accreditation and quality assurance systems explicitly recognise this field as essential. Partnerships between universities, healthcare providers, and policymakers will be crucial in translating these recommendations into practice.

For the Erasmus+, this project represents an opportunity to pilot educational innovations, promote mobility and exchange among nursing students and staff, and build a sustainable network of institutions committed to advancing geriatric nursing education. By doing so, the project can serve as

a catalyst for long-term change, ensuring that the next generation of nurses is adequately prepared to care for Europe's ageing population and to contribute to the resilience of health systems.



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AGE-MEDU

Advancing Geriatric Education for Nurses and Techs at High University

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Co-funded by the European Union

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7 ANNEX 1

QUESTIONNAIRE TO ASSESS THE NEEDS AND SHORTCOMINGS OF NURSING STUDIES IN THE FIELD OF GERIATRICS AND GERONTOLOGY

Thank you for participating in this questionnaire, which seeks to **identify the needs and shortcomings of nursing education** within the field of geriatrics and gerontology. This survey targets **students, professors, and healthcare professionals** who are actively engaged in or have insights into nursing education and training in these fields.

The information gathered will be crucial in shaping recommendations for **national ministries and relevant agencies**, to enhance and update nursing curricula to address the needs of an ageing population better.

This questionnaire is part of the **AGE-MEDU Project**, funded by Erasmus+. **AGE-MEDU** aims to improve the quality and relevance of higher education in nursing across the European Union. Specifically, it focuses on creating an **innovative educational program in geriatrics and gerontology** tailored for nurses and technical professionals in four EU countries - **Croatia, the Netherlands, Portugal, and Greece**. By fostering transnational and international cooperation, the project aspires to equip future healthcare professionals with the knowledge and skills required to provide quality care to older adults.

Data Collection and Privacy: The University of Porto is the organisation responsible for collecting and securely storing data in compliance with national and EU standards for data protection. Your responses will be handled confidentially and used solely for this research. If you have questions regarding how your personal data is handled or about your rights in this regard, you can contact the Data Protection Officer of the University of Porto at the email address: dados.pessoais@up.pt.

Estimated Completion Time: This questionnaire should take approximately **10-15 minutes** to complete.

Thank you for your valuable contribution to advancing nursing education!

DEMOGRAPHICS

1. Age

_____

2. Gender

◯ Male
◯ Female
◯ I prefer not to say
◯ Other: _____

3. Highest education level (adjust later accordingly with the education levels of your country)

◯ Secondary School

◯ Bachelor
◯ Master
◯ PhD
◯ Other:_____

4. What is your current occupation?
◯ Nursing student
◯ Nurse
◯ Doctor
◯ Occupational therapist
◯ Social worker
◯ Other:_____

5. How many years have you been working in patient care?
◯ Less than 1 year
◯ 1-5 years
◯ 6-10 years
◯ 10+ years

6. Do you have specific experience in geriatric care?
◯ Yes
◯ No
◯ Other: _____

7. In which setting do you work most frequently?
◯ Hospital care
◯ Home care
◯ Long-term care
◯ Nursing homes
◯ Rehabilitation centres
◯ Other:_____

TRAINING AND SKILLS

8. Did you receive any specific training in geriatrics and gerontology?
◯ Yes
◯ No

8.1. If yes, please describe.
◯ _____

8.2. If yes, was this training sufficient to handle the challenges of the population aged 65 years or older?
◯ Yes
◯ Partially
◯ No

8.3. If yes, what topics related to geriatrics and gerontology were covered in your training? (Select all that apply)
◯ Active ageing, quality of life, and role of older adults in society

◯ Caregiver support, family dynamics, and social support
◯ Ageing mechanisms and physiological changes
◯ Chronic disease management and preventive care in older adults
◯ Communication with older adults and families
◯ Comprehensive geriatric assessment and intervention
◯ Dementia and mental health
◯ End-of-life and palliative care
◯ Ethical, legal issues, and person-centred care
◯ Fall prevention, mobility, and rehabilitation
◯ Geriatric nursing, mental health, and pain management
◯ Medication management, polypharmacy, and drug interactions
◯ Nutrition, hydration, and wound care
◯ Technologies for supporting geriatric care
◯ Green policies, sustainability, and community engagement
◯ Other:_____

8.4. If yes, What skills do you think were lacking in this training? (Select all that apply)

◯ Active ageing, quality of life, and role of older adults in society
◯ Caregiver support, family dynamics, and social support
◯ Ageing mechanisms and physiological changes
◯ Chronic disease management and preventive care in older adults
◯ Communication with older adults and families
◯ Comprehensive geriatric assessment and intervention
◯ Dementia and mental health
◯ End-of-life and palliative care
◯ Ethical, legal issues, and person-centred care
◯ Fall prevention, mobility, and rehabilitation
◯ Geriatric nursing, mental health, and pain management
◯ Medication management, polypharmacy, and drug interactions
◯ Nutrition, hydration, and wound care
◯ Technologies for supporting geriatric care
◯ Green policies, sustainability, and community engagement
◯ Other:_____

9. Have you received specific training on caring for individuals with dementia (e.g. Alzheimer's disease)?

◯ Yes
◯ No

9.1. **If yes, was this training sufficient to address the challenges of caring for individuals with dementia?**

◯ Yes
◯ Partially
◯ No

9.2. **What aspects of dementia do you feel confident about?** (Select all that apply)

◯ Early diagnosis and management strategies
◯ Communication strategies for individuals with cognitive decline
◯ Managing behavioural and psychological symptoms

◯ Providing family support and education
◯ Ethical issues in dementia care
◯ End-of-life care in dementia
◯ Other: _____

9.3. **What challenges do you encounter in the care of individuals with dementia?** (Select all that apply)
◯ Time constraints
◯ Lack of support structures
◯ Insufficient training
◯ Difficulties communicating with individuals with dementia
◯ Managing advanced disease stages
◯ Other: _____

9.4. **What improvements would you recommend for dementia training programs?**
◯ Please, describe: _____

10. Do you currently work with older adults in your daily practice?
◯ Yes
◯ No

11. What is your current level of knowledge about the following topics? (with 1 being "No Knowledge", 3 being "Average Knowledge" and 5 being "Deep Knowledge")

11.1. Integrated care
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.2. Chronic diseases management
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.3. Geriatric nursing
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.4. Comprehensive geriatric assessment
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.5. Fall prevention and mobility

◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.6. Palliative care

◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.7. Pain management

◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.8. Mental health

◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.9. Dementia

◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

11.10. Green Policies

◯ 1
◯ 2
◯ 3
◯ 4
◯ 5

NEEDS AND SHORTCOMINGS

12. What are the main themes you think that should be covered more in geriatric and gerontological nursing studies? (Select all that apply)

◯ Active ageing, quality of life, and role of older adults in society
◯ Caregiver support, family dynamics, and social support
◯ Ageing mechanisms and physiological changes
◯ Chronic disease management and preventive care in older adults

◯ Communication with older adults and families
◯ Comprehensive geriatric assessment and intervention
◯ Dementia and mental health
◯ End-of-life and palliative care
◯ Ethical, legal issues, and person-centred care
◯ Fall prevention, mobility, and rehabilitation
◯ Geriatric nursing, mental health, and pain management
◯ Medication management, polypharmacy, and drug interactions
◯ Nutrition, hydration, and wound care
◯ Technologies for supporting geriatric care
◯ Green policies, sustainability, and community engagement
◯ Other:_____

13. What improvements do you suggest for training programs in geriatric and gerontological nursing?
◯ Please, describe: _____

14. Do you consider that scientific research on geriatric and gerontological nursing is being sufficiently encouraged?
◯ Yes.
Why? _____
◯ No.
Why not? _____

DEVELOPMENT OPPORTUNITIES

15. What areas would you like to improve through training in geriatrics and gerontology? (Select all that apply)
◯ Active ageing, quality of life, and role of older adults in society
◯ Caregiver support, family dynamics, and social support
◯ Ageing mechanisms and physiological changes
◯ Chronic disease management and preventive care in older adults
◯ Communication with older adults and families
◯ Comprehensive geriatric assessment and intervention
◯ Dementia and mental health
◯ End-of-life and palliative care
◯ Ethical, legal issues, and person-centred care
◯ Fall prevention, mobility, and rehabilitation
◯ Geriatric nursing, mental health, and pain management
◯ Medication management, polypharmacy, and drug interactions
◯ Nutrition, hydration, and wound care
◯ Technologies for supporting geriatric care
◯ Green policies, sustainability, and community engagement
◯ Other:_____

16. What type of training do you prefer? (Select all that apply)
◯ Hybrid
◯ In-person
◯ Online
◯ Other:_____

17. What format of training do you consider most effective for your professional development? (Select all that apply)

◯ Clinical simulation
◯ Coaching to support learning
◯ Experiential learning
◯ Interactive online classes
◯ Practical workshops
◯ Theoretical-practical courses
◯ Training games
◯ Other:_____

18. How many hours per week could you dedicate to continuing education in geriatrics and gerontology?

◯ 1-2 hours
◯ 3-5 hours
◯ 5+ hours

19. Would you be available and willing to participate in training before/after work hours or on free days?

◯ Yes
◯ No

20. Would you like to receive more ongoing training on geriatric and gerontological care?

◯ Yes
◯ No

21. What factors would motivate you to pursue further specialisation/education in geriatrics? (Select all that apply)

◯ Access to Better Employment Opportunities
◯ Career Advancement
◯ Demographic trends
◯ Interest in improving patient outcomes
◯ Personal fulfilment
◯ Professional Recognition and Expertise
◯ Supportive Learning Environment
◯ Other:_____

22. In which specific areas would you like to deepen your knowledge? (Select all that apply)

◯ Active ageing, quality of life, and role of older adults in society
◯ Caregiver support, family dynamics, and social support
◯ Ageing mechanisms and physiological changes
◯ Chronic disease management and preventive care in older adults
◯ Communication with older adults and families
◯ Comprehensive geriatric assessment and intervention
◯ Dementia and mental health
◯ End-of-life and palliative care
◯ Ethical, legal issues, and person-centred care
◯ Fall prevention, mobility, and rehabilitation
◯ Geriatric nursing, mental health, and pain management
◯ Medication management, polypharmacy, and drug interactions

◯ Nutrition, hydration, and wound care
◯ Technologies for supporting geriatric care
◯ Green policies, sustainability, and community engagement
◯ Other:_____

23. Are there any barriers that prevent you from participating in ongoing training? (Select all that apply)
◯ Cost
◯ Lack of time
◯ Limited access to courses
◯ Lack of supporting structures
◯ Other: _____

GREEN POLICIES AND SUSTAINABILITY IN GERIATRIC CARE

24. **Are you familiar with green policies and sustainable practices in healthcare?**
◯ Yes
◯ No

24.1. **If yes, have you received any training on sustainable practices in healthcare?**
◯ Yes
◯ No

25. **In your workplace, do you apply any sustainable practices?** (Select all that apply)
◯ Recycling materials (e.g., paper, plastic, glass)
◯ Reducing energy consumption (e.g., efficient lighting, equipment)
◯ Safe disposal of hazardous waste (e.g., diapers, bandages, medical waste)
◯ Water conservation measures
◯ Using environmentally friendly products
◯ Other: _____

26. **What challenges do you face in implementing sustainable practices in your work environment?**
◯ Lack of training on green policies
◯ Limited access to eco-friendly resources
◯ Institutional resistance to change
◯ Time constraints
◯ Cost of sustainable alternatives
◯ Other: _____

27. **Do you think incorporating green policies into nursing education is important?**
◯ Yes
Why? _____
◯ No
Why not? _____

28. **In your opinion, what areas of sustainability should be emphasized in geriatric and gerontological care? (Select all that apply)**
◯ Waste management and recycling
◯ Safe disposal of hazardous waste

◯ Reducing energy consumption
◯ Resource conservation
◯ Use of eco-friendly materials and products
◯ Environmental preservation education for staff and patients
◯ Other: _____

29. **How confident are you in safely disposing of hazardous waste commonly used in the care of older adults?**
◯ Very confident
◯ Somewhat confident
◯ Not confidente

30. **What practices do you believe would improve sustainability in the care of older adults? (Select all that apply)**
◯ Implementing more recycling initiatives
◯ Using renewable energy sources
◯ Providing training on green policies
◯ Encouraging the use of reusable products
◯ Improving waste disposal systems for hazardous materials
◯ Other: _____

31. **Would you be willing to participate in training programs on sustainable healthcare practices?**
◯ Yes
◯ No

32. **What suggestions do you have for promoting sustainable practices in geriatric and gerontological nursing?**
◯ Please, describe: _____