

The logo for eLILY2 features the text 'eLILY2' in a white, sans-serif font. The 'e' is lowercase and smaller than the 'LILY2'. The 'LILY2' is in all caps. The logo is set against a blue background with a white diagonal stripe and a row of white stars, reminiscent of the European Union flag.

eLILY2

DELPHI SURVEY REPORT

CYPRUS UNIVERSITY OF TECHNOLOGY
LIMASSOL, JANUARY 2021



Co-funded by the
Erasmus+ Programme
of the European Union

• DELPHI SURVEY REPORT



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DRAFT

• SUMMARY

ELILY2 Erasmus+ project is a 2-year funded project aiming to develop blended Health Literacy training for nurses working with older people. There is no evidence on how Health or eHealth Literacy knowledge and skills are included in the nursing education and if they are incorporated in the nursing studies. Reviews in USA schools of nursing revealed limited and inconsistent Health Literacy content in nursing curricula(1). However, although nurses' Health Literacy knowledge and communication skills are essential for improving patients' Health Literacy, nurses do not have adequate knowledge and experience regarding Health Literacy practices (2,3). The current report summarizes the findings of the Delphi survey, which was implemented in the framework of the IO1 eLILY2 Erasmus+ project from December – January 2021.

DRAFT

At a European level, there is not enough evidence about health and e-health education in nursing. The aim of this study is to design a curriculum focusing on the specific competencies required by nurses to support them in the caring of older people, as there is not much information related to the specific content. Therefore an e-Delphi survey was considered appropriate to get experts' opinion on this subject and contribute significantly to broadening knowledge within the nursing profession. Since the COVID-19 pandemic imposes social events and data collection restrictions, a modification to e-Delphi was necessary(4). A two-round modified e-Delphi method was conducted, where the research team provided the questionnaire and invited the experts to provide their feedback. The research team met and decided on the changes based on three criteria (decision rules) after each round: percentage of agreement over 90%, average score over 3.5 (Minimum 1 and maximum 4) and evaluation of the comments. After the final round, all partners met to reach a consensus.

In total, 20 experts were invited by email. They participated in both rounds, five from the University of Athens, Greece, six from the University of Ostrava, Czech Republic, five from the Cyprus University of Technology, two from the Akademia Humanistyczno-Ekonomiczna w Łodzi, Poland and two from the Klaipeda State University, Lithuania. Most of the experts were engaged in nursing training; two were board members of the International Health

Association, two experts were engaged in eHealth and eLearning and, one expert was a member of the National Health Literacy Association.

The questionnaire of the first round was developed as part of the literature review of the available curricula and after the research team met to reach a consensus including four modules with 19 items in total (background of Health Literacy and eHealth Literacy, eHealth applications, identification of low Health Literacy, eHealth teaching challenges). The questionnaire continued to the second round with 17 items. The curriculum included three modules after the second round (background of Health Literacy and eHealth Literacy, skills in practice-identification of low Health Literacy, feasibility, and readability issues -eHealth challenges). Items of module 2 were integrated into module 1 and 3. In the final consensus meeting, module 1 was further divided into two modules: an introductory one (module 1) and a module focusing on specific issues of patient safety (module 4).

DRAFT

1. INTRODUCTION

A significant barrier to health promotion, disease prevention, and health maintenance is inadequate HL, which is highly prevalent across the older population in Europe. Health Literacy (HL) “*entails people’s knowledge, motivation and competencies to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course*” (Sørensen et al., 2012, p. 3). In a European HL survey conducted in eight countries, higher proportions of people with limited HL were found among those who were between 66 and 75 years of age (58.2%) or 76 years or older (60.8%) (Sørensen et al., 2015). Data demonstrated that patients with limited HL were at an increased risk for worse health outcomes, less understanding about their health issues, and more difficulties following treatment plans (7,8).

The US Department of Health and Human Services (2021) refers to the increase of HL of the population as a core objective of Healthy People 2030, encouraging the education of health care professionals and the inclusion of HL in health care program curricula (9). Nurses are the primary healthcare professionals who interact with patients, communicate with them, and educate them on various health issues. In related studies, nurses were not familiar with the HL definitions, did not know that older adults were considered a high-risk group of low HL, and did not recognise the consequences of low HL (3,10). Nurses reported difficulties in using screening tools, identifying patients with low HL levels, assessing their readability level and HL interventions, and effectively using written communication strategies (3,11,12). More years of experience at work entailed more challenges in their interaction with low HL patients (13). Essential factors in the communication with low HL users were considered the feeling of trust in provider-patient interaction, the identification of patient’s learning needs, respect of cultural practices and beliefs, the assessment of patients’ understanding, and the availability of appropriate written material (14). Participation in patient education courses and the perceived ability to use HL strategies and control of any obstacles were considered factors influencing the intention to use HL strategies in communication (15)

In a cross-sectional study assessing knowledge, perceptions and barriers of 1697 nurses in Thailand, the lack of time, motivation, screening tools, cultural and linguistic issues (not available training resources in multiple languages) were identified as barriers for the HL

training among nurses (16). It is essential to enhance nurses' knowledge, skills, and attitudes on eHL and HL in their everyday practice, provide tools to identify and communicate with patients with limited HL(17). Toronto (18) expanded the work by Coleman et al on the available HL competencies for nurses, delivering 50 nurse-related HL competencies categorised in 22 knowledge, 16 skills and 12 attitudes(18,19). Communication strategies and a patient-centered approach were considered the most important HL training courses for nurses (18).

ELILY2 Erasmus+ project is a 2-year funded project that aims to develop a blended HL training course for nurses working with older people. To our knowledge there is no study that investigated the content of nursing curricula as they are related to HL, apart from communication skills.

The current report summarizes the findings of the Delphi survey, which was implemented in the framework of the IO1 eLILY2 Erasmus+ project. According to the Erasmus+ application, the development of the intellectual output 1 included several steps:

1. Literature review of the available training curricula for health profession students and national surveys to identify HL and eHL research work and training courses focusing on health care professionals
2. Development of the modules based on a summary of the review findings
3. e-Delphi survey with experts (two rounds)
4. Development of Module guides for trainers
5. Development of the contents
6. Translation of the contents

The Delphi survey aimed to receive feedback from experts in the field to evaluate the appropriateness of the proposed contents of the curriculum for nurses working with older people to enhance their eHL Learning Skills.

2. METHOD

This study aimed to develop a training program within a timeframe; thus, the Delphi technique is considered the preferred method.

The Delphi survey is the method of choice and is widely used for several reasons: designing and developing nursing services and training courses, identifying nurses' competencies, and prioritising clinical nursing research. According to this methodology (20), the research team defines the problem and invites the experts to provide their feedback in 3 rounds. The number of experts should not be less than 10. The participants should be experts in their field (adult nursing education). In the first round, opinions are provided using open-ended questions, gathering items and groups. The opinions are drafted in items, developing a short questionnaire and send to the experts to provide more items or feedback. In the second round, unresolved topics are sent back to participants to reach a consensus. In this phase, experts either reply yes/no to focused questions or rank their agreement or disagreement. In the third round, experts reconsider their percentages of agreement and disagreement, and if they have reached a consensus, then the process may end; otherwise, the process continues. A cut-off of the agreement should be decided before starting the whole process.

Since the COVID-19 pandemic imposes several social events and data collection restrictions, a modification to e-Delphi was necessary. The participants could express their views and participate in their availability, even if no interaction among experts was possible with the e-version. The advantages of the e-Delphi concerned the participation without geographical restrictions and are considered cost-effective.

We conducted a two-round modified e-Delphi method, where the research team provided the questionnaire and then invited the experts to provide their feedback. The research team met and decided on the changes based on three criteria. After adapting the modules based on the first-round results, a second-round followed. Finally, the research team assessed the results of the second round.

• 2.1 INCLUSION AND EXCLUSION CRITERIA

We have followed a purposive sampling.

The experts were:

- People engaged in the development and design of nursing curriculums (academic nurses)
- Members of the HL associations
- PhD students of nursing who also work as clinical nurses
- People who deal with eHL or with eHealth interventions
- Internationally recognised people who deal with eHL (board members of the International Health Association, research focus on HL and eHL)

The members of the e-Delphi should not be involved in any way in the eLILY2 project as supervisors, managers or researchers.

• 2.2 ITEMS USED IN THE SURVEY ROUND 1 (ANNEX 1)

The first-round questionnaire was developed as part of the literature review for published studies on the content of HL in the nursing curricula. The research team met to reach a consensus, including four modules and 19 items. The exact process is available in the comparative national survey report presenting the methodology of the review: databases, study selection and final questionnaire. The scoring ranged from 1 (not relevant) to 4 (very relevant). At the end of every module, there was an open question for experts' comments and suggestions for the module and specific items (**Annex I**).

Table 1. Items of the modified e-Delphi survey

MODULE 1

General background of health and eHL

1.1 Most common theories and definitions of HL / Compare and contrast literacies (8 pub +1 proj)

1.2 Introduction to eHL/ HL training skills (Use and operate media, information and seeking skills,)/Learn how to search reliable online health information and scientific resources (2 proj)

1.3 Factors associated with HL and HL epidemiology (8 pub)

1.4 Impact of low HL on patient outcomes, health system, and costs (8 pub)

1.5 HL and Patient Safety (e.g. medication adverse events, medication use) (3 pub)

MODULE 2

eHealth (IT) applications

- 2.1 Discussing available technologies for rehabilitation (globally/nationally) (1 proj)
- 2.2 Robotics on eHealth(globally/nationally) supporting older people (1 proj)
- 2.3 Assisted living technologies(globally/nationally) supporting older people (1 proj)
- 2.4 Privacy and security issues (e.g. exchange of information, personal data, medical data) (1 proj)

MODULE 3

Skills in Practice/ Identification of patients with limited HL

- 3.1 Learn how to administer the most used instruments for measuring HL and eHealth available nationally (7 pub)
- 3.2 Training on how to identify common signs that indicate low HL/ •Observation of patient behavior / •Training on how to recognise the key differences between skilled and poor readers (6 pub)
- 3.3 Communicate and cooperate with low HL adults (Oral and written communication)- • Best practices- skill-building workshop (use of plain language, teach-back method, AkaMe3-training course encouraging patients and families to ask 3 specific questions to providers) (10 pub and 2 proj)
- 3.4 Communication skills of social media (1 proj)

MODULE 4

e-Health teaching challenges: readability issues and written communication

- 4.1 How to produce and present information material (lectures, printed material. discharge instructions/leaflets, health forms, use of pictures, create a pill card for the patient) for low HL adults (8 pub and 1 proj)
- 4.2 Learn and teach how to identify "plain language" resources/ and evaluate the difficulty of written material with common tools to assess written material (4 pub and 1 proj)
- 4.3 Overview of prescription labeling laws available from international and European organisations (or nationally) (1 pub)
- 4.4 Methods for verification of patient understanding of health care information taught (misunderstandings and misinterpretations of information cited in the literature, dosage instructions using patients' testimonials/ Relevant research findings involving patients with low literacy and their interpretation of prescription labels and wording (4 pub)
- 4.5 Available interventions (exercise: Design an intervention) (1 pub)
- 4.6 Cultural aspects and strategies to promote HL and eHL (explain the need for healthcare professionals to be culturally competent/ health beliefs on self-care, communicate with a

culturally diverse patient, cross-communication challenges, identify how race and culture relate to health (1 pub)

• 2.3 EXPERT PANEL

Each partner initially invited five experts taking into consideration the inclusion and exclusion criteria. In total, 20 experts participated in both rounds, five from the University of Athens, Greece, six from the University of Ostrava, Czech Republic, five from the Cyprus University of Technology, two from the Akademia Humanistyczno-Ekonomiczna w Łodzi, Poland and two from the Klaipeda State University, Lithuania.

Most of the experts were engaged in nursing education ; two were internationally recognised experts (members of the international HL Association board, focused scientific publications), two experts in eHealth and eLearning and one expert was a member of the national HL Association. Most of the sample was academic nurses (n=15), one of them was a pediatric surgeon, one sociologist, one public health nurse, one geriatrician and one medical doctor (Table 2). Most of the experts (70%) were women.

Table. 2 Domain of Expertise

Domain of expertise	Participants (20)	Country
Internationally recognized expert on Health and eHL	10.5% (2)	Greece, Cyprus
Expert engaged to nursing education (academic nurses)	73.7% (13)	Poland, Greece, Cyprus, Czech Republic, Lithuania
Member of association of HL	5.3% (1)	Greece
Experts in eLearning methodology	10.5% (2)	Cyprus
Expert who dealing either with eHL either with eHealth in general	10.5% (2)	Cyprus

• 2.2 DECISION RULES – 1ST AND 2ND ROUND

Replies were dichotomized into positive and negative response rates to analyse the e-Delphi data. The criteria of assessment followed by the research team:

1. Percentage of agreement over 90%
2. Mean score of each item over 3.5
3. Evaluation of the comments as positive or negative

4. Consensus meetings among all partners to resolve disagreements among the researchers who made the analysis

• 2.3 1ST AND 2ND ROUND PROCESS

Two rounds of the e-Delphi were conducted from October 2020 until January 2021.

• 1ST ROUND

During three online meetings, all partners discussed and agreed to develop the questionnaire's modules and items. Partners invited the experts to participate by email. Participants could connect to the survey in a google form format with a link. The survey was anonymous, as the participants provided demographics: gender, the domain of expertise, profession and partner who approached the expert.

All partners were informed of the deadline for the first round. They agreed to revise accordingly for the second round. Reminders were sent during this period to the experts to complete the survey.

Two researchers of the CUT conducted the analysis of the first round. Researchers resolved any conflicts with the CUT team and all partners according to the decision rule.

• 2ND ROUND

After three weeks, a second questionnaire was sent to all experts who replied to the first round. The partners followed the same process as in the first round. Another two weeks were provided for the new round. The same team conducted the second-round analysis, and the final results were discussed with all partners. Comments and feedback were integrated into the design of the final curriculum.

Graph 1. Final timeline of the Delphi rounds after revisions

Activity	5/10-26/10	27/10-02/12	03/12-17/12	18/12-14/01	15/01-29/1	01/2-18/2	18/2	18/2-15/03
Literature review								
Questionnaire development								
Data collection-Round 1								
Data analysis								
Data collection-Round 2								

Data analysis								
Summary of the results								
Reporting to the partners								

• 3.RESULTS

• ROUND 1

According to the experts' opinion, module 2 "eHealth applications" had the highest percentage of agreement (100%), whilst module 1 "General background of health and eHL" and module 3 "Skills in practice- identification of people with limited HL" had the second higher percentage (95%). Module 4 "eHealth teaching challenges" indicated the lowest percentage of agreement (75%).

Table 3. Modules agreement percentages

Modules	Positive answers	Negative answers	Mean
Module 1 General background of health and eHL	95%	5%	3.6
Module 2 eHealth (IT) applications	100%	0%	3.7
Module 3 Skills in Practice/ Identification of patients with limited HL	95%	5%	3.7
Module 4 e-Health teaching challenges: readability issues and written communication	75%	25%	3.4

Thirteen items (13/19) reached consensus according to the decision rule (1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 3.1, 3.2, 3.3, 4.4, 4.6) and included in the second round.

Six items (1.1, 1.3, 3.4, 4.1, 4.2, and 4.5) were rephrased based on the negative comments and proceeded to the second round. After team discussion we considered those items as important, so we included them in the second round rephrased, for better clarification.

Four (4.1, 4.5, 3.4, 4.2) items passed in the second round after consensus meeting due to lower percentage and means from the decision rule. Items 2.2 and 4.3 were excluded, due to low percentage of agreement (>85%) and low average score (>3.5).

Table 4. Positive and negative response rates per section-round 1

	Positive answers	Negative answers	Mean	Comments
Module 1				
Section 1.1.	95%	5%	3.2	Negative
Section 1.2.	95%	5%	3.65	
Section 1.3.	95%	5%	3.4	Negative
Section 1.4.	95%	5%	3.55	Negative
Section 1.5.	90%	10%	3.6	Positive
Module 2				
Section 2.1.	95%	5%	3.35	2 Positive
Section 2.2.	85%	15%	3.35	4 less positive
Section 2.3.	100%	0%	3.6	3 Positive
Section 2.4.	90%	10%	3.65	1 Positive
Module 3				
Section 3.1	90%	10%	3.4	negative
Section 3.2.	100%	0%	3.85	Positive
Section 3.3.	95%	5%	3.75	most positive
Section 3.4.	75%	15%	3.25	Positive
Module 4				
Section 4.1	80%	20%	3.45	
Section 4.2.	70%	30%	3.15	
Section 4.3.	55%	45%	2.65	
Section 4.4.	90%	10%	3.5	Positive
Section 4.5.	89%	11%	3.45	
Section 4.6.	100%	0%	3.6	most Positive

- ROUND 2**

All partners consent to the analysis of the first round and therefore, the adapted format of the questionnaire with 17 items proceeded to the second round (**Annex II**). Module 2 had the highest score, followed by module 3 and 1. Module 4 obtained the lowest percentage (85%) of the four modules, even higher in comparison to the first round (Table 5).

Table 5 Module sections agreement percentages-round 2

Modules	Positive answers	Negative answers	Mean	SD
Module 1	90%	10%	3.5	0.6
Module 2	100%	0%	3.7	0.4
Module 3	95%	5%	3.7	0.5

Module 4 | 85% | 15% | 3.0 | 0.7

Table 6 Positive and negative response rates per section-round 2

Sections	Positive answers	Negative answers	Mean	SD	Comments
Module 1					
1.1.	80%	20%	3.1	0.7	Most positive
1.2.	100%	0%	3.8	0.3	
1.3.	100%	0%	3.4	0.5	Positive
1.4.	84%	16%	3.4	0.7	
1.5.	95%	5%	3.7	0.5	
Module 2					
2.1.	83%	17%	3.3	0.7	/
2.2.	85%	15%	3.5	0.7	/
2.3.	90%	10%	3.5	0.6	/
Module 3					
3.1	95%	5%	3.6	0.5	negative
3.2.	100%	0%	3.8	0.4	
3.3.	100%	0%	3.9	0.3	
3.4.	89%	11%	3.3	0.7	
Module 4					
4.1.	85%	15%	3.4	0.7	/
4.2.	100%	0%	3.4	0.5	/
4.3.	100%	0%	3.6	0.5	/
4.4.	95%	5%	3.6	0.5	/
4.5.	100%	0%	3.5	0.5	/

Eleven items (1.2,1.3, 1.5, 2.3, 3.1,3.2,3.3,4.2,4.3,4.4, 4.5) reached consensus according to the decision rules.

Six items had a percentage of agreement among 80%-89% (1.1,1.4,2.1,2.2,3.4,4.1). The lowest score for the second round was detected in item 1.1 (80%).

After consensus meeting the following decisions were made:

MODULE 1

- Item **1.1** to be integrated in item **1.2**. Item 1.2 is an introductory item, including definitions and theories of Heath and eHL. Item 1.1 in round 1 was rephrased and included in the second round.
- Item **1.4** indicated low percentage in the second round (84%) and high percentage (95%) in the first round. The item reached consensus as the team considered it to be important. Item **1.4** “impact of low HL” was integrated into item **1.5** “Patient Safety”, due to high correlation among the two items.

MODULE 2

While module 2 indicated a high percentage in total, during the second round (100%), the percentages of agreement per item were relatively low (<90%). The following table indicates the percentages per item in the two rounds.

Table 7 Items comparison of module 2 among the two Delphi rounds

Items	Round 1	Round 2
2.1. Discussing available technologies for rehabilitation (globally/nationally) examples	95%	83%
2.2. Assisted living technologies(globally/nationally) supporting older people	100%	85%
2.3. Privacy and security issues (e.g., exchange of information, personal data, medical data)	95%	90%

Although item **2.2.** had the higher percentage in the first round (100%), the second round indicated a lower percentage of agreement (85%). The percentages of the items **2.1.** and **2.3.** was lower than the decision rule (83% and 90%, respectively). Based on the above results and consensus meeting with all partners, it was decided that the three items of module 2 will be included in module 1 and 3, respectively. More specifically:

- Items 2.1 and 2.2 were integrated in section 1.4.
- Item 2.3 was categorized under module 3 as section 3.5.
- As module 2 no longer existed module 3 was renumbered as module 2.

MODULE 3

Proceeding to module 3, item 3.4 had the lower percentage of all four items (89%).

During the first round, the item had a low percentage (75%) and low mean ($m=3.2$), though the item was rephrased and included in the second round, as we considered it an important topic. During this second round, experts were asked to express their opinions if section 3.4 was added to modules 2 or 3. The results revealed that experts considered section 3.4. to be more relevant to module 3 (55% of agreement) than module 2 (45% of agreement). All partners consent that this item is of high importance and to be included under module 3.

MODULE 4

Regarding module 4, all items had high percentages, except from item 4.1 (85% on round 2 and 80% on round 1). Item 4.1 was rephrased after the first round due to low mean ($m=3.4$) and percentage (80%); in the second round, the percentage remained low, so it did not reach a consensus. Module 4 was renumbered to module 3.

Thus, the final format of the modules is:

Table 8 Final Modules from the second round

Module 1. General background of HL and eHL (definitions, prevalence, outcomes on patients)-Leader UO and NKUA
1.1. Introduction to Health and eHL (definitions) / eHL training skills (Use and operate media, information and seeking skills) / Learn how to search reliable online health information and scientific resources
1.2. Factors associated with HL and HL
1.3. HL and Patient Safety (e.g. impact of LHL, medication adverse events, medication use and change)
1.4 Discussing available technologies (applications, assisted living technologies, other rehabilitation technologies)
Module 2. Skills in Practice- Identification of patients with limited HL-Leader AHE and CUT
2.1 Learn how to administer the most used instruments for measuring HL and eHL available nationally
2.2 Training on how to identify common signs that indicate low HL/ Observation of patient behavior / Training on how to recognise the key differences between skilled and poor readers
2.3 Communicate and cooperate with low HL adults (Oral and written communication)/ - Best practices- skill-building workshop (use of plain language, teach-back method, AksMe3-training course encouraging patients and families to ask 3 specific questions to providers)
2.4 Communication skills of social media (how to use Viber, WhatsApp, Skype, Messenger and other social media tools during the provider -patient interaction, assessing fake news, unreliable resources)
2.5 Privacy and security issues (e.g. exchange of information, personal data, medical data)
Module 3. feasibility and readability issues and eHealth challenges-Leader KVK and CUT

3.1 Learn and teach how to identify "plain language" resources/ and evaluate the difficulty of written material with common tools to assess written material in electronic databases

3.2 Methods for verification of patient understanding of health care information taught (actionability and understandability, misunderstandings and misinterpretations of information cited in the literature, dosage instructions using patients' testimonials)

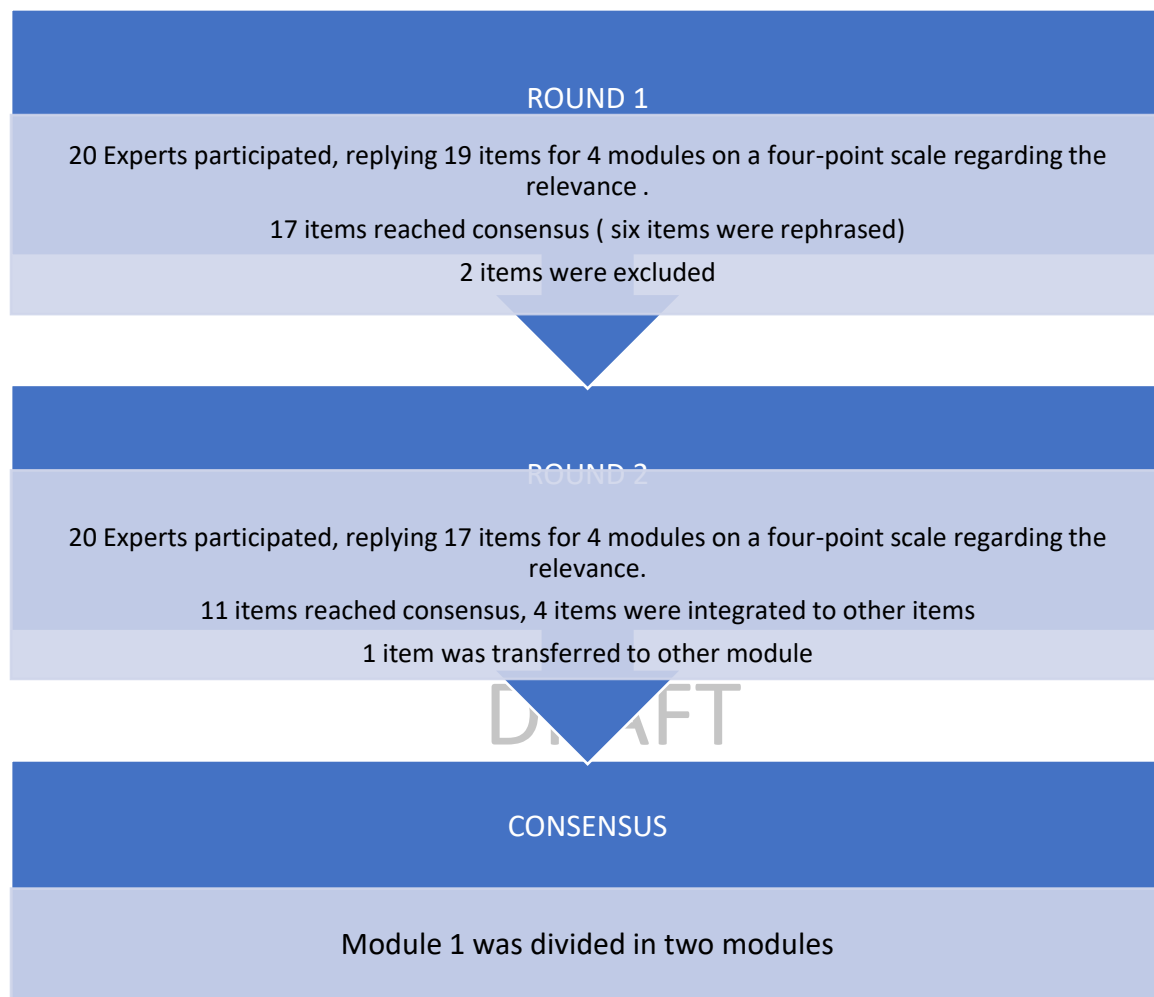
3.3 Exercise: Design an eHL intervention

3.4 Cultural aspects and strategies to promote HL and eHL (explain the need for healthcare professionals to be culturally competent/ health beliefs on self-care, communicate with a culturally diverse patient, cross-communication challenges, identify how race and culture relate to health)

Final consensus meetings

After completing the e-Delphi study, each partner was responsible for developing and analysing the contents for each module. As a next step, a consensus meeting took place, and all the partners agreed that Module 1 should be divided into two modules due to time constraints. During the module analysis, safety issues were found to have a broader range, with several sub-themes; thus, it was decided to be included as a separate module.. So, Module 1 will include the theoretical background of Health and eHL, and the added Module 4 will include patient safety issues. The decision was made as this format is more functional regarding the duration of Module 1 (Graph 2).

Graph 2. Summary of the e-Delphi process



• **CONCLUSIONS- FINAL MODULES**

The e-Delphi methodology provided valuable input in developing the final curriculum that would focus on improving nurses’ competencies in eHL and HL in their practice, especially in caring for older people. The two rounds and the consensus meeting concluded in the final four modules for the HL and eHL training among nurses (Table 9).

Module 1 includes two core items and is focused on the training of nurses and nursing students on the concepts of HL and eHL, eHealth, mHealth. The factors associated with HL and eHL, the importance of the nursing practice, the prevalence of limited HL and eHL and outcomes

for nurses and older people will be discussed. The nurse-older person relationship will be introduced. Trainees will be competent to describe the dimensions of the concepts, the prevalence, identify factors and barriers, realise the impact and understand the importance of using reliable sources.

Module 2 includes five items and is focused on enhancing communication skills. It aims to teach nurses to identify low HL older adults using instruments and behaviour observations. The trainees will be introduced to the most frequently used instruments for measuring the level of HL and eHL of older adults. Most communication strategies, privacy and security issues for social media will be learned. Interactive exercises will focus on the teach-back method, Ask Me 3 and plain communication (avoid medical jargon, chunk, simplify). A patient-centered approach will also be integrated into all aspects of the didactic and interactive part.

Module 3 includes four items and aims to train nurses and nursing students to assess the readability of online health information, verify patients' understanding of written information, plan intervention as an interactive exercise and understand the cultural aspects and strategies to promote HL and eHL. The trainees will be competent to evaluate the readability of written health materials and revise them to ensure clarity and simplicity, develop individualized action plans for patients' education, identify the different concepts of cultural sensitivity and diversity, use appropriate material and integrate cultural sensitive communication strategies.

Module 4 includes two core items and focuses on patient safety, explaining the impact of low HL on patients' outcomes, medicine adherence, discussing safety issues at home environment and introducing the available assisted living technologies. Trainees will be competent to identify the adverse outcomes of low HL on patient safety, explain the issue of remote monitoring of patients and eHealth principles, describe available technologies and applications for older people, recognize red flags behaviors related to patient safety and explain the impact of low HL in compliance in treatment.

Table 9 Final Modules after consensus meeting

Module 1. General background of HL and eHL (definitions, prevalence, outcomes on patients)-Leader NKUA

1.1. Introduction to Health and eHL (definitions) / eHL training skills (Use and operate media, information and seeking skills) /Learn how to search reliable online health information and scientific resources

1.2. Factors associated with HL and HL

Module 2. Skills in Practice- Identification of patients with limited HL-Leader AHE and CUT

2.1 Learn how to administer the most used instruments for measuring HL and eHL available nationally

2.2 Training on how to identify common signs that indicate low HL/ Observation of patient behavior / Training on how to recognise the key differences between skilled and poor readers

2.3 Communicate and cooperate with low HL adults (Oral and written communication)/ - Best practices- skill-building workshop (use of plain language, teach-back method, AxsMe3-training encouraging patients and families to ask 3 specific questions to providers)

2.4 Communication skills of social media (how to use Viber, WhatsApp, Skype, Messenger and other social media tools during the provider -patient interaction, assessing fake news, unreliable resources)

2.5 Privacy and security issues (e.g., exchange of information, personal data, medical data)

Module 3. feasibility and readability issues and eHealth challenges-Leader KVK and CUT

3.1 Learn and teach how to identify "plain language" resources/ and evaluate the difficulty of written material with common tools to assess written material in electronic databases

3.2 Methods for verification of patient understanding of health care information taught (actionability and understandability, misunderstandings and misinterpretations of information cited in the literature, dosage instructions using patients' testimonials)

3.3 Exercise: Design an eHL intervention

3.4 Cultural aspects and strategies to promote HL and eHL (explain the need for healthcare professionals to be culturally competent/ health beliefs on self-care, communicate with a culturally diverse patient, cross-communication challenges, identify how race and culture relate to health)

Module 4. Patient safety and HL-Leader UO

1.1. HL and Patient Safety (e.g. impact of LHL, medication adverse events, medication use and change)

1.2 Discussing available technologies (applications, assisted living technologies, other rehabilitation technologies)

• REFERENCES

1. Hernes K, Ott V. Health Literacy Education for Undergraduate Health Professions Students: A Call to Action. *HLRP: Health Literacy Research and Practice*. 2018;2(3):e163–5.
2. Richardson C, Ree M, Bucks RS, Gradisar M. Paediatric sleep literacy in Australian health professionals. *Sleep Medicine* [Internet]. 2021;81:327–35. Available from: <https://www.sciencedirect.com/science/article/pii/S1389945721001349>
3. Nesari M, Olson JK, Nasrabadi AN, Norris C. Registered Nurses' Knowledge of and Experience with Health Literacy. *Health literacy research and practice* [Internet]. 2019 Dec 5;3(4):e268–79. Available from: <https://pubmed.ncbi.nlm.nih.gov/31893259>
4. Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. *Journal of advanced nursing*. 2000 Oct;32(4):1008–15.
5. Sørensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: A systematic review and integration of definitions and models. *BMC public health*. 2012;12(8):80.
6. Sørensen K, Pelikan JM, Röthlin F, Ganahl K, Slonska Z, Doyle G, et al. Health literacy in Europe: Comparative results of the European health literacy survey (HLS-EU). *European Journal of Public Health*. 2015;25(6):1053–8.
7. Huang Y-M, Pecanac KE, Shiyanbola OO. “Why Am I Not Taking Medications?” Barriers and Facilitators of Diabetes Medication Adherence Across Different Health Literacy Levels. *Qualitative Health Research*. 2020 Jul 29;30(14):2331–42.
8. Miller TA. Health literacy and adherence to medical treatment in chronic and acute illness: A meta-analysis. *Patient education and counseling*. 2016 Jul;99(7):1079–86.
9. Healthy People 2030. *Healthy People 2030 Objectives: Older people* [Internet]. U.S. Department of Health and Human Services. [cited 2021 Feb 26]. Available from: <https://health.gov/healthypeople/objectives-and-data/browse-objectives/older-adults>
10. Lawless J, Toronto CE, Grammatica GL. Health literacy and information literacy: a concept comparison. *Reference Services Review*. 2016;44(2):144–62.
11. Wittenberg E, Ferrell B, Kanter E, Buller H. Health Literacy: Exploring Nursing Challenges to Providing Support and Understanding. *Clinical journal of oncology nursing*. 2018 Feb;22(1):53–61.
12. Kennard D. Emergency Room Nurses Knowledge of and Experience with Health Literacy and their Patient Teaching Methods [Internet]. 2017. Available from: <https://scholarship.shu.edu/dissertations/2270>
13. Wittenberg E, Goldsmith J, Ferrell B, Ragan SL. Promoting improved family caregiver health literacy: evaluation of caregiver communication resources. *Psycho-Oncology*. 2017;26(7):935–42.

14. Toronto CE, Weatherford B. Registered nurses' experiences with individuals with low health literacy: A qualitative descriptive study. *Journal for Nurses in Professional Development*. 2016;32(1):8–14.
15. Sharifirad G, Mostafavi F, Reisi M, Mahaki B, Javadzade H, Heydarabadi AB, et al. Predictors of nurses' intention and behavior in using health literacy strategies in patient education based on the theory of planned behavior. *Materia socio-medica*. 2015 Feb;27(1):22–6.
16. Nantsupawat A. Nurses' knowledge of health literacy, communication techniques, and barriers to the implementation of health literacy programs: A cross-sectional study. *Nursing and Health Sciences*. 2020;(February):1–9.
17. Toronto CE, Weatherford B. Health literacy education in health professions schools: An integrative review. *Journal of Nursing Education*. 2015;54(12):669–76.
18. Toronto CE. Health literacy competencies for registered nurses: An e-Delphi study. *Journal of Continuing Education in Nursing*. 2016;47(12):558–65.
19. Coleman CA, Hudson S, Maine LL. Health literacy practices and educational competencies for health professionals: A consensus study. *Journal of Health Communication*. 2013;18(SUPPL. 1):82–102.
20. Nair, R, Aggarwal, R, Khanna D. Methods of Formal Consensus in Classification/Diagnostic Criteria and Guideline Development. *Semin Arthritis Rheum*. 2011;41(2):95–105.

• ANNEX 1 – DELPHI SURVEY QUESTIONS

eLILY2- IO1 – QUESTIONNAIRE

Items

MODULE 1 General background of HL and eHL (definitions, prevalence, outcomes on patients)

1.1. Most common theories and definitions of HL / Compare and contrast literacies

1.2. Introduction to eHL/ HL training skills (Use and operate media, information and seeking skills,)/Learn how to search reliable online health information and scientific resources

1.3. Factors associated with HL and HL epidemiology

1.4. Impact of limited HL on patient outcomes, health system, and costs

1.5. HL and Patient Safety (e.g. medication adverse events, medication use)

Module 2. eHealth (IT) applications

2.1. Discussing available technologies for rehabilitation (globally/nationally) examples

2.2. Robotics on eHealth (globally/nationally) supporting older people

2.3. Assisted living technologies (globally/nationally) supporting older people

2.4. Privacy and security issues (e.g. exchange of information, personal data, medical data)

Module 3. Skills in Practice Identification of patients with limited HL

3.1. Learn how to administer the most used instruments for measuring HL and eHealth available nationally

3.2. Training on how to identify common signs that indicate low HL/ • Observation of patient behavior / • Training on how to recognise the key differences between skilled and poor readers

3.3. Communicate and cooperate with low HL adults (Oral and written communication)- • Best practices- skill-building workshop (use of plain language, teach-back method, AkaMe3- training programme encouraging patients and families to ask 3 specific questions to providers)

3.4. Communication skills of social media

Module 4. e-Health teaching challenges: readability issues and written communication

4.1. How to produce and present information material (lectures, printed material. discharge instructions leaflets, health forms, use of pictures, create a pill card for the patient) for low HL adults (Best practices for simplifying written material-medical jargon)

4.2. Learn and teach how to identify "plain language" resources/ and evaluate the difficulty of written material with common tools to assess written material (Fry readability formula, Flesch-Kincaid readability tool on Microsoft word, Suitability Assessment of Materials)

(SAM) analysis, Simple Measure of Gobbledygook (SMOG), Patient Education Materials Assessment Tool (PEMAT)

4.3. Overview of prescription labeling laws available from international and European organisations (or nationally)

4.4. Methods for verification of patient understanding of health care information taught (actionability and understandability, misunderstandings and misinterpretations of information cited in the literature, dosage instructions using patients testimonials/ Relevant research findings involving patients with low literacy and their interpretation of prescription labels and warnings)

4.5. Available interventions (exercise: Design an intervention)

4.6. Cultural aspects and strategies to promote HL and eHL (explain the need for healthcare professionals to be culturally competent/ health beliefs on self-care, communicate with a culturally diverse patient, cross-communication challenges, identify how race and culture relate to health)

DRAFT

• **ANNEX 2 – DELPHI SURVEY QUESTIONS- SECOND ROUND**

Items

Module 1. General background of HL and eHL (definitions, prevalence, outcomes on patients)

1.1. Conceptual definitions and most common theories of Health and eHealth literacies

1.2. Introduction to eHL / eHL training skills (Use and operate media, information and seeking skills) / Learn how to search reliable online health information and scientific resources

1.3. Factors associated with HL and HL

1.4. Impact of low HL on patient outcomes, health system, and costs

1.5. HL and Patient Safety (e.g. medication adverse events, medication use and change)

Module 2. eHealth (IT) applications

2.1. Discussing available technologies for rehabilitation (globally/nationally) examples

2.2. Assisted living technologies (globally/nationally) supporting older people

2.3. Privacy and security issues (e.g. exchange of information, personal data, medical data)

Module 3. Skills in Practice- Identification of patients with limited HL

3.1 Learn how to administer the most used instruments for measuring HL and eHL available nationally

3.2 Training on how to identify common signs that indicate low HL/ Observation of patient behavior / Training on how to recognise the key differences between skilled and poor readers

3.3 Communicate and cooperate with low HL adults (Oral and written communication)/ - Best practices- skill-building workshop (use of plain language, teach-back method, AxsMe3-training encouraging patients and families to ask 3 specific questions to providers)

3.4 Communication skills of social media (how to use Viber, WhatsApp, Skype, Messenger and other social media tools during the provider -patient interaction, assessing fake news, unreliable resources)

Module 4. Feasibility and readability issues and eHealth challenges

4.1. How to produce and present eHealth information material (e.g. applications, teleconferences, eforms, use of pictures, create a e-pill card for the patient) for low HL adults (Best practices for simplifying terminology -medical jargon)

4.2 Learn and teach how to identify "plain language" resources/ and evaluate the difficulty of written material with common tools to assess written material in electronic databases

4.3 Methods for verification of patient understanding of health care information taught (actionability and understandability, misunderstandings and misinterpretations of information cited in the literature, dosage instructions using patients' testimonials)

4.4 Exercise: Design an eHL intervention

4.5 Cultural aspects and strategies to promote HL and eHL (explain the need for healthcare professionals to be culturally competent/ health beliefs on self-care, communicate with a culturally diverse patient, cross-communication challenges, identify how race and culture relate to health)



Co-funded by the
Erasmus+ Programme
of the European Union