

IDEAHL
Improving Digital Empowerment for Active Healthy Living



D2.2 REPORT ON CO-CREATION

WP2



**Funded by
the European Union**

The project "*Improving Digital Empowerment for Active Healthy Living (IDEAHL)*" has received funding by the Horizon Europe Framework Programme under GA 101057477.

Technical References

Deliverable No.	2.2
Dissemination Level¹	PU
Work Package	2
Lead beneficiary	ISRAA
Version	3
Due date of deliverable	30 September 2023
Actual submission date	3 October 2023

Versions

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¹ PU = Public; SEN = Sensitive

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Approved by Coordinator on: 03/10/2023

Approved by Quality Manager on 03/10/2023

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GLOSSARY / LIST OF ACRONYMS

AB: Advisory Board

D: Deliverable

dHL: Digital Health Literacy

(d)HL: Health literacy + Digital health literacy

EU: European Union

GP: General Practitioner

HL: Health literacy

M: Month

T: Task

WP: Work Package

LIST OF ACRONYMS - list of partners

CSPA: Consejería de Salud del Principado de Asturias

SESPA: Servicio de Salud del Principado de Asturias

FICYT: Fundación para el Fomento en Asturias de la Investigación Científica Aplicada y la Tecnología

CE: Consulta Europa Projects and Innovation

ISRAA: Istituto per Servizi di Ricovero e Assistenza agli Anziani

RMIT: Royal Melbourne Institute of Technology Spain SL

E-SENIORS: Initiation des Seniors aux NTIC Association

EIWH: European Institute of Women's Health

CEI: Central European Initiative – Executive Secretariat

MLHSA: Ministry of Labour, Health, Social, Family Affairs and Integration of the Free and Hanseatic City of Hamburg

UCN: University College of Northern Denmark

MDU: Mälardalen University

SeAMK: Seinäjoki University of Applied Sciences

ADIPER: ADI & SALU SERSOC SL – Socio-sanitary services

ALL DIGITAL: Digital Skills Across Europe

CDC: Caritas Diocesana de Coimbra



EXECUTIVE SUMMARY

The deliverable D2.2 “Report on co-creation” describes the co-creation process implemented by the 14 partners belonging to the IDEAHL project consortium in 10 EU Member States. The co-creation process constitutes the central phase of WP2 “Co-creation of the EU strategy to improve (digital) Health Literacy ((d)HL)” and occurred under Task 2.3 “Traditional co-creation activities” which took place between M10 (February 2023)-M16 (July 2023).

The main objective of this deliverable is to present the findings of the co-creation conducted with the multiple population target groups identified by the consortium. These findings will inform the EU (d)HL Strategy and represent one of its building blocks. Indeed, knowing the habits, points of view, difficulties, strengths, and proposals put forward by the population is essential in the goal of developing a comprehensive and inclusive document, just as the strategy is intended, to be adopted as an effective tool in the aim of improving (d)HL.

With this purpose, the co-creation, carried out accordingly to the methodological indications contained in the D2.1 “Co-creation methodology”, examined key issues related to the relationship between population groups and HL and (d)HL to identify critical aspects on which to intervene and to gather suggestions for effectively solving them. The involvement of segments of the population presenting different characteristics, social backgrounds, social roles, and needs, made the process truly all-inclusive and capable of extensively representing the instances of the different social actors. Based on the assigned target audience, partners selected the strategies they deemed appropriate to create engagement and the methodologies they considered most effective to gather information and incentivise the formulation of new ideas and indications. In the end, a total of **140 co-creation sessions were held**.

The document also provides an overview of the dissemination actions carried out by the partners in order to give visibility to the co-creation pathway undertaken in their countries. Moreover, it illustrates the results of the Social Media Campaign, of the EU survey and of the additional co-creation activities aimed at extending the outreach of the project and gathering additional inputs and feedback from (d)HL experts, and the external Advisory Board (AB) members on the strategy. These activities were conducted under Task 2.4 within the same time frame of the co-creation.

The deliverable consists of six chapters:

Chapter 1- INTRODUCTION briefly presents the IDEAHL project and the specific objectives of the co-creation within its scope.

Chapter 3- TARGET lists the 19 target groups, the organizations that co-created with them, the expected number of participants and those actually achieved. It also illustrates the channels used for engagement, focusing on the effective ones, and highlighting the main barriers encountered in this delicate phase.

Chapter 4- METHODOLOGY reports the methods partners adopted to conduct the co-creation sessions, showing their strengths and weaknesses.

Chapter 5- RESULTS describes the findings of the co-creation process broken down by target group, emphasising the barriers experienced with (d)HL, and the suggested areas of improvement.

Chapter 6- COMMUNICATION AND DISSEMINATION gives an account of the dissemination actions carried out by the partners during the co-creation phase, dwelling then on the results of the Social Media Campaign, the EU survey, and the additional online co-creation sessions and activities.

Chapter 7- CONCLUSION AND FUTURE PROSPECTS summarises the core findings from the co-creation with a view to its inclusion in the EU (d)HL Strategy.

The results gathered from the co-creation process showed that the different population groups that have been involved are aware of the changes that are affecting health policies, mainly because of the direct experience they have in their daily lives, albeit in different ways depending on their specific characteristics and habits. This change obviously has multiple and different impacts on the population: while younger people tend to cope with it rather well, especially by virtue of their greater familiarity with technology and the digital environment, it poses challenges to the more vulnerable groups (to which, clearly, young people may also belong), such as migrants, people with disabilities, older adults and those who, for a variety of different reasons, possess a low digital literacy.

On the other hand, technology and digitalisation also seem to represent a challenge for health professionals and formal carers, both as a new element to be integrated into daily work practices and routines, and because it is often not adequately supported by training in their use and a good technical infrastructure.

However, health digitalisation shows transversally recognised criticalities, regardless of personal characteristics of the population target group. These criticalities appear particularly evident and relevant with regard to the online health-related information, which, besides being too abundant (which in itself is not necessarily a negative element), is difficult to assess in terms of reliability. Structural discrimination, hence related to the design and delivery of services, communication and information, is another significant factor, whose effects manifest in multiple declinations: in the difficulty of access to online services that affects in different forms the vulnerable groups, as mentioned above; in the difficulty of finding reliable and quality information on feminine health; in the limited attention to linguistic and cultural barriers of the migrant population; in the more limited access to technology and, consequently, to services of low-income citizens and citizens living in remote areas.

On the other hand, traditional information channels and services are often mentioned as being affected by phenomena analogues to those highlighted for their digital versions. Even traditional information and communication should be improved, at first targeting them according to the target population the aim to. The doctor-patient relationship is also part of this reflection, especially with reference to the GP. Here, traditional means and channels of communication and exchange coexist now with digital ones, such as online booking of visits, downloading of reports and prescriptions, which can cause disorientation and dissatisfaction, penalising the relationship. In regard to this, participants in the co-creation emphasise that doctors and professionals, in particular the GP, must not forget their role as a reference and guide for the patient: they be able to listen and understand them, and to lead them along the changes which are currently taking place.

Education, communication, information and accessibility are the factors that most often return in the reflections of the co-creation participants: (d)HL education and training, which should be addressed both to the population and to health professionals; communication, which should become multi-channel and more attentive to the specificities and characteristics of an increasingly composite population; information, which should be simple but complete and reliable; and finally, accessibility as an approach to be adopted transversally in planning and delivering services and the multiple actions and initiatives aimed at supporting the population's health.

A closing note. It is important to reiterate that due to its nature of report, this document merely summarises the views, ideas, habits, and proposals gathered from specific groups, as declared above. It therefore does not question their validity, veracity and being

based on proven facts and evidence. On the contrary, it consists of testimonies and reflections, which in turn are closely correlated to participants' daily experience, perceptions and feelings, and on a plurality of variables connected to their socio-cultural background, beliefs and convictions that are totally personal, even when they are pronounced on the population at large and not only with reference to themselves. What was expressed by the participants has not been subjected to problematisation, argumentation or validation on the basis of literature and scientific production, nor has it been placed in a specific theoretical framework or interpreted and discussed in the light of a particular interpretative approach.

1. INTRODUCTION

1.1 IDEAHL PROJECT

The 'Improving Digital Empowerment for Active Healthy Living' project (IDEAHL) aims at developing and testing new models and approaches of intervention and application of (digital) health literacy (hereafter referred as '(d)HL') through the co-creation of a comprehensive and inclusive EU Strategy.

The IDEAHL consortium is composed of 14 multi-disciplinary beneficiary partners and one associated partner from 10 EU Member States, which aim to work hand in hand with patients, citizens, and the broad socio-economic sector at local level. The project has been conducting an extensive mapping of (d)HL research, initiatives, and projects in the EU and beyond. It has reviewed and analysed best practices and 'champions & survivors' in these fields to foster knowledge exchange and uptake of selected practices.

Building on these foundations, the latest step for IDEAHL has been to launch a co-creation process to design and plan its EU (d)HL Strategy, involving over 1,300 different stakeholders, from citizens and patients to healthcare and social services, policy makers, non-health sectors, academia, etc.

The collected feedback will allow to develop an inclusive Strategy to improve (d)HL for the benefit of all citizens focusing on health promotion, disease prevention, treatment and (self-)care as well as on monitoring its impact on the wellbeing, productivity, and the economy. The Strategy will pay special attention to social innovation, inclusion, gender, and ethics & privacy dimensions. Finally, a number of actions of the Strategy will be

piloted in the 10 project countries. From the testing and evaluation of the pilots, IDEAHL will be able to put forward a common EU monitoring model and indicators for (d)HL levels.

The ultimate purpose of the project is to empower EU citizens in using digital tools to take a more active role in the management of their own health and well-being, as well as supporting social innovations for person-centred care models.

2. PURPOSE AND OBJECTIVES

To achieve the above-mentioned objectives, the project will implement co-creation and co-design actions for the EU (d)HL Strategy under the Work Package (WP) 2 – Co-creation of the EU strategy to improve (d)HL.

The **aims of WP2** are to:

- 1) **develop a comprehensive and inclusive EU Strategy to improve (d)HL** for the benefit of all citizens focusing on health promotion, disease prevention, treatment, and self-care.
- 2) **Engage a variety of stakeholders** at local and regional level, healthcare professionals, social services professionals, citizens and patients, practitioners from education, etc.

To achieve these objectives, **five tasks are foreseen in WP2**:

- T2.1 Co-creation methodology and roadmap (M7-M9) – Leader: CE
- T2.2 Setting the framework (M5-M9) – Leader: ISRAA
- T2.3 Traditional “co-creation” activities (M10-M16) – Leader: ISRAA
- T2.4 Social media Campaign (M10-M16) – Leader: CE
- T2.5 Development of the EU (d)HL Strategy (M14-M17) – Leader: CSPA

The present deliverable (D2.2) is related to T2.3 and presents the results of the co-creation phase performed from M10 to M16, following the co-creation methodology described in D2.1. The deliverable mainly intends to gather the ideas and opinions of the 19 target groups involved, which will contribute to feed the final outcome of WP2 – the development of EU (d)HL Strategy (T2.5) and of the related deliverable (D2.3) IDEAHL EU (d)HL Strategy. D2.2 will also give feedback on the whole co-creation phase, which

is on the target engagement and co-creation methods and on the tools adopted for dissemination, including the results of T2.4 Social media Campaign.

3. TARGETS

From February (M10) to August (M16), IDEAHL partners have conducted co-creation activities with 19 different target groups, which were chosen based on their organisation's expertise and nature. The choice of the target groups was intended to cast light on the points of view, perspectives, and opinions of a wide audience. Diverse vulnerable conditions have been considered in order to give voice to population groups that may be left behind or not properly considered in the planning and management of the digitalisation process in our societies, and, specifically, in the healthcare sector. This pragmatic selection of target groups may result in the fact that not all results will represent all EU-countries, as the culture, the digitalisation of the health systems, the range of Internet access etc. do differ across EU countries.

The present deliverable gathers the ideas that were co-created with the participants from each target group during the co-creation sessions run by the project partners. The total number of co-creation sessions that took place amounts to 140. To avoid excessive redundancy in the text, co-creation sessions are referred to as co-creation activities as well; therefore, both terms are to be regarded as synonyms.

Table 1 (Overview of target groups) presents an overview of the target groups involved. While Table 1 gathers the main data regarding the 19 different target groups, chapter 5 "Results" will present such groups in an aggregated form in order to give a clearer and comprehensive outline making clear whenever the inputs gathered relate to one subgroup or to another.

3.1 OVERVIEW OF TARGET GROUPS

TARGET	COUNTRY	ORGANISATION	EXPECTED NO. OF PARTICIPANTS	PEOPLE REACHED
Policy Makers	Spain	CE	10	13
	Italy	CEI	20	9
	Sweden	MDU	10	10
Members of the Women's Health Task Force	Ireland	EIWH	5	5
Digital literacy and digital health experts	Spain	RMIT	20	16
	Belgium	ALL DIGITAL	*	23 ²
Healthcare, social work and elderly care professional	Spain	CSPA-SESPA-FICYT	100	98
	Ireland	EIWH	20	20
	Finland	SeAMK	6	6
	Spain	ADIPER	40	41
Healthcare, social work and elderly care lecturers	Finland	SeAMK	6	7

² All Digital decided to engage an additional group of experts, although not being a commitment of the Grant Agreement (see full explanation at pages 17-18).

Healthcare, social work and elderly care students	Finland	SeAMK	40	42
Formal & informal caregivers	Spain	CSPA-SESPA-FICYT	100	101
	Italy	ISRAA	50	55
	France	E-SENIORS	10	7
	Denmark	UCN	60	44
	Spain	ADIPER	15	15
	Portugal	CDC	20	20
Families	Spain	ADIPER	25	26
	Denmark	UCN	20	18
People with disabilities	Sweden	MDU	10	2
Older adults	Italy	ISRAA	50	50
	France	E-SENIORS	10	6
	Spain	ADIPER	120	121
Older people in fragile conditions	Italy	ISRAA	30	30
	France	E-SENIORS	5	5
	Portugal	CDC	30	35
Women	Belgium	ALL DIGITAL	10	17

Pregnant women	Spain	CSPA-SESPA-FICYT	5	10
Young women	Spain	CE	20	37
	Ireland	EIWH	20	20
Children	Spain	CSPA-SESPA-FICYT	30	53
Migrants	Spain	CSPA-SESPA-FICYT	100	117
	Germany	MLHSA	20	61
	Sweden	MDU	20	20
Prisoners	Spain	CSPA-SESPA-FICYT	100	133
Citizens with low income or with low social index	Spain	CSPA-SESPA-FICYT	100	97
	Germany	MLHSA	30	**
	Portugal	CDC	10	10
Adults with low access to digital tools	Belgium	ALL DIGITAL	25	34
TOTAL			1,322	1,434

Table 1 - Target groups in numbers.

As Table 1 shows, the co-creation phase has been successfully run, succeeding to even exceed the total threshold established at the beginning. Comprehensively, 1,434 participants were engaged in the activities, which is 112 participants more than planned. Overall, it was almost possible to achieve the quantitative targets established in the

project proposal, with some target groups being more challenging than others, and some partners succeeding in reaching out to more people than initially planned – mostly in the attempt to offset the targets remained unachieved.

(*) In the case of All Digital, the expected number of participants for the target group “Digital literacy and digital health experts” amounted to 180, according to D2.1 Co-creation methodology; however, such number referred to additional (non-mandatory) activities that the interested partner proposed. Through these further sessions All Digital succeeded in engaging 23 participants, among its members and stakeholders.

(**) Conversely, the consultation of the target groups “Low-income citizens” and “Migrants” in Germany exceeded the expectations, succeeding in involving 61 out of 50 participants. Yet, the high engagement rate of people with immigrant background, among whom many belonged to the low-income societal layer, made it difficult to clearly distinguish between the participants belonging to one or the other target group. The two categories were overlapping at least in the groups contacted. Despite being impossible to separate the groups, the co-creation activities performed with this latter in Germany were either way approved, having the quantitative target been significantly overcome.

The next section will describe the engagement process and channels used and will further comment Table 1, with a focus on the difficulties encountered along the way and the modifications that had to be introduced in order to safeguarding the quality and the results of the co-creation phase.

3.2 ENGAGEMENT CHANNELS AND COMPREHENSIVE EVALUATION

3.2.1 Overview of the engagement channels used

Following the instructions of D2.1 Co-creation methodology, where a detailed description of all the engagement techniques and target-specific recommendations were provided, all partners adopted various engagement channels simultaneously to reach out to their predefined target groups. While allowing for an optimisation of time and resources, the use of different methods at the same time highlighted which were the most and the least effective ones, besides the various challenges encountered along the way.



The success of the diverse techniques depended on the type of target group, its peculiarities and needs. On average, it can be affirmed that the following proved to be the most used channels:

- **Direct phone or e-mail contact.** This method was particularly useful with vulnerable groups or with target groups with which partners worked daily or had a direct contact, i.e., autonomous older people, caregivers, healthcare professionals, people with disabilities, policy makers, etc. It allows to capitalise on previously interwoven relationships, based on mutual trust and confidentiality, following a more personal approach. Doing so, the communication is perceived as more immediate and less time-consuming, especially in the case of healthcare professionals, experts, or policy makers, all of whom have a tight agenda and work schedule.
- **Externalisation/Reliance on third parties** to get in contact with a target group. Establishing contact with third organisations, institutions, local authorities, and unit coordinators to reach out to some target groups has been recognised as a success factor, especially in the case of frail older adults, caregivers, children, prisoners, low-income people, migrants, pregnant women, and women in general. When lacking direct contact with a quantitatively sufficient audience, this strategy has allowed partners to extend the search geographically and numerically. Also, reaching out to third parties proved essential to have a trusted intermediary, especially in the case of prisoners, migrants, and low-income people.
- **Tailored invitations.** *Ad hoc* messages were particularly useful in the case of (d)HL experts and policy makers, who are known to have a tight agenda. Tailored communications, meaning personal e-mail invitations or customized e-mail campaigns, were key to ensure the direct reception by policy makers and experts, for whom co-creation sessions were mostly held digitally for the same reasons as above.
- **Social media posts.** Publication of posts on social networks was deemed useful to reach out to young people, especially young women. Posts were mostly published in specific groups and communities or were more broadly used to communicate the IDEAHL project goals, the goals of the co-creation and details around the related workshops. While this latter use of social media is to be found in almost all partners' engagement strategies, except for certain target groups (i.e., prisoners, children, experts, people with disabilities), the use of social media gave



the best results in the recruitment of women. Among the various social media, use of LinkedIn and Facebook proved the most effective, while Twitter was by far the least effective.

- **Inclusion of co-creation workshops in previously organised events.** Sometimes co-creation sessions were organised in conjunction with previously organised events, such as university seminars, members' and stakeholders' events, language cafés, etc. This was helpful to optimise the time availability of some target groups or to reach wider audiences. Partners have used this strategy in the case of migrants, (d)HL experts and students.

These techniques have been used the most and have brought positive results in the engagement of the target groups. A strong effort has been made by the partners in exploiting and exploring different engagement channels. This allowed the engagement strategy followed to bring along valuable results, even facing some important challenges and barriers. All the details around the challenges encountered and the modifications adopted are illustrated in the next subsection.

3.2.2 Analysis of the challenges and barriers encountered

As often inherent to the planning and performance of co-creation activities, during this phase, there were difficulties in reaching specific target groups or the minimum numbers declared. This had to do with multiple challenges. For instance, there were unexpected dropouts from contacted participants who did not show up at the co-creation sessions, internal staff changes in some of the partners' organisations, and late replies of approval from competent ethical committees which delayed the beginning of the co-creation phase for some partners, determining time constraints to finalise the activities. In some cases, major problems arose regarding the engagement of some target groups, which was however successfully overcome in a collaborative way with all interested parties. As a consequence, some modifications, and in one case a target substitution, were introduced to help partners complete their tasks.

In the case of children with diabetes, there were major difficulties in reaching out to the families. Despite adopting diverse engagement strategies and having involved different stakeholder organisations, there was no positive commitment from the target group to participate in the IDEAHL co-creation phase. The reasons behind such impossibility are diverse. One main cause is that several other investigators/research projects are inviting the group of children with diabetes for participation projects. Thus, there was a



“competition” on recruiting them. Moreover, the stakeholder organisations contacted, like leading research institutions in the field, refused to get involved in the project given the fact that they were not partner of it and the lack of economic compensation. Finally, adding to this, the diagnoses of diabetes among children in Northern Denmark, where their involvement would have taken place, are limited, which also explains the difficulty to recruit them. To overcome the impasse, it was agreed that this target group would have been substituted with “Families with diagnosed chronic diseases”, which in chapter 5 are presented as aggregated to the more general target group of “Families”. The choice of this other target group was motivated by the fact that diabetes is a chronic disease, an alternative angle that allowed to maintain this specificity. Also, the inclusion of families in the target group, without imposing age constraints, was needed to broaden the audience, and made it easier to get them involved in co-creation activities. In the end, it was decided to maintain the same quantitative target previously assigned in the case of children with diabetes, and finally 18 participants out of 20 under the substitutive target signed their informed consent to participate.

The same difficulty was encountered in Sweden, with the engagement of people with disabilities. While having a target of 10 participants, it could only be possible to engage 2 participants. In this case, despite the efforts and the involvement of governmental agencies, local authorities and other organisations working with this target group, the recruitment procedure did not deliver on the results expected. In the end, only an organisation for people with neuro psychiatric disorders and a person with disability contacted directly by the Swedish partner accepted to be engaged in the co-creation phase.

As for policymakers, in one case their engagement proved to be challenging. In terms of participation, despite receiving several registrations to online co-creation sessions, the number of actual participants was lower than planned, meaning there were many dropouts in the end. To overcome this problem, corrective measures to the recruitment process have been applied to ensure better participation, for example using a personalised approach. Yet, this wasn't very effective either. In most cases, participants couldn't attend because of last minutes appointments, but confirmed their interest in the activity and the IDEAHL project itself.

Conversely, the consultation of the target groups “Low-income citizens” and “Migrants” in Germany exceeded the expectations, succeeding in involving 61 out of 50 participants. Yet, the high engagement rate of people with immigrant background, among whom many

belonged to the low-income societal layer, made it difficult to clearly distinguish between the participants belonging to one or the other target group. The two categories were overlapping at least in the groups contacted. Despite being impossible to separate the groups, the co-creation activities performed with this latter in Germany were either way approved, having the quantitative target been significantly overcome. The intersection between the two variables of low-income and immigrant background has been taken in consideration in the description of the related results in chapter 5. This is however an example of overlapping of many variables that could be interpreted as transversal to all the target groups, which casts light on the restrictive nature of the classification of target groups themselves. Such intersectional variables appear to be even more crucial when dealing with groups labelled as “vulnerable”.

4. METHODOLOGY

The T2.3 Activity of the IDEAHL Project focused on the implementation of co-creation sessions with the target groups assigned to each partner. Before starting the consultations, partners received all the information on how to plan and conduct the activities in the D2.1, which focused on providing methodological guidelines and advice on how to prevent and solve potential risks.

In the end, **140 co-creation sessions were carried out involving 1.434 participants from 19 target groups.**

This chapter will be divided into two parts: the first one will explain how data were collected, while the second will provide an analysis of the methodology used by partners to conduct the activities.

4.1 DATA COLLECTION

To collect information on (d)HL among European citizens, the D2.1 document provided a set of methodological questions that partners could choose to adapt according to the needs of specific groups.

The methodological questions acted as groundwork to structure the co-creation sessions and were an important tool to ensure methodological uniformity in data collection. They were grouped together in five main domains:



- **Introductory questions.** This set of questions was functional in familiarizing participants with the topic of (d)HL while, at the same time, investigating their everyday habits.
- **Specific domains of (d)HL strategy.** The aim of these questions was to stimulate a debate on areas of improvement and barriers of (d)HL with regards to the focal areas of the Strategy: Health Promotion, Disease Prevention and Treatment and Self Care.
- **Intervention on (d)HL.** This part of the methodological questions was dedicated to exploring participant's perception on (d)HL and to investigate the suggestions and improvements partners would like to be implemented in relation to the Strategy's main domains.
- **Ethics and Social Implications.** This part was included to receive feedback and points of view for the development of the IDEAHL WP4 Ethics and Inclusion Toolkit.
- **Specific questions.** If possible, partners had the chance to ask their target groups additional questions to deepen the investigation on (d)HL and its domains.

In order to collect the data derived from the co-creation sessions, ISRAA created a report template following the methodological questions and the suggested structure for the co-creation sessions as indicated in D2.1. The template was organized mixing closed- and open-ended questions and it provided instructions for its compiling. Structuring the template in this way has made possible not only to collect both quantitative and qualitative data on the contents of the co-creation's sessions, but also on the most effective methods for conducting and organising it according to every target group's specific needs.

The template was shared with partners and, once they reviewed and approved it, the final version was finalized. When the co-creation sessions started, partners were asked to fill in the report template after every session and to send it within a week from the date of the activities, to prevent loss of information with the passing of time.

The report template was divided in seven sections, each of them corresponding to a different moment of the session, providing partners the possibility to note findings, observations, obstacles, and points of strength emerged from the encounters with the target groups.



The next paragraph will briefly present the different parts of the template.

1. **Introduction.** In this section, partners were asked to provide information on the time and the place in which the activity took place. It was also dedicated to collect information on the achievement of the objectives presented in the D2.1.
2. **Participants Group.** This part of the report served the double function of both helping monitor the evolution of the co-creation sessions and providing information on the composition of participants' group. Partners were asked to indicate if they divided their target groups into smaller ones (meaning they would schedule more than two sessions to reach the expected number of participants). Moreover, they were asked to pinpoint through which channels they recruited the target group, and the most effective ones.
3. **Structure of the Activity.** The third section of the template focused on the methodological organization of the activities, asking partners to describe members of the team that held the meeting and their skills. Moreover, partners were asked to indicate the methods chosen for conducting the co-creation sessions and to reflect on their effectiveness.
4. **Findings.** Following the structure of the methodological questions proposed in D2.1, partners were asked to pinpoint information, feedback, points of view and ideas emerged from the meetings with their target groups.
5. **Social media and other online tools used for dissemination.** According to the guidelines of D2.1, partners were asked to disseminate information about every co-creation session. This section provided the possibility to indicate the tools used for it.
6. **Concluding remarks.** This section was created to provide partners the space to reflect on the overall experience, highlighting points of strength and barriers emerged.
7. **Annexes.** This last part was dedicated providing CEI with materials for dissemination purposes.

The co-creation phase lasted from M10 to M16 (February 2023 to July 2023). During this time ISRAA collected and analysed quantitative and qualitative data emerging from 119 reports drafted by partners. The data derived from the co-creation activities will be presented in the following Chapter.



4.2 OVERVIEW OF CO-CREATION METHODS ADOPTED

D2.1 set the operative framework for co-creation activities' implementation. The Deliverable set the structure of the sessions dividing them in different phases, each one functional to the achievement of specific objectives. Moreover, partners were provided not only with methodological questions but also with tools to organize the co-creation sessions with target groups. The presented methods were intended to facilitate partners in conducting the activities and were not mandatory. Partners were free to adopt any methods that suited the characteristics of their target group better. Furthermore, almost all the approaches suggested would suit both an online and an in-person session.

The co-creation activities were designed to encompass three distinct phases:

1. **Introduction.** The introductory moment took place at the beginning of the session, to serve two main scopes. The first one was to provide information to the participants regarding the IDEAHL Project and to carry out all the administrative procedures (e.g.: collecting signature papers, read and explain the privacy statement, etc.). The second goal was to get participants and team members to know each other in order to create a calm and relaxed environment in which participants could have felt free to express their opinions without being judged.
2. **Core co-creation phase.** This relates to the actual co-creation moment, in which participants were asked to discuss about specific domains and barriers of (d)HL. Partners were free to choose the most appropriate method, according to their knowledge of the target group, the timing, and the location of the event. The most important aspect of this phase was to stimulate conversations between participants.
3. **Evaluation phase.** The last phase was dedicated to summarising findings from the co-creation phase and to assess them with participants.

The following Paragraph will provide an overview of the methods used for the three phases, providing, when necessary, in-depth analysis of the techniques adopted for specific target groups.

The methodologies used in the meetings with Children and People with Disabilities will be discussed in a separate paragraph, given the characteristics of these specific groups.

4.2.1 Introduction

Scope of this phase was to create a friendly, relaxed, and calm environment, to favour the flow of ideas and points of view between participants. Only on a few occasions, in fact, the people involved already knew each other.

To achieve this objective, most partners opted for a **Standard Introduction**, a method that requires participants to introduce themselves by sharing their names and another optional information (age, profession, etc..).

However, some partners noted it was harder to engage some specific groups in the conversation on (d)HL and, for this reason, they opted for tailored approaches useful in introducing participants to the topic. The following table offers an overview of the methods used along with a description.

TARGET	METHODS	DESCRIPTION
Citizens With Low Income Low Digital Skills	Delphi Method	This method is structured to collect opinions on specific topics or research questions. The partners that used this method noted how it allowed a fluid flow of ideas during the meetings with participants in the co-creation activities.
	Spider Web	The aim of this method was to show the interconnectivity of the Internet. Group members were asked to stand up in a circle and say their names and a characteristic related to technology. Once finished, they had to attach a wool yarn to their wrist and leave the floor to another participant. At the end, participants resulted attached together in a "spider web".
	Electric current game	This method was chosen as icebreaker for the second co-creation sessions, when participants already knew each other. Partakers were asked to hold hands and pass to the person standing next to them the same electric shake (a combination of handshakes) they have received. This game was chosen to create a light atmosphere, to facilitate the following phases.
Caregivers	Pirate ship	Participants were shown an image of pirates on a ship and were asked to identify with one of the characters represented. This result in a positive bonding moment between participants, who shared common experiences.



	Name and Technology	Participants were asked to present themselves by saying their name and the first thing that came to their mind when thinking about technology. This method was chosen because it helped introduced both participants and the topic and helped coordinators understand participants' level of digital skills.
Women	Mood board	Group members were sitting together at a table and coordinators showed them photos of cats, each one representing a different mood. Participants were asked to choose a photo, introduce themselves and explain why that photo represented them.
	Name and Fact	This method was used during an online session. Partakers were asked to say their name, from where they were joining and to share a silly fact about themselves. This choice allowed to create a warm and relaxed atmosphere.
Older Adults	Spider Web	It was the same method used for citizens with low income, but, in this case, it was used not for introducing participants to each other, but to introduce the team's coordinators to the group.
	Name and Technology	Participants were asked to present themselves by saying their name and the first thing that came to their mind when thinking about technology. This method was chosen because it helped introduced both participants and the topic and helped coordinators understand participants' level of digital skills.

Table 2 - summary of co-creation methods.

4.2.2. Core co-creation phase

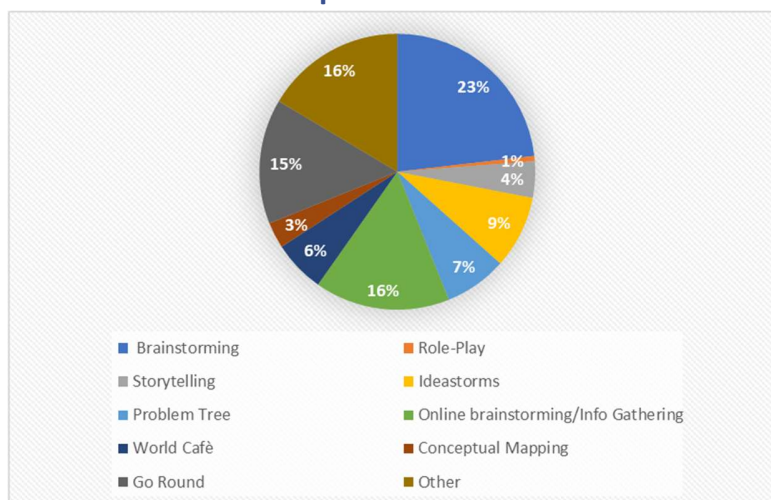


Image 1 – Percentage of methods used in the core co-creation phase.



Thanks to the reports partners submitted after every co-creation session, it was possible to identify the most used methods for conducting the core co-creation phase, as shown in Image 1. Partners used different approaches when choosing a methodology: some of them adopted always the same one, others preferred to change it between the first and the second meeting, while others opted for a mix of different methods during the sessions, in order to adapt the sessions to the needs and characteristics of the different target groups.

What emerges from this analysis is that partners favoured **brainstorming** and **online brainstorming/information gathering** as methods to collect information during the meetings with their target groups. Those methods were chosen because they were deemed effective, practical, and easy to adapt to different contexts, target groups and number of participants. In the brainstorming methods, in fact, participants are asked to answer questions posed by a coordinator and all points of view are considered valid and equally important.

When adopting these methodologies, partners dedicated some time introducing the topic and, to do so, they opted for **different approaches**. Some preferred a more **visual** approach, with the use of post-it notes that allowed to compare results of the discussion and rank them in the evaluation phase. To incite the discussion, other partners decided to start this phase by showing participants images of different tools such as smartphones, tablets, books, etc., and two empty cardboards that referred to (d)HL domains (health promotion, disease prevention, treatment and self-care) and asked them to put the items in the correspondent cardboard. In this way, participants had clearer vision on the topic and coordinators were able to encourage the conversation.

Other partners preferred to start the conversation by providing participants a simulated WhatsApp conversation between a doctor and a patient, related to (d)HL. To introduce the topics of the discussion, some partners preferred to submit **questionnaires** to the participants prior to the co-creation sessions, to let them get acquainted with the domains of (d)HL and their definitions. The results of the questionnaires were discussed at the beginning of the sessions. In one case, the answers from the questionnaire were used to create two personas: a relative and a healthcare worker who were thought to represent and simplify the position of participants on the topics of discussion. Their use was fundamental in inciting conversation.

Partners who held rounds of online co-creation decided to stimulate the discussion by using different online tools: Miro Boards, Jamboard, Kahoot, Mural and Mentimeter, that



were deemed equally effective and helpful in engaging participants and avoiding loss of interest for the activity through showing the results of the brainstorming activity in real time.

The **go-round method** was another effective tool used by partners to gather ideas during the co-creation sessions, chosen for its adaptability and for the possibility to encourage a discussion; participants, in fact, are asked to share their opinions on a topic by taking turns, without interrupting other partakers. In some cases, it was decided to adopt this method during online meetings, since it helped when problems with the internet connection occurred and offered participants equal possibilities to express their opinions. Moreover, it helped dealing with partakers that were shy and prevented overlapping of interventions and participants monopolizing the conversation.

Partners opted also for the following methods to engage their participants: Problem Tree (this methodology was slightly modified, due to time restraints), World Café, Ideastorms, Storytelling, Conceptual Mapping and Role play.

All the above-mentioned methods were listed in the D2.1 deliverable. Nevertheless, partners decided to adopt other methodologies for the core co-creation phase.

Some partners opted for the **focus group** technique, which was deemed the most effective in collecting information from the specific target groups it was applied to.

For other target groups, a **semi-structured interview** was chosen, since it enables to dive in the subject and let the coordinator adapt the questions to the specific level of (d)HL of every participant.

The last method used for the consultations was **Photovoice**. This methodology is used in community research and education, and it enables participants to express their concerns and ideas for the community they are living in. Partakers had the possibility to choose two different photos and were then asked to assign them to one of the following groups: disease prevention, health promotion and treatment. Finally, they were asked to explain why they selected that specific group. This method was effective when dealing with participants from other nationalities that do not speak fluently the language of the meeting's coordinators.

The overall evaluation of this phase was positive, and partners noted how the methods they chose were effective in conducting the co-creation meetings and in collecting feedback and point of views from the participants.

Nevertheless, some partners stated that the support of physical tools (such as brochure and written materials for consultation) would have helped participants have a better understanding of the topic.

To provide a complete overview of the methodologies used for implementing this phase, the Table 2 summarizes the results and shows which methods were used for every specific target group.

TARGET	Brainstorming	Other	Go Round	World Cafè	Online brainstorming/Info Gathering	Problem Tree	Ideastorms	Storytelling	Conceptual mapping	Role-Play
Caregivers	X	X	X	X	X	X	X	X	X	
Children	X	X								
Families					X	X				
Health Professionals	X		X	X	X	X	X			
Low Income/Low Digital Access Citizens	X	X		X	X	X	X			
Migrants	X		X					X		
Older People	X	X	X	X	X		X			X
People with disabilities		X								
Policy Makers	X		X					X	X	
Prisoners	X	X	X							
Students	X				X	X				
Women	X		X							

Table 3 – Recap of the methodology used for each target group.

For more detailed information regarding the co-creation sessions, please contact: dgcuidados@asturias.org; martamaria.pisanogonzalez@asturias.org

4.2.3 Evaluation phase

According to D2.1 deliverable, the last part of the meetings should have been dedicated to summarising, assessing, and evaluating what emerged during the previous phase. To do so, different methodologies were suggested, and partner adopted the following ones: two dimensions axis, predefined numbers of stickers/dots, ranking and plus/minus implications. These methods were chosen for their high visual impact, allowing

participants to instantly understand which were the most relevant conclusions. Nevertheless, in some cases it was necessary to use different evaluating systems than those already suggested.

A partner opted for a **conceptual tree**, where the most important findings were put on the roots and in the main branches, while those deemed less central were positioned on secondary branches or leaves.

In the co-creation sessions with students and health professionals (professionals and lecturers) an adapted version of the **BIKVA method** was used. Theoretically, this method is based on the citizens' perspective of quality and effectiveness of the services and when applying this methodology, the opinions are passed on to different level of organization. In the co-creation sessions, the BIKVA method was adopted as a circular form of evaluation, in which the results of the activities with students were submitted to teachers, the teachers' outcomes were presented to professionals and their conclusions were then discussed by students.

From the reports, it emerged that some partner did not have the chance to conduct the evaluation phase, due to the lack of time since the previous phase took longer than expected. In other cases, to avoid loss of interest in the activity and keep the attention of participants high, it was decided to only briefly wrap up orally the results of the core co-creation phase and asked participants to validate them.

4.2.4 Children and People with disabilities

The co-creation sessions with these two target groups were structured maintaining the three phases suggested in D2.1, but they were adapted to better suit the characteristics of these groups.

To better engage **children** in the consultation process, it was decided to make the co-creation activity a playful moment and a gymkhana with three stations was organized. Children were divided into six groups, and, in every station, they had to take part in different activities (answering questions, brainstorming, etc.) to receive a piece of a puzzle. At the end, they united all the pieces and were able to create the word "IDEAHL".

The method proved to be effective, since children provided feedback and points of view, but to avoid losing interest, coordinators decided to use a quantitative method for the evaluation phase, counting the number of children supporting the same response.



Due to difficulties related to the recruitment and to the need to provide a safe consultation environment, it was decided to consult **people with disabilities** with individual interviews. The questions used were the ones provided by D2.1 and they were reviewed with personnel from the local municipality working with people with cognitive disabilities, to fit the target group's educational and pedagogical needs.

4.3 FEEDBACK FROM THE SATISFACTION QUESTIONNAIRE

To gauge the participants' enjoyment and satisfaction with the co-creation process in which they were involved, a questionnaire was prepared. The administration of the questionnaire was **not made compulsory**, so each partner chose whether to propose it to their target groups. The questionnaire could be submitted either in digital form, via EUSurvey mean, or in paper form according to the peculiarities of the target group. In this last case, the questionnaires were digitised by the partners.

Structure of the questionnaire

The questionnaire consisted of **two macro sections**, divided into sub-sections:

1. Overall evaluation: here participants were asked to express their level of satisfaction with the encounter and with the command of the treated s

1. **Overall evaluation**: here participants were asked to express their level of satisfaction with the encounter and with the command of the treated subject.

2. **Detailed evaluation**: here participants were asked to express their point of view on the aspects listed below and each aspect was investigated through statements taking into consideration different elements:

- **Pre-event organization:**
 - I received the invitation in good time.
 - The invitation offered a clear picture of what the event is about.
- **Objectives:**
 - The co-creation session met its objective(s).
 - The session corresponded to your expectations.



- **Quality of the event:**
 - I am satisfied with the quality of moderation.
 - I am satisfied with the structure and design of the session.
 - I am satisfied with the level of interaction among participants.
 - I am satisfied with the quality of the emerged co-created concepts.
- **Logistical aspects:**
 - I am satisfied with the organisation and support of the event.
 - I am satisfied with the quality of methods, tools and materials used.

A final optional section was reserved to **Comments** through the following open-ended questions:

- What did you most appreciate during the session?
- What did you least appreciate during the session?

Participants were asked to make their judgment on every statement by choosing from a **rating scale of 1 to 5** organised as follows: 1 Strongly disagree; 2 Disagree; 3 Neither agree nor disagree; 4 Agree; 5 Strongly agree. A total of **117 questionnaires** were collected. Of course, this number cannot be considered representative given the total number of individuals reached by the co-creation, which amounts to 1434. Nevertheless, the feedback obtained is reported for completeness.

Results of the questionnaire

Concerning the **overall evaluation**, 59% of participants declared to strongly agree to the statement "I am satisfied with the co-creation session", and 38% declared to agree.

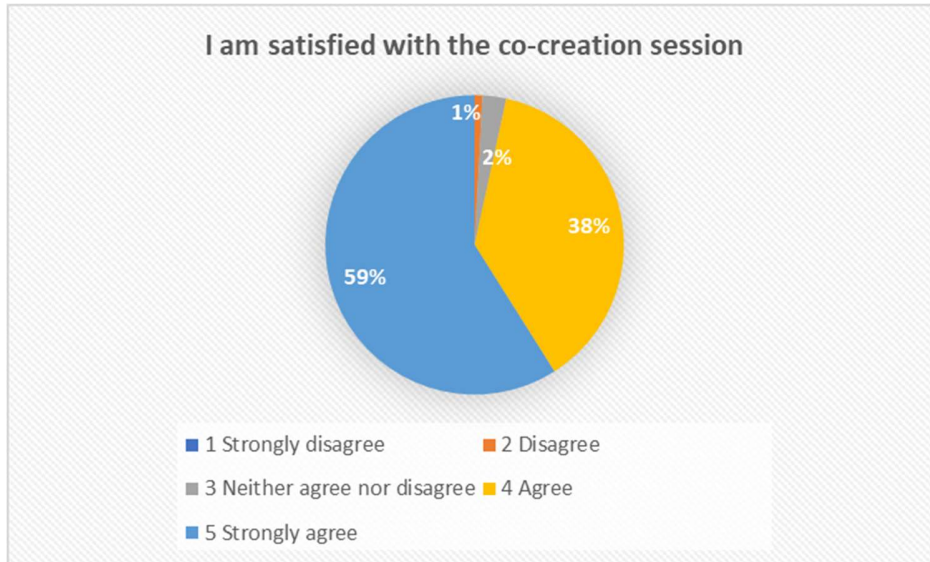


Image 2 – Percentage of satisfaction with the co-creation session.

A total of 38% strongly agree with having reached a good command of the subject after the co-creation session, while 50% agreed.

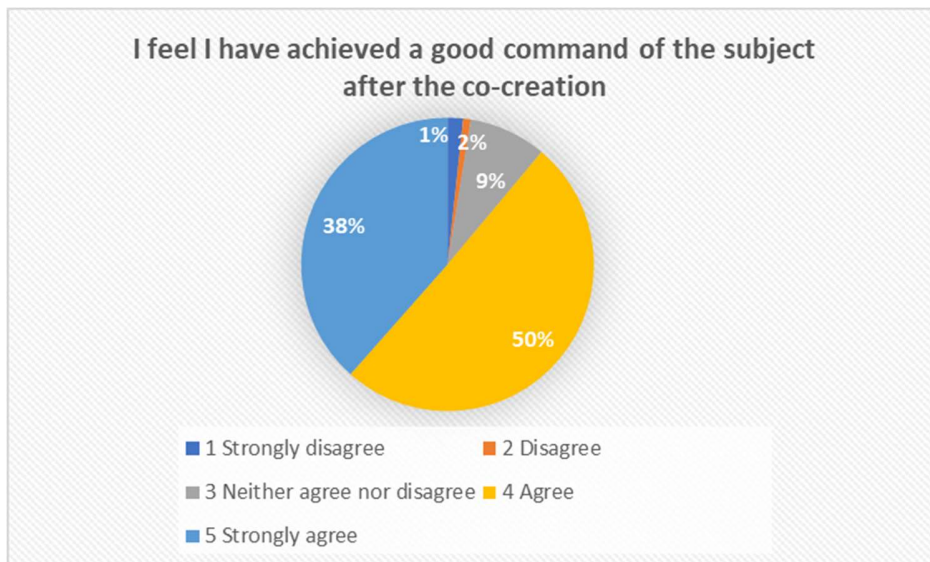


Image 3 – Percentage of satisfaction with the command achieved on the subject after the co-creation.



In the frame of the **detailed evaluation**, the feedback on the **pre-event organization** was generally good since 63% strongly agreed and 25% agreed in having received timely invitation.

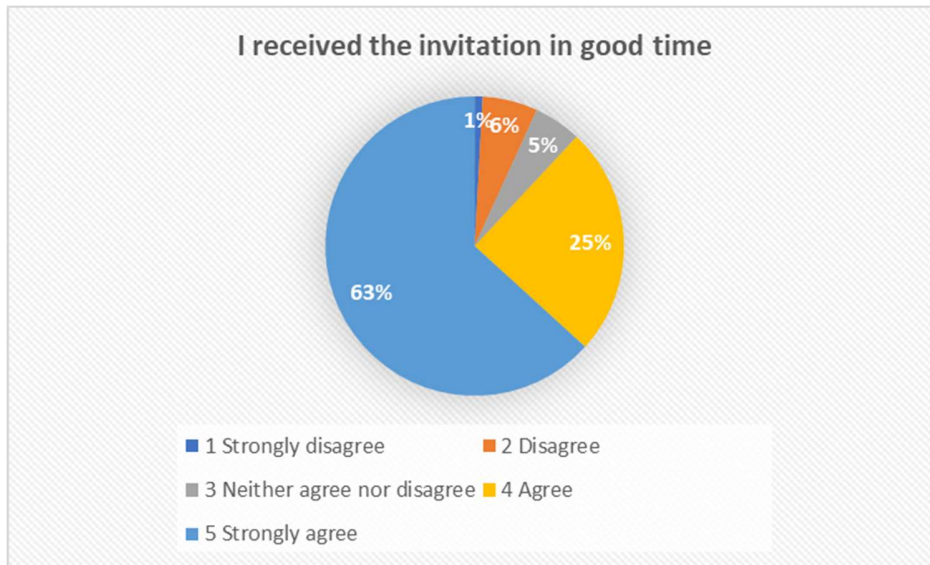


Image 4 – Percentage of satisfaction with the timeliness of receipt of the invitation.

Moreover, 55% strongly agreed with the fact that the information presented in the invitation was exhaustive and 29% agreed.

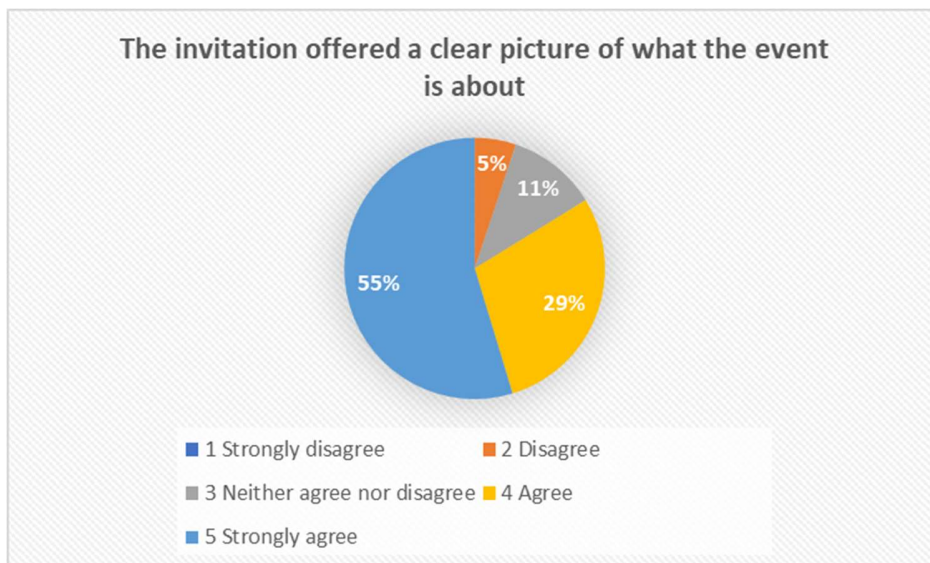


Image 5 – Percentage of satisfaction with the exhaustiveness of the information provided in the invitation.



When it comes to the **objectives**, 47% declared to strongly agree with the statement "The co-creation session met its objective(s)", while 41% agreed.

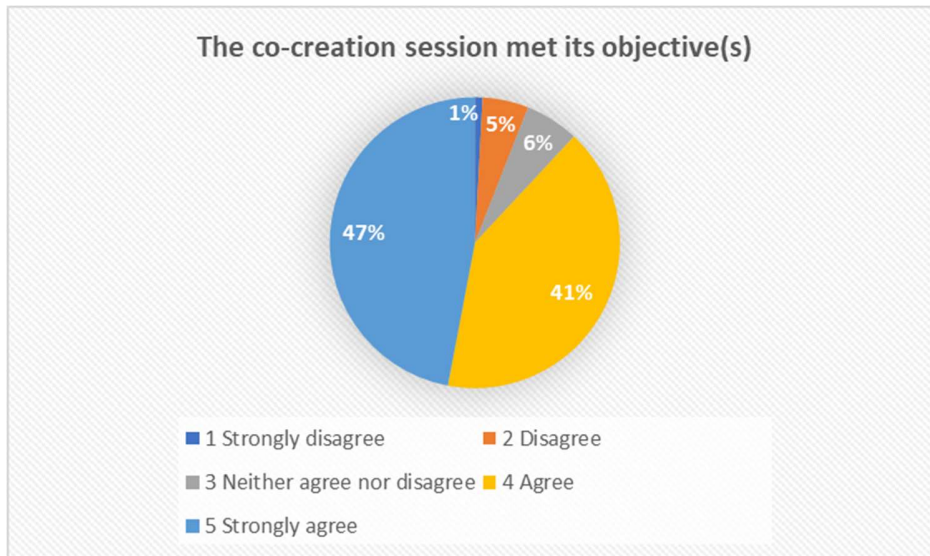


Image 6 – Percentage of satisfaction with the achievement of co-creation objectives.

Moreover, 50% strongly agreed with the fact that the session corresponded to their expectation and 36% agree.

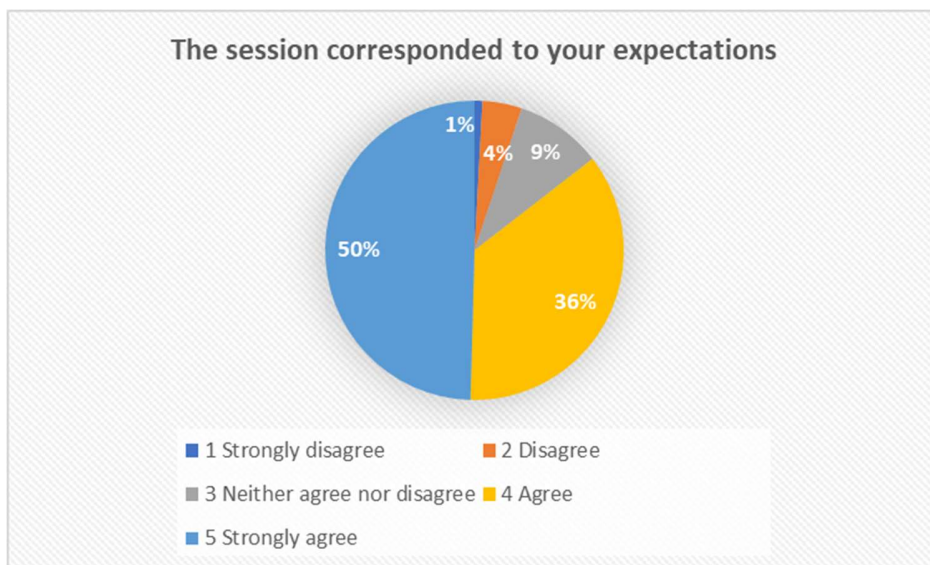


Image 7 – Percentage of satisfaction with the fact that the session corresponded to the expectation.



Regarding the **quality of the event**, very favourable evaluations were expressed by participants, as 64% strongly agreed with the statement "I am satisfied with the **quality of moderation**" and 23% say to agree.

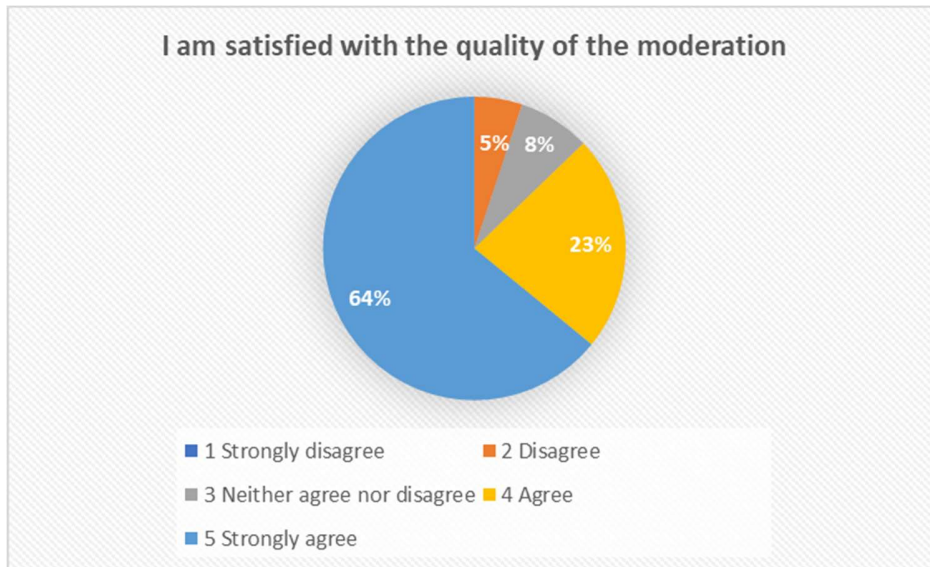


Image 8 – Percentage of satisfaction with the quality of the moderation.

The **structure and design of the sessions** received positive feedback as well, with 61% of participants affirming to strongly agree and 25% agreeing to be satisfied with the structure and design of the session.

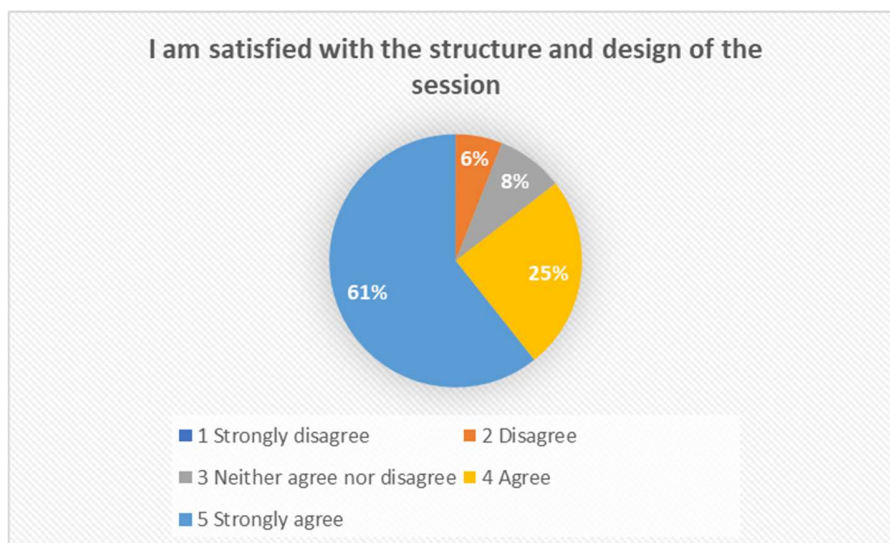


Image 9 – Percentage of satisfaction with the structure and the quality of the session.



The **level of interaction among participants** was positively judged. Half of the participants (50%) strongly agreed and 33% agreed with the statement "I am satisfied with the level of interaction among participants".

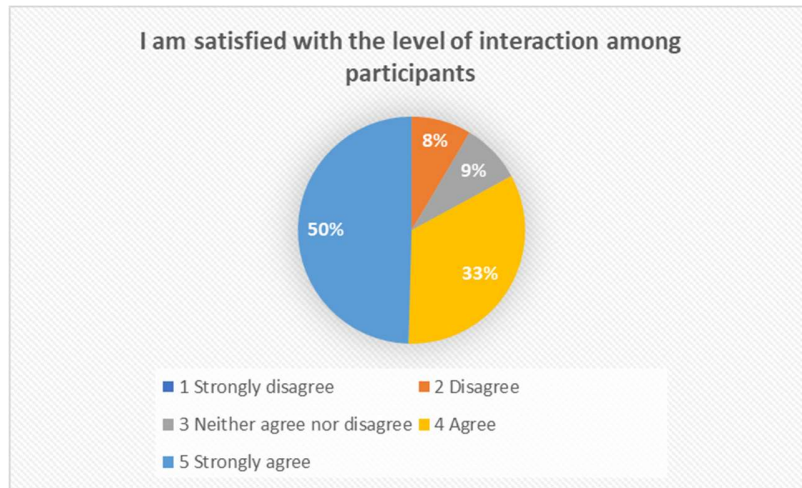


Image 10 – Percentage of satisfaction with the level of interaction among participants.

Participants were generally highly satisfied with the **quality of the emerged co-created concepts**, where 52% strongly agreed and 35% agreed with the statement "I am satisfied with the quality of the emerged co-created concepts".

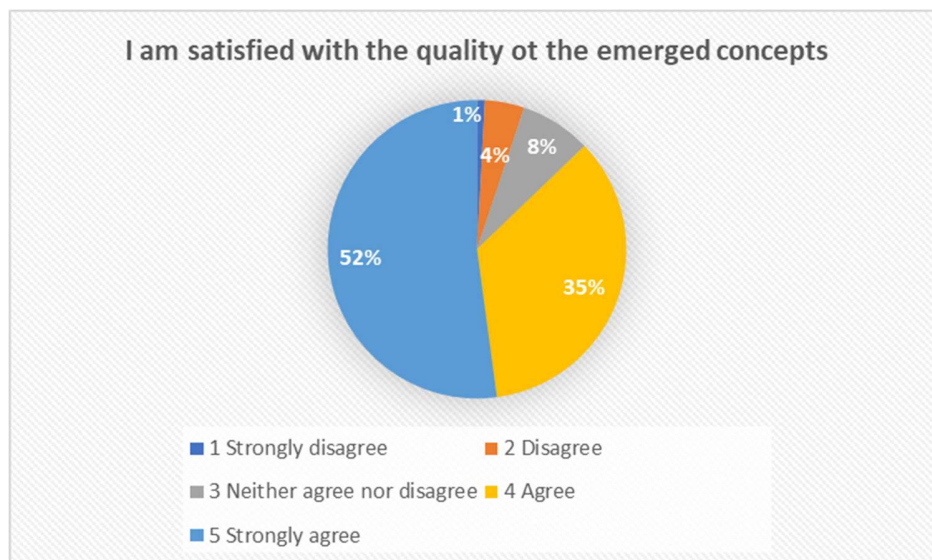


Image 11 – Percentage of satisfaction with the quality of the emerged co-created concepts.



Logistical aspects were favourably regarded: 66% strongly agreed with being satisfied with the **organisation and support of the event** and 20% agreed.

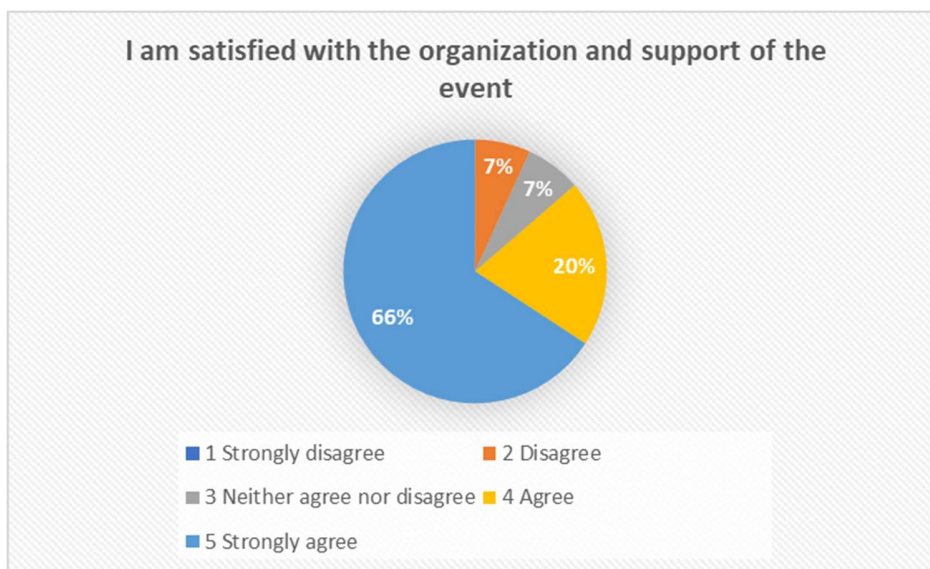


Image 12 – Percentage of satisfaction with the organization and support of the event.

The **quality of methods, tools, and materials used** had a good success: 60% strongly agreed and 26% agreed with the statement "I am satisfied with the quality of methods, tools and materials".

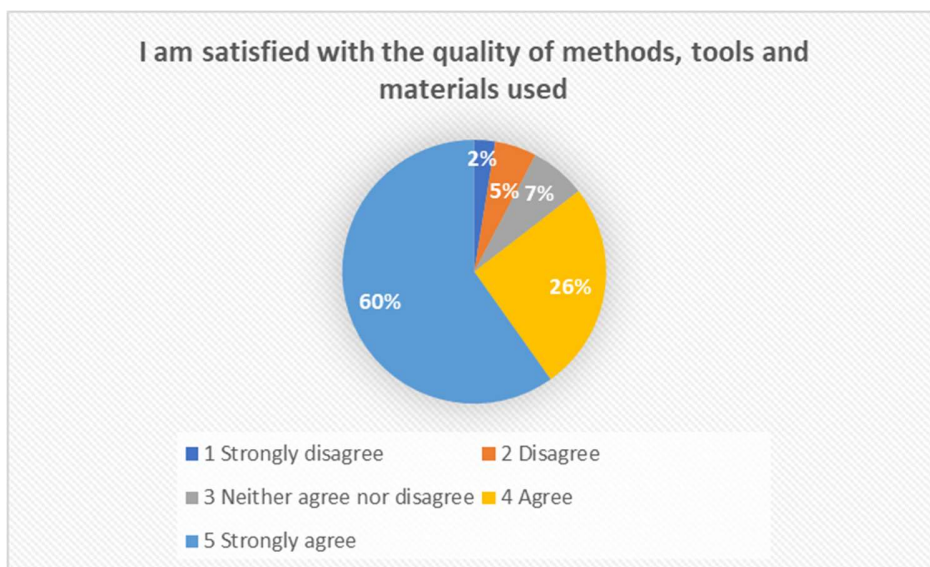


Image 13 – Percentage of satisfaction with the quality of the methods, tools and materials used.



Finally, in the sections dedicated to **Comments**, the possibility to actively participate in the activity, share and interact with others, the opportunity to express personal opinion, the professionalism of the facilitators and moderators, and the clarity of the content presented and discussed were indicated by participants as extremely appreciated elements. No elements were less or not at all appreciated. However, some pointed out that it would have been good to have had more time to deal with certain topics in greater depth. Others expressed regret for the conclusion of the encounters.

The data collected demonstrate how the co-creation-inspired approach adopted and its management and implementation by partners was appreciated in all its aspects, from organisational and logistical ones to those related to the quality of content, methods and conduction. Specifically, the answers to the open-ended questions in the section dedicated to comments suggest that the participatory components, central to the co-creative process, has a positive value for citizens, particularly insofar as it enables to make their voices heard and share their experiences and opinions among peers and with professionals.

Nonetheless, it is important to bear in mind that this is the result from the eight percent of the participants who did answer the questionnaire, therefore the information provided here is representative exclusively of this restricted sample.

5. RESULTS

As anticipated in chapter 3, the following chapter presents the results gathered from 140 co-creation activities held with 19 different target groups in the period stretching from February to August 2023. In order to provide a clearer and more comprehensive overview, more specific target groups that can be referred to a more general target group have been aggregated. For example, the targets of “Young women” and “Pregnant women” have been included in a more general target group labelled as “Women”; likewise, “Formal Caregivers” and “Informal Caregivers” are both comprised in the broader target group of “Caregivers”. Each target-specific section will make clear whenever the inputs gathered relate to one subgroup or to another.

The ideas collected from such co-creation sessions have been hereby accurately reported, in the attempt to offer an overview of the participants’ perceptions, common feelings and shared ideas regarding digitalisation and (d)HL. This means, for example,



that some of the possible interventions suggested by the participants might not be necessarily technically feasible, or that some of the barriers identified might not be representative of the whole target group, of a whole country or of the entire EU. In this sense, no literature analysis was conducted to corroborate participants' ideas, given that this would have exceeded the scope of the present deliverable and that it could have potentially altered participants' ideas themselves. Throughout the chapter, co-creation sessions are referred to as co-creation activities as well; both terms should be regarded as synonyms.

The structure of the section reflects the order of the research questions posed in the co-creation phase, going from a more personal and general point of view to a wider societal perspective.

In each subsection (from sect. 5.1 to 5.13), there is a first introduction around the number of participants reached for the specific target group, and an overview of the trends emerged in relation to the introductory questions investigating their habits and skills in terms of digital health and digital health literacy.

Afterwards, the individual and social barriers to (d)HL are presented, which is followed by another subsection dedicated to the areas of improvement and possible interventions identified and suggested by each target group.

At the end of this target-specific analysis, results gathered from the research questions on ethics and social implications of (d)HL (sect. 5.14) are presented in a comprehensive way, without reposing the division per target group, given the transversal nature of both the questions and the answers received, which proved to transcend any distinction.

5.1 POLICY MAKERS

At a macro level, a total of 37 national and international policy makers were involved in IDEAHL co-creation phase, to gather their insights into the gaps, priorities, and areas of improvement to deal with in the field of health literacy and digital health literacy. This aggregated target group also includes the Members of the Women's Health Task Force, since it is a task force of policy makers established in 2019 within the Irish Department of Health with the purpose to improve women's health outcomes and experiences of healthcare. Co-creation activities with policy makers were held not only in Ireland, but

also in Spain, Italy, and Sweden, succeeding in reaching out to both national, European (German and Belgian), and international policy makers.

5.1.1 Analysis of social and personal barriers related to (d)HL domains

When enquired around the general habits in the use of digital tools for health, they affirmed that, since the outburst of the COVID-19 pandemic, there has been an upward trend in the use of Internet to search for health-related content, which is a consequence of the difficulty to meet personally with one's own general practitioner (GP) at that time. Yet, according to policy makers' view, this trend has survived the pandemic, as a symptom of the lack of doctors, long waiting lists and the increased cost of medical visits. The greater reliance on information retrieved digitally comes with a high price, that of running up against misinformation, since, according to the participants' opinion, many people, especially the most socioeconomically deprived, do not know how to distinguish between reliable and unreliable sources. According to the policy makers consulted, social media remain marginal compared to other search engines and sources, but the high exposure of young people to the former, especially Twitter, casts light on the importance for healthcare professionals to consider the role of different communication channels to effectively reach the target they are aiming for. Parallel to this, policymakers also confirmed that there is a greater effort from healthcare professionals to recommend patients' the best and more reliable sources to consult online. At a higher level, the Organisation for the review of Care and Health Apps (ORCHA) was mentioned as an example of enabler in this sense.³ ORCHA is a technology provider funded by NHS professionals in the UK with the aim to enhance people's access to digital health in a safe way, by assessing and reviewing care and health apps. It operates now in twenty countries all over the world. At the same time, the policy makers involved underlined that major efforts should be made by public institutions to give more visibility to health-related institutional and certified websites and platforms online to the detriment of other more insecure and unreliable sources. Albeit this often represents an ethical as well as economic challenge to such public institutions, given the increasing costs to keep the visibility higher for certain sources compared to others.

Regarding the discussion around the specific domains of (d)HL, several gaps and barriers to the successful implementation and adoption of digital health solutions were pointed out by the policy makers. Such barriers are presented below divided in three main categories:

³ <https://orchahealth.com/>.



societal, legal/administrative, and healthcare-related, following the multilevel perspective adopted on them by the participants, while already hinting at the key actors that should be involved around the topic of (d)HL, at a broader level.

- **Societal barriers**

A first major and determining setback for the successful adoption of digital health solutions was identified with the **lack of digital mindset** among the general population and the consequential **distrust** around the solutions proposed. This causes the acceptability of the digitalisation process in the healthcare sector to decline drastically whenever innovations are presented to the citizens, who do not completely understand them while they prefer keeping the old system, even if inefficient. This happens for example in case of too complicated access procedures to enter a digital platform or health app. This also happens because there is a **general lack of involvement of key stakeholders** in the society in the co-design of digital health solutions, which often produces innovation that do not actually respond to the actual needs of citizens. Another key element that discourages citizens to use digital tools for health-related searches is the **difficulty in finding the right piece of information online**, let alone the **massive amount of content**, which often do not allow the user to distinguish between fraudulent and safe websites, and between reliable and unreliable information. Besides this, the information is often presented with a very **technical language**, if not in English terms, which is problematic in those countries where English is not the native tongue, and where people with lower educational level might not be able to understand what they are reading. Connected to this, a relevant point was made in relation to the level of people's autonomy to look up for certain health-related contents online on their own. Such level of autonomy might be in some cases limited depending on **cultural differences**. In some cases, digital tools can turn into an instrument of power and control, especially in contexts of patriarchy, where it is the man who has the control over those tools in the family. Yet, the use of Internet and the access to digital tools can also be deemed as a facilitator for those that wish to gather knowledge on health issues that might be seen as taboos in certain cultures. The access to digital tools seems to be undermined by **economic barriers**, in particular for low-income or poor layers of the society, while the concept of (d)HL itself seems to lack **marketability**, and therefore be unable to unlock its potential.



- **Legal / Administrative barriers**

Low digitalisation levels in general were highlighted as one of the main gaps that should be tackled in our societies. When it comes to digitalise or bring any sort of innovation in the public health sector, there is always a fierce resistance to change from within the system. This is also due to its inherent **emergency-like nature**, which makes it naturally obliged to often deliver in-person services to the people. In many cases such services appear to be difficult to digitalise, contrarily to what happens in other sectors where many or all services can be delivered completely online (i.e., banking). This often pushes the system to opt for the maintenance of the status quo or for the adoption of partial changes that ultimately results in inefficient attempts that are not understood by citizens and that end up nurturing the feeling of distrust among these latter. Contributing to the low levels of digitalisation are also the **scarce (d)HL skills among public officers**, which has a negative fallout on the services that they can offer to the population, and the **poor quality of the technological infrastructure** placed throughout the national territories. As a consequence, many citizens are left digitally excluded, especially in rural areas. As far as decision-making processes are concerned, **(d)HL is far less prioritised** than digital health **in political agenda**, both of which in general lack sufficient dedicated funding as well, given the political confrontations around budget allocation. This hinders the opportunity to take far-sighted and carefully planned decisions around (d)HL and digital health, which actually aim at creating impact. The failure around such measures on (d)HL or digital health are perceived as intrinsic to the **lack of normative standards**, which makes it easier to integrate different layers of norms in a single workable framework. Last but not least, there is a widespread **lack of skills around cybersecurity**, which is considered a major gap, given the increased exposure to related risks, and poor control around the profiling of online users performed by algorithms, which risk acting as a sounding board for hoaxes.

- **Healthcare-related barriers**

When considering the healthcare sector and the professionals working within it, policy makers identified as a major barrier the **lack of GPs** and the **massive workload** healthcare workers are bearing. This is a problem in terms of the quality of the service provided to citizens, who find it difficult to book an in-presence visit with a doctor. Yet, regarding (d)HL, professionals in this field often present **varying levels of autonomy in the use of digital tools**, which casts lights on the need to create **standards for their**

training on (d)HL. However, this cannot be done without an **adequate allocation of resources**. Connected to the low level of digitalisation mentioned in the legal / administrative barriers, there is also the **poor integration among digital health services**, which nurture the fragmentation of the whole system. When implementing such services, a **multisectoral approach to vulnerable people** is also lacking, hindering the creation of services that are inclusive for all. To this end, there should be more **interdisciplinary collaborations** among experts and professionals, so as to create more valid and solid solutions.

5.1.2 Analysis of (d)HL areas of improvement and institutional intervention

In consideration of the gaps and barriers highlighted during the co-creation, policymakers have identified a number of areas of improvement and related actions that would need to be taken to improve digital health outcomes and citizens' (d)HL. The areas where significant improvements should be brought about are the following: decision-making, accessibility, communication, collaboration and training, and the healthcare sector.

As far as the general approach to decision-making is concerned, the lessons learnt from the Covid-19 pandemic should be better integrated in the post-pandemic era, that is, while luckily the emergency has ended, the efficiency and efficacy of the **agile and rapid decisions** taken in that period should not be completely lost with the return to normality. Also, decision-making processes at the macro and meso level should **mandate the development of interoperable solutions** and increase the focus on the importance of **assessing the maturity level of existing digital health solutions**, so as to avoid implementing those that might be inefficient and time-consuming. Following this, as far as **large-scale pilot projects** of digital health technologies are concerned, greater focus should be placed on the need to seriously monitor their outcomes, by committing to keep **collecting evidence on their impact in the long run**. In the attempt to reach the most vulnerable and most excluded people, policy makers should develop *ad hoc* **guidelines for marginalised communities** that would enable healthcare workers and local authorities to have a better understanding of their conditions. Yet, while it is important that at the institutional level the advantages of digitalising the health sector be promoted, it is equally important to embrace a more critical appraisal on the digitalisation process itself and on its consequences for the most vulnerable. The development of innovative digital health approaches and solutions should be accompanied by the awareness that these won't be necessarily and intrinsically inclusive for all, given the extreme heterogeneity of



the needs to respond to. There is still the **need for analogue solutions** to be developed, as back-up options to be adopted in all those situations where there is a high risk that the digitalisation is going to fail.

Concerning accessibility, more needs to be done to ensure that digital health solutions are inclusive for all. In this sense, **online interfaces** should be simplified, made more user-friendly and readable. They should make use of the right format and include accessibility options for diverse types of impairments that the user might suffer from. In general, the ideation and development of digital health innovations should fully **embrace universal design principles**.

Communication should focus on **enhancing the positive aspects** and advantages of digital health, with the attempt to create acceptability among the citizens. Yet, more effort should be taken at local and regional level on the quality and inclusiveness of the messages conveyed. In this regard, public administration offices should **hire more qualified staff** in the field of communication, which would be able to keep a **direct control on the information** disseminated and to **adapt it to the various targets** they want to reach out to. In terms of quality of the message, public officers should make provisions and informative materials more user-friendly. This means that it is desirable to disseminate more readable and understandable adaptations of official policy documents and statements. Also, relevant information should be communicated in a **one-stop-shop platform** rather than in multiple and confusing websites and portals that do not help the citizen. This happens to be particularly critical when it comes to disease prevention. In this case, having a direct public control on the communication channels allows to have control on the quality of the message, on its visibility, and on possible sources of intellectual conflict. With the regard to accessibility, official communications from public authorities should be made available in different languages, along with available **translation tools**, to reach out to a wider audience and decrease the exclusion of marginalised communities.

In order to reinforce the communication, exchanges and collaborations among different stakeholders in the field of (d)HL, it was suggested that **living labs for (d)HL** should be run and implemented at a regional level, while enabling the efficiency and efficacy of different digital health technologies, allowing for the continuous improvement and update of related provisions issued by local authorities. Furthermore, the **involvement of stakeholders** from the very beginning of the design process of technologies should be made more diffused and inclusive, while other **occasions** for them **to transfer**

knowledge and exchange experience and ideas should be provided in general consultation events or also more specific ones, such as hackathons or quadruple helix-driven events aimed at informing decision-making processes, especially on disease prevention. At a micro level, there should be a greater effort to create spaces and **opportunities for patients and their carers to meet and share** experiences, concerns, and solutions, in the attempt to enhance self-care and solidarity.

In the context of the healthcare sector, it would be useful to establish specific **helpdesks** for the citizenship, such as a **phone line**, through which users can ask questions and get answers directly from a dedicated healthcare worker. The latter should recognise the time made at disposal of the patients and their families to guide them through the use of digital health services. This has to do with the need to create a **“human” safety net** around digital health technologies to make them workable for the widest audience possible, a key success factor for any innovation in this field. Regarding training, (d)HL should be integrated in **university curricula**, so as to educate young citizens to it and promote a higher level of acceptability towards digital health in the society.

Following the inputs described so far, policy makers gave their view on how the IDEAHL **(d)HL Strategy** should be developed. They underlined the importance for it to be evidence-based, inclusive and accessible for all, to place focus on the training of healthcare professionals, and on the need for analogue solutions as well. It should adopt an integrated approach to solutions and embrace an inclusive philosophy for all its potential targets, by ensuring cross-cultural adaptability and validation. The strategy should emphasise citizens’ needs, the importance of capacity-building in the healthcare sector, the need to improve technological infrastructures, and the prioritisation of (d)HL in political agendas. As a quality check, stakeholders from various sectors should be called to provide feedback on the strategy understandability and effectiveness.



Image 14 – co-creation sessions with Policy Makers.

5.2 DIGITAL LITERACY AND DIGITAL HEALTH EXPERTS

During the co-creation phase, a total of 39 digital health and (d)HL experts were involved in Belgium and Spain. Among the experts, there were university professors, practitioners working on projects in digital health, med-tech companies' representatives, and patient groups representatives. Mostly, they were invited to participate in the co-creation via the ECHAlliance and the IDEAHL network of champions. The experts came from different countries and regions in the WHO European Union. The specific areas of expertise of the participants related to (d)HL included Health Psychology, Pharmacy, Gerontology, policy and effectiveness related to health, women in global health, health technology assessment, and digital health and social affairs. This target group was asked to share ideas on the barriers, areas of improvement and possible interventions on (d)HL.

5.2.1 Analysis of social and personal barriers related to (d)HL domains

The consultation of experts on barriers towards (d)HL gave interesting insights on the gaps to be filled in, often overlapping with the feedback provided by policy makers. As in the case of the latter, the conversation with the experts followed a multilevel perspective, making it possible to maintain the same macro categories of barriers identified with policy makers.

- **Societal barriers**

Experts affirmed that one first significant barrier is connected to the **skills shortage** among healthcare professionals and the population in general. This is also nurtured by the **scarce retention of specialised workforce** in the healthcare sector in the national territory of many European countries, due to, among other reasons, emigration. As a result, the “in-house” development and introduction of innovation is hindered by this process. Furthermore, **conditions of vulnerability and disability** are scarcely considered in the design and development of digital technologies, which causes people in these vulnerable situations to be excluded from digital health services. This is also a consequence of the **lacking support** by healthcare providers and public officials to the citizenship on the management of digital health. The lack of support and the diffused risk of digital exclusion tend to place more **emphasis on the unsuccessful experiences** and the disadvantages brought along by the digitalisation of the healthcare sector, obstructing the creation of acceptability of such process in the population and nurturing a **feeling of distrust** towards the healthcare system. In this sense, the (d)HL experts maintained that

several healthcare organisations seem to have a **negative organisational culture**, inclined to refuse change and innovation. Yet it is not the organisations alone that need to bring about change: they should do so in a **collaborative framework**, where all stakeholders, including organisations, are consulted on the solutions; a piece of the puzzle that is too often missing at present.

- **Legal / administrative barriers**

According to the experts, even if all EU countries are expected to follow GDPR, **privacy concerns and lack of understanding** in the general public of how data management and storage practices work represent one of the main challenges to tackle. Another factor is connected to the **lack of integration and interoperability among healthcare systems**, not only among countries, but also among regions in a same country. This complicates the **procedures** for users to access to services, especially when in a disadvantaged condition, and fuels distrust towards the system. Distrust is also felt when it comes to **digital medical documentation and related authentication**, which once again is not standardised but differ from country to country. On the one hand, there is a general feeling that public healthcare initiatives are not working also because there is **little evidence** that can inform them. On the other, the data gathered by digital health tools that are perceived as useful and effective by users, such as smart watches, mental healthcare apps, etc., are not ruled or do not respond to any official **certification schemes** that validate such data and allow them to be integrated into the medical system. In terms of budget needs, the **resources** allocated in favour of digital health and (d)HL are insufficient, with **public and private enterprises** presenting very different outcomes in relation to efficacy and efficiency of innovative solutions. There is a general **lack of quality technological infrastructure and lack of public free broadband and Internet points**, which widen differences in accessing digital services. Finally, experts emphasised the relevance of significantly increasing **investments in research projects**, which are currently very low.

- **Healthcare-related barriers**

Complicated procedures for end-users are often produced by **differences in personal identification systems**, which makes it difficult for patients to directly consult their personal medical information and documentation in one single place. Still, many existing digital health services do not present a **user-friendly interface**, making them not accessible for all. In the healthcare sector, **communication** on digital health and literacy



is not provided in an efficient way and often fails at reaching the target groups. A major challenge and gap are to be found in **training**: there are few training opportunities, that more importantly aren't personalised. According to the experts, (d)HL is currently not extensively integrated in university curricula, while it should, and, similarly, health literacy is not commonly diffused in all educational paths. Of course, this affirmation is general and may not take into account differences among EU countries. The responsibility to inform the public on digital health is mostly left to healthcare professionals, who however are generally overloaded in their work environment and aren't recognised the **time** to educate patients to (d)HL.

5.2.2 Analysis of (d)HL areas of improvement and institutional intervention

Following the inputs provided on the gaps and barriers, digital health and (d)HL experts have suggested several areas of improvement and related possible interventions.

Concerning the healthcare domain, they recommended that **physical helpdesks** be established and opened to the public, particularly in favour of people with low digital skills or low access to digital tools and services. In addition, they suggested to create **Health Literacy (HL) programs at school** and integrate them with informal learning opportunities, such as **peer-to-peer networks**. In terms of primary and public healthcare initiatives, these should be more carefully thought and organised based on evidence and renowned success factors.

At the societal level, **stakeholders**, including different healthcare organisations, should be **more frequently consulted**, and called to collaborate on the design, implementation, and validation of digital health solutions. While healthcare providers and users should be given informal spaces and platforms where to share experiences, knowledge and feel supported. This could be done by **reinforcing patients' organisations and community networks**.

As far as technologies are concerned, more **open-source software** should be provided to the public, while increasing the adoption of **user-friendly adaptations** and **universal design principles**. This should come with relevant reforms and adaptations at the legal level, for instance by developing standardised certification schemes for online health-related apps and tools.

The EU (d)HL Strategy should therefore take into account these suggestions, and more importantly adopt a cross-cultural validation approach, able to ensure that the necessary adaptations to the contextual differences among countries can be made in a positive way. The Strategy should also contain guidelines for its implementation, emphasise the need for stakeholders' involvement and collaboration, while keeping a focus on health inequalities.



Image 15 – co-creation sessions with Digital Literacy and Digital Health Experts

5.3 HEALTH PROFESSIONALS

This Chapter will offer an insight on the results emerged from the co-creation sessions attended by health professionals, social workers, health practitioners and pharmacists, with a total number of 172 participants from Spain, Ireland, and Finland.

5.3.1 Analysis of social and personal barriers related to (d)HL domains

The use of Internet is a daily matter for this target group, and it serves two purposes: finding information for professional use and communicating with patients/clients (mostly through e-mails).

Thanks to their scholar education, participants know where to look for information, how to recognize reliable sources and easily understand the terms and the language used. To solve their doubts, they rely on different tools:

- Websites such as Mayo Clinic, PubMed, Science Direct.
- Government and health insurance webpages.
- Mobile applications (like, for example, the health insurance app Kanta in Finland).
- Platforms of professional institutions.
- Forum and blogs.



The groups noted that people that do not possess their technical knowledge, face more difficulties identifying reliable source of information and often turn to **social media**, which usage divided participants into two groups with opposite views. One group stated that they would never use social media as a source of information since posts and videos contain data and facts that are often contradictory and scarcely controlled. This group is not completely against them, and, in fact, it thinks that institutions should have a more active presence on social platforms. On the other hand, the second group, showed a more positive attitude towards them, with health professionals researching online profiles and suggesting them to their patients/clients when needing information.

Despite having high competences in using technological devices and a high-level education, members of this target group still face (d)HL related barriers in their job.

The **relationship with their patients/clients** is one of them and it is structured on different layers. On a first level, health professionals noted how a lot of people still do not have access to technological devices or Internet connections and the lack of knowledge to use basic online tools such as e-mails, compromises their access to online health information and services. On this matter, marginalized groups and people living in rural areas are the ones most affected.

A second barrier is related to **communication with patients/clients**. Participants stated how people struggle with understanding the language used by professionals and the contents of the information that they received, or, on the other hand, patients/clients do not listen to professionals since they do not trust their medical knowledge and prefer to rely only on their own information.

Health professionals encounter different barriers also in their **workplaces**. It was noted how they are often equipped with obsolete tools, amplifying a gap between public and private health institutions, with the first presenting a low digitalization rate.

It was underlined how not all the professionals possess the skills to redirect patients to online reliable sources or are not able to keep up with new digital platforms, but, at the same time, they are not provided with trainings to better their digital skills.

In regard to digital education, participants noted a general lack of knowledge on **cybersecurity** systems to manage, store and protect data.

5.3.2 Analysis of (d)HL areas of improvement and institutional intervention

Health professionals identified multiple areas of intervention to provide a better access to health information both to themselves and to their clients/patients. In this context institutions and governments should work on two levels, considering both the needs of the general public and of specialists.

Participants noted how every **European region** has **different needs** and degrees of socio-economic development. These differences should be taken into account in developing a (d)HL strategy, in order to provide tailored solutions to every context.

At the same time, participants identified some joint measures that all European Countries should implement to grant equal access to training to improve (d)HL and technological skills to their citizens. A first step calls for an intervention to **improve both digital and physical infrastructures** in all Countries, to grant all EU-citizens equal access to healthcare centres and online health services. Governments should also start a process of **standardization of information**, to allow professionals and citizens the possibility to find trustworthy health information in just one reliable platform. Furthermore, it was suggested to develop a **one-stop-shop app** to store all personal medical information in one place.

The consultations underlined how the lack of knowledge in both (d)HL and technology constitutes a barrier in the professional/patient relation. To overcome this obstacle, participants proposed to start mapping the level of (d)HL and technological skills of European citizens, to provide both citizens and professionals with **ad hoc training and courses**.

Governments and health institutions should organize professional's working hours to let them attend classes on technological innovations and digital skills. This would ensure a better flow of information between patients and professionals, with the latter being effectively able to provide patients with information on where to find reliable sources, how to use online services and how to understand medical facts.



Image 16 - co-creation sessions with Health Professionals

5.4 HEALTHCARE STUDENTS

The consultations involved a total number of 42 university students from Finland, enrolled in Healthcare, Social Work and Elderly Care Courses and their answers have been summarized together.

5.4.1 Analysis of social and personal barriers related to (d)HL domains

Participants do not experience difficulties in using technological devices. They often search online for topics related to their Course of Study and sometimes they research it with their colleagues.

In their everyday life, students use different channels to find information:

- National health portals.
- Platforms of professional health institutions.
- Health insurance platform.
- Social media.
- Websites of health service providers.
- Scientific sources.
- Video and podcasts.
- Blogs.
- Mobile applications.

Being skilled in the use of technology, students do not encounter barriers related to (d)HL domains. However, they identified several obstacles that citizens face in their everyday



life and that could be summarized into three main interrelated categories: **lack of digital skills; lack of knowledge** and **lack of trust in institutions**.

Regarding the first category, students underlined how people often do not know how technology and online tools work and some of them do not even have access to digital devices, making impossible to establish a first contact with technology itself.

The lack of knowledge has been observed in different situations. Sometimes people do not want to learn how technology works, lacking the motivation. In other cases, it has been noted that people do not possess the language skills to properly express themselves and their needs or they are not able to understand and filter the huge number of information present online.

Lastly, students underlined how citizens often do not trust institutions and, in the case of healthcare institutions, this could be explained by the fact that health information is not shared fluidly between health service providers, resulting in a complex and not clear process.

5.4.2 Analysis of (d)HL areas of improvement and institutional intervention

Despite being healthcare students, none of them ever took part in (d)HL related initiatives. Starting from this awareness, students identified a first area of intervention in the **education**, for both **healthcare professionals** and **citizens**.

Healthcare professionals should receive training to enhance (d)HL skills starting from university's years. Curricula should be provided with specific trainings on how to guide and counsel patients in looking for and understanding medical information and students should be taught how to identify if a patient has been able to properly understand the information received. These courses should be multi-professionals and should be available also for people working at management level at health organisations.

Moreover, professionals should have the possibility to receive ongoing education on technological devices (in order to keep up with their evolution) and on reliable (online) information sources.

On the other hand, citizens should receive a tailored education to form better (d)HL skills. For this reason, students suggested to map citizens' level of (d)HL skills and technological knowledge. The data provided from this mapping activity could provide measurements tools to better understand the problematics in, for example, patient/doctor relationship

and other (d)HL domains. Furthermore, people should have access to health promoting trainings and courses on how to use digital tools. Students proposed that these courses could be taught by both Healthcare and IT students, in a joint effort to provide people with knowledge on digital devices and social and health care services.

As a second area of intervention, students identified was **health information**, focusing especially on how it is provided to both citizens and professionals. It was noted how the needs are different between the two groups and, for this reason, there should be distinct platforms and databases, containing evidence and researched based studies. Citizens should be informed on which are the reliable sources of information and platforms should provide them with instructions on how health services work and how to access them. Digital tools should be designed to be user-friendly, simple, and easily accessible. It should be also considered that not all citizens have access to digital tools, and, for this reason, information should be available also in printed form.

A third area of intervention is **accessibility**. The groups noted how the access to information should be granted to all individuals, despite their own socio-cultural or physical characteristics. For this reason, healthcare workers should be educated on how to provide information to people with cognitive or vision/hearing impairments. Healthcare structures should be provided with employees that know sign language and information should be available in formats easily understandable like pictures or videos. Moreover, a comprehensive digital support should be offered at home or in specific places.

Furthermore, people should be able to maintain in person interactions with health care professionals.

A last area of intervention was identified in the **coordination and organization on (d)HL**. Students underlined how policy makers and managers should be able to guide citizens and employers through the development stages of (d)HL, by providing them with up-to-date and functioning tools and reliable knowledge.

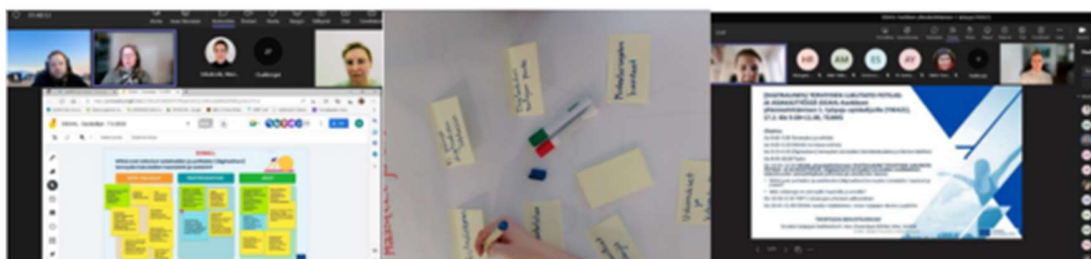


Image 17 - co-creation sessions with Healthcare Students.

5.5 CAREGIVERS

In this section, the target group “caregivers” is presented as an aggregate of formal and informal caregivers. This target group was involved in the following partner countries: Italy, Spain, France, Denmark, and Portugal. The partners that were assigned this target managed to reach 242 participants altogether. It is unfortunately not possible to give a precise number of the participants reached per each subgroup, given that formal and informal carers often participated in the same co-creation sessions, with no clear numerical distinction between the two.

5.5.1 Analysis of social and personal barriers related to (d)HL domains

In general, due to their work and the undergoing digitalisation of the sector, formal caregivers affirmed using digital tools every day to search for health-related information for their patients and to manage their patients’ record and treatments. Technology is perceived as a facilitator in their work, if managed properly. Formal carers are used to deal with patients’ management software and digital devices and have gained good or very good digital skills to use them in autonomy or in some cases with peer support.

On the other hand, informal caregivers have shown more discrepancies, presenting a great divide among carers that frequently use digital tools and the Internet and those who don’t; those who are proactively interested in learning new digital skills, and those who have a more negative attitude towards innovation in the healthcare system. On average, they have a good understanding of the health-related information they retrieve online, except that in most cases they don’t know whether to trust that information or not. For this reason, direct contact with GPs, pharmacists and specialists is perceived as crucial and invaluable. When browsing the Internet, they prefer to use smartphones and tablets rather than computers, since these latter are perceived as being exposed to a faster obsolescence than the former. Overall, the reasons behind their need to search for health-related information online is connected to personal curiosity, getting prepared to a meeting with a specialist, and seeking relief or greater understanding when experiencing a worsening or evolution of health conditions.

When talking about the overall digitalisation in the healthcare sector, they highlighted the inherent difficulties in dealing with **software** that are not user-friendly, easy to use and efficient. Formal caregivers complained about the **lack of integration and interoperability of healthcare services**, and, above all, the **lack of a unified access to**



patients' health history. This is to be often seen in a context of **poor technological infrastructure and Internet connection** which complicate even more the access and use to software and digital healthcare services in the work routine. In terms of personal barriers, formal caregivers affirmed that they **lack time** to promote the use of digital services together with patients and guide them through the use of digital tools and sources, given their massive workload and the lack of personnel. **Training on security** in the use of digital tools and services is also perceived as lacking, which hinder a more responsible use of such resources among professionals as well. Even if they are considered key to understand the (d)HL level of citizens, they do not have the **skills** to measure and assess it.

Regarding the social perspective, informal caregivers complained about the **lack of public investment and public commitment** to raising awareness on (d)HL among citizens, and the general lack of regulation around the topic. Many citizens do not have the **economic means** to access digital devices and services, while others have trouble in understanding the information retrieved because of barriers to **language accessibility**. Therefore, overall simplification of the information and training is needed. Another major barrier, especially in rural areas, is represented by the **lack of technological infrastructure**. At a more emotional level, there is a general **feeling of fear** among informal caregivers when navigating the Internet, because of **potential security threats** and of the overwhelming quantity of information stored which makes it **difficult to distinguish between reliable and unreliable online sources**. In this case, healthcare professionals should play a key role in guiding citizens, but there is a diffused agreement that such role is completely lacking, besides the fact that the patient-doctor relationship is getting worse and worse, owing for example to the general work overload of healthcare professionals, the scarcity of professionals and the time-consuming bureaucratic tasks. As a matter of fact, when asked about personal barriers to access digital services and improve their (d)HL level, informal carers shed light on the **lack of guidance and support from healthcare professionals and public authorities**, which, considered their responsibility when called to take decisions of their cared ones' health, translates into a **general feeling of abandonment**. In line with this, the lack of geographically widespread **patients' associations** also emerged as a barrier for informal carers to receive and provide mutual support among their peers and exchange knowledge and experiences. They problematised the excessively **complicated and time-consuming procedures** to access digital health services, which is worsened by the **overall lack of digital skills** and, sometimes, by **low educational levels**. Finally, seeking health-related information



online appears to be difficult and somehow useless in the cases when cared ones are subject to multimorbidity or experience a development of their health conditions that is out of the norm.

5.5.2 Analysis of (d)HL areas of improvement and institutional intervention

Formal caregivers identified the development of software, technological infrastructure, language accessibility and involvement and collaboration in co-design of digital solutions as main possible areas of improvement. Within these areas, they highlighted some major interventions that should take place to make digital health more widely accepted and successful. In this sense, they mentioned:

- the importance of **clearly defining what is meant by (d)HL** and of defining professionals' **roles** in supporting (d)HL among patients and their families.
- the need to **train professionals**, not only on digital health, but also on communication skills with patients, following a more **hands-on** rather than theoretical **approach**. Training opportunities should be offered by employers, local health agencies, regional health departments and the Ministry of Health, in a perspective of shared responsibility. Also, training activities should be delivered by healthcare personnel with technological skills and software developers together, to contextualize the explanations on actual working scenarios.
- the provision of support to professionals on dealing with digital health services, for example through **guides or chatboxes**, with a focus on overcoming language barriers increasing the use of translations.
- Early involvement of healthcare professionals in the **design and development of digital solutions**.
- **Collaboration** with politicians and managers on the preparation of guidelines for citizens, and on awareness raising campaigns.
- The responsibility for institutions to **promote the use and consultation of reliable online sources**.
- The performance of a **gap analysis** on the existing solutions and changing of paradigm in relation to pilot testing, which should start from an actual involvement of stakeholders and be better used to cast light on inefficiencies and barriers to make the necessary adaptations along the way.
- The provision of **updated software and higher quality technological infrastructure**.



- The establishment of **clear requirements** to prioritise and increase the use of e-documentations.

While agreeing on the need to improve language accessibility, digital services and infrastructure, informal caregivers identified these other areas of improvement as well: support, access to data, communication, integration, and transparency. Informal caregivers recognised as effective enablers the following actions:

- **Simplification of the access to personal health data and information**, through the design of applications that can be customized based on the needs of the user, and the development of a unified access platform. Connected to simplification is **systems integration**, for which some informal carers also hypothesized the use of AI to empower citizens in collaborating on such process.
- Quantitatively increase the number of **national awareness campaigns** on disease prevention and other events where to be trained or receive important information, such as health promotion fairs, and open training sessions. Training on how to increase (d)HL levels should be provided in a transversal way, regardless of one's working background, in all workplaces.
- **Communications** coming from digital services and from physical offices should be improved using low-tech tools, SMSs, and other similar user-friendly notifications; investing more on public relations officers' training on how to guide patients and families through digital healthcare services, financial help, respite care, and disease evolution. This could include the use of **flyers** or the development of **written guides and good practices manuals**. Communication should be boosted on organ donation and transplant and, where applicable, on anticipated directives and living wills since they contribute to the empowerment and self-determination of each individual.
- **Municipalities** should offer itinerant **helpdesks** for the citizenship, not only opening some offices where people should go to, to reach the "hard to reach" and all the people that may find it difficult to travel for receiving support to access digital health services. Municipalities could **enrol volunteers** to this end. Additionally, local entities should also provide citizens with **free internet access and points**, so as to help people facing economic barriers or lack of connection or quality technological infrastructure. Finally, they should let their offices remain open to the public for a longer time.



- At a higher level, decision making around digital health and (d)HL should adopt a **more efficient and far-sighted approach**, it should prioritise the enrolment of new medical personnel to fill in the current shortage, while also envisioning new intermediate professional positions. Decision-makers in medical schools should also prioritise **training on listening and caring skills** in medical schools, as an attempt to rebuild the relationship between patients and doctors. More **campaigns against misinformation** should be developed and given visibility, with the TV playing an important role in reaching citizens.

On a conclusive and general note, in the co-creation sessions it was discussed what kind of apps and support caregivers could benefit from. As well-known, the responsibility of caring for somebody else can be burdensome if a carer is not provided with sufficient relief but left alone. In this sense, more attention should be given to the **psychophysical well-being** of informal caregivers. To this end, it was emphasised that apps on health issues, health tips against burnout and monitoring programme for carers may be included as actions to perform in order to alleviate the burden on their shoulders and prevent certain health conditions from emerging. They should be provided with psychological help, increased support from social workers, and more time to dedicate to themselves to relax.



Image 18 - co-creation sessions with Caregivers.



5.6 FAMILIES

This section gathers the results of the consultations with two sub-groups: families and families of people with diagnosed chronic diseases from Spain and Denmark, for a total number of 44 participants.

Ideas, feedbacks, and points of view have been merged when groups provided similar answers, while the distinction has been maintained when dealing with specific needs, barriers, and suggestions.

5.6.1 Analysis of social and personal barriers related to (d)HL domain

The members of this target group use actively technology in their everyday lives, as a tool to look for health information. Participants turn to the Internet when needing explanations of certain symptoms (or diseases) or when they do not understand the information provided by their doctor or the language used in drug's leaflet. Even social media assume an important role, in fact participants follow influencers that suffer from specific diseases.

Participants also make use of online services to book appointments for themselves or for older adults or people with chronic diseases in their families.

Despite the extensive use of online technology, participants still face multiple barriers when approaching digital tools and services.

Members of both sub-groups underlined how a **general lack of digital skills** impede citizens to easily access online services and information. Families of people with chronic diseases noted how them (in their double roles of citizens and caregivers) and their relatives, are often left on their own when dealing with technology. Institutions often take for granted that people covering the role of informal caregivers can navigate online tools and services, but most of the times, their level of digital skills is not considered. On the other hand, patients with chronic diseases need frequent access to health information and without a proper digital training it is almost impossible to consult them.

Groups members identified another barrier in the **quality of online information**. Participants are not always sure they can trust what they read online and often they face difficulties understanding it. It was stated, in fact, that language used in health-related contexts is very technical and hard to get if someone does not possess medical education.

In their use of **online services**, participants lamented a general **difficulty in using them**. When dealing with specific procedures (like, for example, filing in a complaint or installing specific applications) users find them complex and get confused when the process requires too many steps to be completed. They also underlined how it is difficult to find support both online and offline: some participants turn to social workers or family members for help, while others try to look online for a solution, often with a low success rate.

5.6.2 Analysis of (d)HL areas of improvement and institutional intervention

Regarding their specific needs, participants pinpointed three major areas of intervention.

The first step institution should adopt to increase participants (d)HL skills, is to provide them with **tools and trainings**. This action should be implemented onto two interrelated levels. The first level, referred to tools, should focus on granting all families access to the Internet, since there are still people who do not have digital devices at home or that cannot connect to the Web. The second level of this intervention should be centred on offering citizens trainings on how to use online services, how to look for online information and how to identify reliable sources.

A second area of intervention is related to **online services development**. In the meetings it has emerged that online tools should be implemented to be more user-friendly. This mean developing online platforms with a simple language, with few identification steps and clear and simple processes and with information presented in a very clear form.

For people in need of care, there should be applications that can redirect them to emergency numbers in the event of an emergency.

The last suggested improvement comes from the experience of relatives of people with diagnosed chronic diseases, that asked for **more support in accessing online tools**. People in need of care cannot always access their health information on their own and, for this reason, caregivers should be provided with codes or permissions to access their relatives' health dossiers. Moreover, people living alone that cannot receive the help of a family member, should be provided with technological support by home care workers.



Image 19 - co-creation sessions with Families.

5.7 PEOPLE WITH DISABILITIES

As explained in section 3.1.2, there were major constraints in the engagement of the target group “people with disabilities”, which represented an obstacle to the involvement of the expected number of participants established in the project proposal. According to the UN Convention on the Rights of Persons with Disabilities, these latter are defined as “those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others”.⁴

In the end, it was possible to successfully engage 2 people belonging to this target group. Obviously, the limited number of participants reached suggest that the opinions and perspectives shared by them during the co-creation interviews cannot be deemed representative of their whole population group. A representativeness that would be however very difficult to achieve, considering the broad heterogeneity of such group. While bearing this in mind, the feedback gathered from the two participants is reported in the following subsections.

5.7.1 Analysis of social and personal barriers related to (d)HL domains

Regarding their habits in the use of digital tools and their (d)HL level, participants affirmed using the Internet and tools like smartphones and computers daily, both at home and at work. They are aware of which are the most reliable online sources of information in their

⁴ Convention on the Rights of Persons with Disabilities, art.1 – Purpose, <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities>.



country, for instance, the national healthcare system website, hospitals, or universities' websites.

Among the main barriers they face when using digital health services or searching for health-related information online, they mentioned the **lack of *ad hoc* searching processes to assess the credibility of the sources** consulted, the **lack of accessibility of the information**, which were mainly due to wrong use of formats, colours, and accessibility options. Another major obstacle is the **lack of broad access to connection** and the presence of bugs in the system, which can even have a greater impactful fallout on the routine and the independence of people with disabilities. These gaps cause disconnection among people and lack of access to services.

As far as online services are concerned, these often **lack readability** since they use formats and colours that aren't user-friendly, and, also, they present **complicated and time-consuming procedures**. As a general remark, the participants affirmed that the Internet and the webpages in it are designed for the general public, not for people that have to deal with specific complexities derived from the disability they suffer from. This translates into the need to better involve people with disabilities in the co-design of web apps and actually listen to their needs.

5.7.2 Analysis of (d)HL areas of improvement and institutional intervention

In light of the barriers mentioned above, several areas of improvement have been identified. First, the importance of considering the **need to maintain and further develop analogue solutions** that are essential in some cases, given the impossibility of using the Internet and existing digital tools. Second, in the attempt to guarantee the access to as much reliable information as possible, it is important that **scientific papers and studies** that haven't been **digitalised** yet are finally digitalised **and made available to the public**. Third, videos uploaded online and videocalls should **include subtitling and/or a sign language interpreter**, to make them accessible to people with hearing impairments. Fourth, **Internet connection** should be **guaranteed everywhere**.

The potential areas of interventions follow the suggestions provided previously for the areas of improvement. The accessibility of many services, even emergency services, should be improved by considering the increase in use of **text messages** for example to communicate with 112 or to use public transportation. People with disabilities should in general be increasingly **consulted** when designing online services. It is a government's



responsibility to ensure they are fully engaged in the digitalisation process and that, above all, their heterogeneity is bore in mind. Engagement of this target group should be intensified not only in relation to the co-design of digital solutions, but also **in terms of co-design of the information** itself. This means that people with disabilities could help co-create the information, find other levels of the information to be exploited for its communication while possibly making it interactive. They should be also asked their preferred means to receive such information. Concerning their doctor-patient relations, they feel they should be given the possibility to **choose between in-person and online visits**, depending on their wishes and needs. Therefore, an EU (d)HL Strategy should mainly focus on enhancing the importance of understanding the different needs of the people belonging to this target group, while also supporting a more critical view of the digitalisation itself, meaning the need to preserve and keep investing in analogue solutions as well.

It has not been possible to provide a photo of the interview due to the risk of exposing the individual that attained in the interview.

5.8 OLDER ADULTS

The co-creation process conducted with the older adult population involved a total of 247 persons from France, Italy, Spain and Portugal counting autonomous older adults, older adults in fragile conditions, and older adults with minor impairments with the intention to obtain as broad a picture as possible of an extremely composite and differentiated segment of the population.

5.8.1 Analysis of social and personal barriers related to (d)HL domains

Their habits in using technology and digital environment to support their health were investigated as a first step. In general, the majority seek information about their health when **experiencing specific symptoms or health problems** in order to figure out the possible cause. Another reason for searching is the necessity to **better understand** the information received from the general practitioner (GP) or the specialist because considered unclear or not fully understood. Two other main factors drive autonomous research, namely the desire **to get more information** on a specific pathology or a health-related theme and **deepen it**. In addition to searching for information, technology and the

digital environment are used to **access health services**, for example, to book appointments with specialists, download certificates or prescriptions, and accomplish bureaucratic and administrative duties.

As far as the search for information on health and well-being is concerned, the channels consulted are rather differentiated. Many turn to **GP, pharmacists, or specialists** as they are considered key reference points as experts in the discipline. **Traditional media** such as television, radio, newspapers, or magazines are also appreciated as easily accessible. A large proportion makes use of the **Internet**, consulting both institutional websites/platforms and means such as Google and YouTube. However, in this regard it should be emphasised that the majority of fragile older adults, especially those living in a nursing home, tend to rely on verbal consultation with doctors and professionals, rarely and just occasionally using the internet to gather information.

Another important aspect to be highlighted in is that **the information available is considered too abundant** and its **level of reliability difficult to assess**, especially when it comes to the digital environment. This results in a low degree of trust in digital sources, unless they are of an institutional nature, when present. However, such a situation also characterizes the traditional media, e.g., television or newspapers, where health-related information and communication is sometimes perceived as contradictory and consequently equally confusing.

Moreover, **the language** adopted to communicate and transmit information is considered **scarcely accessible**, too specific and technical and the use of English terminology represents for many a further factor impacting the comprehension. Of course, in these circumstances, educational background plays an important role in influencing the individual capacity to understand.

Despite the quite widespread use of technology and the digital environment for health and well-being, older adults' **level of confidence can be described as medium**, in a range including people who define themselves as very competent, or, on the contrary, completely digitally illiterate. On average, they appear **sufficiently autonomous** in digital-health-related actions, although resorting to the **support of family members** in the case of complex operations or at an early stage, to learn how to properly use devices or the procedures to access online services. General practitioners and professionals are also consulted to receive support, especially from fragile older people living in care facilities.



Smartphones represent the privileged device, because being the most diffuse and of immediate access and use, followed by tablets and computers. Nevertheless, the **computer** is preferred to perform operations that are perceived as more complex or when a higher level of attention is required. Thanks to its larger screen and the more user-friendly keyboard, it simplifies and facilitates the execution of tasks. Moreover, it allows to print of documents and store downloaded ones.

Despite being utilised, often forcedly given the recent growing digitisation of services, technology and the digital environment present **several barriers** of a diverse nature.

As above mentioned, even though older adults adopt technology for health in their daily lives, many still feel **insecure while using it**. Insecurity is both related to the use of the device itself, so to the hardware component, and to the procedures required to access services, so to the software one. The correct use of the device can be complex, for example in properly interacting with the touch screen, double-clicking, locking it. On the other hand, also understand how programmes work and interact with them is considered challenging.

Procedures to access digital health-care services are deemed too long, complex, and subject to excessively frequent changes or updates which oblige them to learn from the beginning a new pathway after struggling to properly handle the previous one. This is perceived as particularly frustrating precisely because of the mental resources and time that learning and being able to manage a novel procedure requires. This is even more difficult, according to them, since older people generally lack the necessary mind flexibility that is key to easily acquiring this type of skills.

Moreover, as many of them highlight, their generations, especially the older ones, **did not have the chance to develop familiarity with the technology** and the digital environment, which ended up being represented and experienced as something distant, that “does not belong to them”. On the other hand, “laziness” and disinterest are counted among the reasons why some seniors avoid as much as possible or totally refuse to use technology.

Some others are reluctant as they find the adoption of **technology as a threat and detrimental to the doctor-patient relationship**, which is found crucial. With regard to this aspect, while technology is recognized as a potential mean to support and facilitate communication with the GP, for example adopting WhatsApp or email, the face-to-face encounter is considered irreplaceable, as it allows for a more direct and not mediated

exchange, making it easier to ask questions, request information, solve doubts. Moreover, presence consents the person to feel reassured and really listened to.

The GP-patient relationship is mentioned also in consideration of the recent changes it is currently undergoing. According to some, the **family doctor is progressively turning into an administrative employee**, more devoted to bureaucratic and formal duties than to visiting and dealing with the patient. This is at the expense of an authentic patient-centred relationship and, therefore, of the possibility of improving one's health literacy, acquiring awareness about one's health, and being incentivized to properly manage it. Such a poor communication and interaction can also result in a difficulty in being consistent and complainant with the indicated treatment. However, this is also attributable to the challenge in accessing examinations in a timely manner due to a public system suffering a lack of specialists, excessively long waiting lists and unable to adequately serve remote territories, as the rural areas.

5.8.2 Analysis of (d)HL areas of improvement and institutional intervention

Only part of the older people involved had the opportunity to participate in information and awareness-raising events promoting health and well-being, or dHL. What emerges is a **marked demand for training and education aimed** at supporting and encouraging older people to use technology to manage their health in order to be as much independent as possible. Training should be **provided on a regular basis by local governments and public institutions** as a duty to citizens.

The issue of **procedures for accessing digital services** is another hot topic. They **should be simplified** reducing their steps, with clearly provided directions and a clean graphical interface. Although there is awareness that this is a strategy for ensuring security, frequent requests for password changes are perceived as a hindrance and would therefore be appreciated not to be too frequent. Similarly, programs' updates should be limited as much as possible, and any new versions should not include significant differences from previous ones, so as to avoid having to learn a new procedure.

Reduction of complexity should also occur in the language used in health-related communication and information, whether online or through traditional channels. A simple but comprehensive language should be adopted, limiting the use of over technical and English terminology, unless strictly necessary. Also, communication, whether written or by other means, should be concise and short, so as not to require an excessively prolonged level of attention and to be more easily understandable by everyone, regardless of the level of education.



Equally useful would be for the **information to be made more easily accessible**, for example through dedicated physical desk where citizens could receive guidance and orientation. In fact, obtaining coherent and complete information on existing services, both online and traditional, is considered quite challenging. Receiving clear, consistent, and up-to-date information from a trusted reference point would go a long way in raising awareness and improving health literacy, with positive effects on health and wellbeing.

The exchange of patient data between doctors, specialists, and institutions should be simplified. This would avoid the patient having to represent his or her medical history, as is often the case. Poor or absent communication between specialists is perceived as a great discomfort and stress. A more fluid communication, supported for example by a single IT system or by systems characterized by a good level of interoperability, would be highly appreciated.

On the other hand, **GP, doctors, and specialists** should receive training to become more empathic and improve their competence in managing the relationship with older patient, by learning to properly communicate and dedicating the necessary time to listen to their patients.

Finally, part of the participants evidenced that the **cost of specific exams and treatments is too high**, which leads some to renounce undergoing them. Form of financial support could therefore encourage compliance with treatments and indications.



Image 20 - co-creation sessions with Older Adults.

5.9 WOMEN

The co-creation process involved 84 women, including 57 young women at the age between 18 and 40⁵ and 10 pregnant women. Co-creation was conducted in Ireland and Spain. Women were invited to share their habits on the use of technology and digital tools to search for health-related information and to access service. They then discussed about barriers society and their specific encounter in doing so and potential strategies to overcome them.

5.9.1 Analysis of social and personal barriers related to (d)HL domains

Women are most likely to **seek health information when they have symptoms or want to know more about a condition they have been diagnosed** with by their GP. They also often search information about the health of their family members, again to deepen their knowledge about specific symptoms or diseases.

The **use of technology**, particularly smartphones and the internet, **is widespread**. Search engines such as Google are the most used channel, but there is also extensive recourse to social media such as Instagram, TikTok and YouTube.

However, there are conflicting views on these channels: some believe that research via social media is more reliable because by following the accounts and profiles of doctors or experts in the field it is easier to access trustworthy information; others, on the contrary, believe that Instagrammers and Tiktokers, and influencers in general, are less reliable compared to an independent search on Google or another browser, where it is the subject who chooses and accurately assesses the reliability of the source.

Overall, there is a diffuse awareness of the fact that **information found on the web needs to be verified** as it can be wrong, incomplete, or poorly accurate, except for institutional sites. Moreover, the majority believe that information on the web tends to be alarmist and anxiety-provoking, as common symptoms, which may be indicative of a wide variety of minor ailments, are frequently associated with extremely serious diseases. Added to this is the **excessive abundance of information** present online, which makes

⁵ No precise limits were given as to the age group comprising “young women”. One partner therefore considered “young” the women aged between 18 and 30. The other identified a wider range, spanning from 20 to 40.



it even more complex to assess the reliability of the source, creating confusion and disorientation.

Another barrier that, according to the women, cuts across several segments of the population is **poor digital literacy**, which results in people relying on more traditional sources of information, very often directly to their GP. Besides this, limited familiarity with the technical language also results in the incapability to carry out more targeted research, and thus in more limited access to sources and a more limited understanding.

The difficulties of more **vulnerable population**, whose **agency and autonomy in the use of digital devices and services** is judged to be **limited**, are also mentioned. Moreover, specific population groups such as migrants, refugees, Irish Traveller community, people living rural or remoted areas suffer the effects of **poor Wi-Fi access** because often confined to remote areas. This aspect calls into question the technological infrastructure that is unable to adequately cover all territories, thus becoming an important determinant of health.

Limited information about the **use of personal data and profiling mechanisms** is identified as another relevant disincentive to accessing online services and information. Indeed, there is a concern that one's data will be misused, or sold, or that personalised medical/health advertisements and announcements will become excessively invasive and potentially cause anxiety.

In addition to this, **medical/health personnel**, who could potentially provide valuable support and encourage the use of technology and digital services for health and well-being, are perceived as generally **scarcely trained and competent**. This makes their capacity to mentor patients discontinuous because connected to the individual's ability and initiative and therefore with low impacting.

A **barrier specific to the female population** is finally mentioned. It is noted that **information on women's health**, such as the menstrual cycle, reproductive health, pregnancy, and maternity, tends to be **scarce** and sometimes treated in a **generalised**, and trivialised way. There is also a great deal of **misinformation** on the subject. This is attributed to a scientific paradigm which is built around the particularities, needs and problems of the male population, undermining proper communication on feminine health.

5.9.2 Analysis of (d)HL areas of improvement and institutional intervention

In order to bypass the underlined barriers and support digital health literacy, women bring forward several suggestions.

First, it would be useful to develop an **institution-promoted system of validation and certification of information** available online. In this way, the validity of the information would be immediately recognizable. The inclusion of references to original sources would be equally useful, should one wish to directly consult the article or scientific study cited or from which the data reported are extrapolated.

On the other hand, the usefulness of **making the information more accessible**, and simplifying the language, while keeping it complete and exhaustive, so as to promote understanding, is constantly highlighted. Alongside this, **targeted communication** products should also be realized, to meet the characteristics and specificities of certain population groups. Producing information materials (both digital and traditional) in multiple languages is another important element to make health information more accessible to groups at risk or already exposed to social exclusion, such as migrants and refugees.

In order to mitigate the exclusion of a substantial proportion of citizens, **digital literacy training** and, alongside them, **dHL** should be promoted consistently and extensively. This would offer concrete support to many citizens who still struggle to use these means, allowing them to improve their knowledge, become more autonomous and thus have more awareness and control in managing their health.

Digital literacy and dHL should also be aimed **at health professionals**, primarily at GPs, who represent the main interlocutors of the population. They should have the necessary skills and knowledge to inform their patients about the available services and possibilities to take actively take care of their health. Moreover, they should be **trained in addressing a very diverse audience**, which includes people with diverse backgrounds and cultural sensitivities.

Promoting **awareness raising, prevention, and information campaigns via social media**, obviously of an institutional nature, is seen as a potentially very effective medium. Similarly, **online workshops** are seen as valuable tools. Health information could be promoted through **podcasts, radio programs**, but also through documentaries distributed via mainstream **platforms such as Netflix**. The use of different media would consent to reach out to a large variety of population groups. Pathways to awareness and

information should be activated in **schools**, addressing topics such as sexual, reproductive, and mental health, but also nutrition and related diseases.

Equally useful would be the creation of **apps** exclusively **dedicated to health information** promoted by the institution, to ensure their reliability. Moreover, apps that provide easy and direct access to a patient's medical history would also be useful in order to facilitate citizens' awareness on their health and their communication with doctors.

In the specific case of women, **apps, web platforms and guides devoted exclusively to feminine health** would be highly appreciated, especially for the purpose of obtaining more accurate information than that available online, which is often unspecific. This would be important also to gather accurate information on pregnancy and breastfeeding, topics tendentially addressed with an approximate approach.

Finally, a general observation concerns the relevant topic of **sustainability of the healthcare system**. According to part of the participants, it is crucial to develop services and solutions through the collaboration of the diverse social actors. Only in this way their accessibility and sustainability will be ensured.



Image 21 - co-creation sessions with Women.

5.10 CHILDREN

In the co-creation phase, 53 school children were engaged and contributed to providing their opinions on the research topics. As previously mentioned, this target group should have been an aggregate of 30 school children and 20 children with diabetes, as initially envisioned; yet, due to the difficulties and, consequently, the impossibility to reach these latter, the initial expected target of school children was exceeded, succeeding in engaging 23 participants more than expected. Co-creation activities with this target group were organised in Spain only.



5.10.1 Analysis of social and personal barriers related to (d)HL domains

The children involved in the activities affirmed using the Internet and electronic devices quite often to search for general information, and especially to watch videos. Older children, in particular, frequently use **YouTube and TikTok** to this end. Given the fact that they are born in the digital era, they begin to have an **independent use** of digital devices **at quite a young age**, with only the youngest needing parents' support while surfing the Internet. This happens especially in the case of health-related online searches. The use of digital tools is quite diffused at school as well. Among the various types of devices, the one they prefer is the **tablet**, because it's very similar to a mobile phone, but with a wider screen, and user-friendly. Others prefer **smartphones** because they can be easily carried anywhere, while the use of computers is more marginal, even if the presence of bigger and easy-to-use keyboards is appreciated.

As digital natives, they did not report having any kind of technical difficulties in the use of digital devices, which, as underlined above, is very diffused, not only at home, but also at school. The barrier they mostly feel has to do with the **lack of ownership over the digital device itself**, which is owned generally by parents. Regarding the concept of health, they are **not fully aware** of its meaning and of its different branches of course, and they do not particularly feel the need to search for health-related information online – an aspect that might have been interpreted differently in the case of children suffering from some kind of disease. Still, they did show the ability to distinguish between healthy and unhealthy habits, concerning food or physical exercise for example.

5.10.2 Analysis of (d)HL areas of improvement and institutional intervention

As mentioned before, children do understand the meaning of healthy lifestyles, but at their age they **struggle in understanding the broader concept of health**. The formal institution where they receive pieces of information around this topic is the **school**. Here, they have been involved in activities focused on first aid interventions, on the role of women in science, and in prevention campaigns, such as the one on how to properly wash the hands during the Covid-19 pandemic. Yet, even if in school they are used to deal with digital tools, they comprehensively show more interest in performing activities with their peers rather than merely using digital devices.



Image 22 - co-creation sessions with Children.

5.11 MIGRANTS

The co-creation sessions implemented by project partners involved a total amount of 198 migrants belonging to different age groups in Germany, Spain and Sweden. Their habits and experiences in relation to HL and dHL were investigated, and indications and suggestions on potential areas of improvement were collected.

5.11.1 Analysis of social and personal barriers related to (d)HL domains

Several diverse motivations bring migrants to use digital media regarding health. Many access the Internet to **acquire information on healthy lifestyles** and **proper nutrition**, with a particular focus on children's eating habits. All seek information on specific **symptoms or diseases** and their **prevention and treatment**. Many look for information on the **side effects of drugs** and their correct use and browse the web to **buy medicines**. Internet and online services also represent a way to obtain **information on specific doctors and/or hospitals** (e.g., through user reviews), to book visits, and to manage **health-related administrative procedures**.

The use of media such as **Google** and **YouTube** are widespread, as well as the use of **social media** such as Facebook, TikTok and Instagram and communication channels such as WhatsApp and Telegram.

However, the majority feel that it is **difficult to assess the reliability of the sources reachable online**, which leads many to describe online information as unreliable, apart from that retrieved from institutional websites.

Another relevant issue is that of **language**. Many believe that they cannot relate to online and traditional information because it is not completely understandable to them, not least because it is often provided in a too technical and specific language that does not belong to the basic vocabulary of everyday interaction. In response to this, some report that they still seek information by consulting the **websites** of their countries or via **YouTube channels** and **social media accounts in their mother tongue**.

Furthermore, the difficulties (sometimes impossibilities) of comprehension have a deeper impact on their HL in its different declination. Indeed, they recognise that **language is an obstacle** not only to the acquisition of health-related information, but also **to the autonomous use of services**, both online and traditional. Moreover, the problematics related to language has repercussions in **direct communication with doctors** and in the **management of formal and bureaucratic procedures**, i.e., in the correct filling in of documents. Finally, a gap, although not of a linguistic nature, is identified in the **difficulty encountered in understanding how the health system of the host country is organised and functions**.

Moreover, some indicated the **digital divide** as another obstacle to the use of services and access information via digital channels. Despite this, the use of the **smartphone is** largely diffused for collecting health-related information and accessing services.

5.11.2 Analysis of (d)HL areas of improvement and institutional intervention

In order to develop a response to the issue of reliability of sources, many believe that it would be of great help if **Facebook pages or Instagram profiles** were created **containing only validated and complete information**, so as to assure the user that the information is correct and avoid having to consult additional sources, which can lead to confusion. Equally helpful would be to provide links to the original sources or at least to cite them clearly, so that the individual, if interested, can consult them themselves. These measures could also help mitigate the fearmongering that often occurs on the web, which produces anxiety, but more importantly collaborates in the circulation of misinformation.

The **development of certified and free institutional web platforms, portals, and apps** with simple interfaces and user-friendly search tools could also play an important role in this scenario, facilitating access to scientifically sound and trustworthy information. The integration of image search would be highly appreciated. Indeed, it is often the case that



people do not know the name of particular diseases, for example specific skin conditions, which would be easier to trace back to in this way.

In general terms, of great benefit would be for these communication and information channels to be developed in **multiple languages**, contemplating non-European languages as well. This would further expand the pool of users who would be able to access them, this way improving their (d)HL and their autonomy and agency.

Fundamental to this would be the diffusion of **printed multilingual materials**, as leaflet, brochure, or booklets at places of refugees' reception as well as in areas often frequented by migrants. This way even those who do not possess good digital skills, do not own digital tools or living in a situation of elevated precarity would be reached.

Still, it is believed that some **supportive actions** should be **provided by the public institutions**. These would undoubtedly include proposing **training opportunities** on (d)HL, which would also make it possible to bridge the educational gap that some migrants feel interest certain groups who have not had good educational and training opportunities on health issues in their countries of origin, and who therefore have little knowledge of the multiple issues related to health and wellness and their management.

Moreover, they affirm that support should be given not only in a narrow sense with respect to health management, but also with respect to the **functioning of the host country's health system** and its local declination. Knowing organization and procedures is in fact equally relevant in order to ensure health and falls under the umbrella of HL.

As far as the **doctor-patient relationship** is concerned, the possibility of the presence of a cultural mediator during the visits would make it possible to overcome some language barriers that on the one hand prevent a full understanding of what the doctor is saying, and on the other hand make it complicated for the patient to ask further questions, insights, and clarifications. Even having the opportunity to fill out before the visit a form (paper or digital) with which to anticipate the questions one intends to ask or some elements, even of a cultural figure, that the doctor must take into account could be of considerable help in this regard.

However, many consider of great importance the direct, face-to-face relationship with the physician, which should be encouraged. To this end, **physicians themselves should also be trained** and made more knowledgeable about relevant elements of **migrants' cultures**. This would allow the development a more informed and efficient doctor-patient



interaction and relationship, avoiding as much as possible misunderstandings, helping practitioners in better understanding patients' needs, habits, and approach to health and disease, and consequently support and guide them more effectively.

Finally, they recall how the condition of **being a migrant**, and even more so that of being a refugee, can **expose to high level of stress and anxiety**, which can affect mental health and lead to unhealthy habits such as excessive drinking and smoking to try to manage. Therefore, it would be relevant for institutions to take actions in order to inform regarding the risks of such unhealthy behaviours. In fact, according to them, citizen-focused information campaigns developed for this purpose do not effectively reach this segment of the population.



Image 23 - co-creation sessions with Migrants

5.12 PRISONERS

The co-creation process carried out within the project involved the rarely represented segment of the prisoner population. In total, 133 prisoners were reached. In this regard, it is worth noting that the co-creation with the prisoners was conducted by only one partner and exclusively on Spanish territory. Therefore, although some conditions and characteristics of this population sample can be considered common to all individuals in detention regardless of geographic location, it cannot be excluded that there may be differences related to the specificity of prison conditions in a given country. Some of the information reported below may therefore be influenced by such differences.

5.12.1 Analysis of social and personal barriers related to (d)HL domains

Firstly, it is crucial to emphasise that prisoners do not have the possibility to access the Internet. Therefore, the information reported below on the use of technology and the web to access health information and services refers to their habits while at liberty.

A good majority of the participants describe themselves as **digitally competent** and tend to favour the **smartphone** as a means of online research. Only a small percentage of them state that they do not use the Internet at all. More than half declare they use the Internet to research health-related issues, mainly focusing on nutrition and healthy lifestyles.

However, only a minority turn to institutional websites or platform while conducting the search in the intent to reach to more reliable sources. In general, there seems to be widespread **trust in online information**. However, it should be highlighted that some still tend to place greater trust in health professionals.

Although the use of digital sources is widespread, approximately **only half of the participants involved claim to understand the information** they find, and even for them the information is not always clear and fully acquired.

As far as **health administration through traditional channels** is concerned, they point out that there is obviously **no autonomy** in this respect, as it is necessary to rely on internal staff to obtain medical advice, visit and examination.

5.12.2 Analysis of (d)HL areas of improvement and institutional intervention

Since **prisoners do not have the possibility to access the Internet**, there is no basis for reasoning with them in terms of barriers to health-related online services and information. In fact, the very prohibition of accessing the web constitutes a barrier to this. However, thinking in terms of obstacles, they point out that the **available devices**, specifically computers, are **obsolete** and their use is exclusively reserved for those attending courses or in a training process. This circumstance is therefore considered a barrier to their digital literacy, as digital skills cannot be developed or eventually improved.

On the other hand, all the prisoners had the opportunity to take part in **health literacy courses on the topic of sexually transmitted diseases** organised by the custodial institution. Some of them also participated in a course on the topic of well-being run by a volunteer prisoner.



They declare to be very interested in **mental and emotional health**. This is mainly due to the stress they are exposed to because of their life circumstances as inmates, where their freedom and self-determination is highly limited. For this reason, they would like to have access to meditation and relaxation practices in order to better manage the psycho-physical effects such condition entails. **Sport, well-being, healthy lifestyles and habits, and nutrition** are also considered relevant topics.

Participants believe that the use of offline devices could support them in improving their HL and managing their overall health and wellbeing. Specifically, developing **games** on health-related arguments is seen as a potential strategy to encourage and enhance their HL. In their view, also the possibility to exchange the points acquired through the game for money to be spent in the prison shop would represent a rewarding strategy with this objective.

Radio programmes on health-related topics are also considered to be excellent channels of information and awareness creation. In-house radio could therefore be used as a vehicle to improve skills and address health-related themes they are interested in. Similarly, **power point presentations** on current topics concerning health and scientific progress in the medical field are seen as a possible way to keep them informed and up to date, given the impossibility of autonomous and real-time access to information.

It has not been possible to provide photos for prison security reasons.

5.13 CITIZENS WITH LOW INCOME AND CITIZENS WITH LOW DIGITAL SKILLS

This section gathers the opinions, feedbacks, and points of view of 141 participants from Belgium, Spain and Portugal. It was decided to dedicate the same paragraph to people with low income and people with low digital skills, because during the co-creation sessions it has emerged that the lack of economic means is linked to a low access to technology, diminishing the possibilities to learn how to use it.

Nevertheless, in the following paragraphs the distinction between the two groups has been maintained when provided different answers.

5.13.1 Analysis of social and personal barriers related to (d)HL domains

Both groups use technological devices on a daily basis, such as smartphones, TV or (in few cases) laptops. Their use of technology is not often related to the health domain, in fact participants declared to access digital services for communicating, using social media, taking, and sharing pictures, checking their bank account or to look for information on the weather or on traffic.

Citizens belonging to these categories, prefer to avoid searching for health information online, for two main reasons: they **do not feel at ease** looking for such complex matter online and they **do not trust** online information. They prefer to rely on their GP, pharmacists, family members or popular knowledge to solve their doubts on health matters.

To avoid these inconveniences, some participants prefer to look for information on health-related apps, because they feel the information contained have been somehow validated.

Nevertheless, they identified a series of specific situations in which they turn to the Internet to look for information:

- To better understand what a doctor told to them or what is written on a medication notice.
- To inquire about certain symptoms.
- To have information on allergies.
- To know more about medical drugs.
- When a family member is sick or at the hospital.

In the co-creations session with the groups of citizens with low digital skills the theme of **online security** has emerged as a critical topic. Participants stated how they often ask relatives or trusted people to access their smartphones to install apps or to access their private accounts to consult their personal record or make online appointments, stating that they have nothing to hide from their trusted ones. This underlines how people with low digital skills give less importance to their security and are keener to share their private credentials to people they think they can trust.

In their everyday lives, participants face different barriers, both online and offline.

The first one, that unites both groups, is the **complexity** of **getting in touch** with their **GP**. Participants stated how it is difficult for them to book an online appointment (due to the very complex procedure) and furthermore, there are few spots available since there is a general lack of doctors and specialists. It was noted how, even after being able to meet the with a practitioner, participants are still left with doubts, since the **language** used is often very **technical** and **not easy** to understand. They also underlined how visits end with their personal information stored in different platforms, complicating further the access to their personal data.

The groups of citizens with low digital skills pointed out how many barriers are related to their **lack of knowledge** of the Internet and of technology in general. They usually do not have problems with basic procedures (like sharing a picture on WhatsApp), but things tend to be more complicated when they have to face more difficult process, like logging-in using a two-steps verification. In addition, if the language is too technical, they tend to feel overwhelmed and prefer to pull back from what they were doing.

Cookies are another problem participants encounter often: they do not want to accept them and be profiled because they want avoiding receiving unrequested marketing e-mails.

Another barrier underlined by participants is the **financial** one. The lack of economic access to digital devices such as smartphones, tablets, or computers, impede people from approaching health-related online procedures and increase the risk of being left out from important communications. Some participants rely to digital devices present on public libraries or municipalities, but these tools are often slow and obsolete.

One important aspect that emerged from the consultations with low-income citizens, is the **effectiveness of information campaigns**. Some citizens stated that their current health issues are the results of years of bad habits and unhealthy behaviours. They underlined how they were aware of that fact that their lifestyles were not healthy, but social and psychological variables dragged the participants towards them.

On another hand, there have been participants that had very positive experiences with health campaigns, being able to take part in initiatives on mental health and emotional wellbeing, such as mental health games, emotion management and self-care. They also stated that they would have preferred to attend this meeting online, since they would have felt more at ease than in person.

5.13.2 Analysis of (d)HL areas of improvement and institutional intervention

Participants stated how actors on different levels (international, national, and local institutions; health insurers and doctors) should promote changes to make health information accessible to everyone, and in doing so they should intervene in different areas, which will be presented in the following paragraphs.

In developing new initiatives, policy makers should consider social and economic differences, in order to make access to technology really universal. Citizens with low income are aware that their social condition often exclude them from accessing both technological devices and information, worsening their already fragile condition. Participants showed interest in the IDEAHL's co-creation sessions and underlined how policy and decision makers should involve more often citizens in defining strategies and policies.

The groups underlined how **education and training** should be improved and implemented, to engage citizens that are often left out. Participants stated how they are given little or no opportunities to learn and to keep up with technology once they have finished school or they have exited the job market. In fact, most courses are not for free, and they cannot afford them. For this reason, they should be provided with free opportunities to learn new skills to tighten the gap between them and technology and to be able to identify reliable sources of information.

Another important topic that was considered necessary to improve is **communication and information research and storage**. As already mentioned, citizens struggle identifying the correct sources of information and often they do not understand the language used to explain particular topics. For this reason, professionals, institutions, and platforms should provide citizens with clear and simple information, using **terms** that are easily understandable by people who do not have a medical formation. In order to be more independent when facing doubts on health, citizens should be provided with guidelines on where and how to find reliable information that could be disseminated at public places like pharmacies.

Participants also suggested two topics they would like to know more: mental health and pet's wellbeing. For the first, participants suggested to develop specific apps to let them approach the topic. For the second, it was noted that veterinarians could be involved

To solve the issues of data storage, citizen stated that health related personal information should be grouped in a single user-friendly platform, designed to protect individual's privacy and that allows users to access different digital health services just with a single authentication.

That last area of intervention was identified in **infrastructures**. It was noted how certain areas lack of functioning internet connections, limiting the possibilities of accessing online information. Municipalities should also invest in the public transport route, to guarantee a better access to physical services, such as hospitals or doctor's office.



Image 24 - co-creation sessions with Citizens With Low Income And Citizens With Low Digital Skills.

5.14 SPECIFIC CONSIDERATION ON ETHICS AND SOCIAL IMPLICATIONS

With regard to the ethical dimension and social implications of the implementation of (d)HL-oriented measures, the views of the different target groups were explored in relation to two main aspects: gender⁶ and the vulnerable situation of certain groups and individuals. Nevertheless, the topic of privacy and data treatment and protection also

⁶ For the sake of completeness and transparency, it is important to note that the term "gender" is here adopted by making it coincide with biological sex, thus associating female biology with the female gender and male biology with the male gender, in line with the usage adopted by the participants. There is, however, the understanding that the above coincidence is not automatic, and that gender and biological sex represent two distinct categories. Furthermore, it is equally important to emphasise that the research did not focus directly on the LGBTQI+ population by identifying them as a specific target group among the several that were considered. It is therefore acknowledged that the views of LGBTQI+ people on the social and ethical implications connected to gender and vulnerability in relation to the access to health information, communication and services, both digital and traditional, are underrepresented here.



emerged spontaneously from the consultation, albeit addressed more superficially. It will, however, be here reported for completeness. The intention was to investigate the extent to which, according to participants, these variables might affect the level of dHL the ability to seek, find, understand, and appraise health information from electronic resources to make appropriate health decisions or solve a health problem. Participants were invited to express their views starting of course taking into consideration their own subjective experience and positioning but adopting a cross-population perspective.

As will be explained in more detail below, opinions on the **gender** dimension are differentiated and partly contrasting. Some believe that gender is not a variable that has a significant impact on (d)HL, while others have indicated that it can have tangible effects. However, it is interesting to note that, although at a superficial level there is no agreement on whether gender has an impact or not, when delving deeper into the issue, even the majority of those who initially considered the gender dimension as uninfluential, end up recognising how specific social role associated to being a man or women can impact the level of (d)HL.

In general, the **female population is considered more likely to be informed about health and interact with health services**, and therefore to have higher levels HL and dHL than the male population. This is due to the **caring role** associated with women, who are more prone than men to be responsible for the health of the family, particularly their children, and for parents or older relatives. Partly as a result of this role, and thus in response to the need to take responsibility for the health of the family, women are considered more determined, more willing to learn, inform themselves, and acquire new knowledge.

Women are also perceived as **more inclined to pay attention to their own health and well-being**, and therefore more informed and aware. **Men**, on the other contrary, tend to **seek information only in cases of overt necessity**. In conclusion, according to participants, women appear much more focused on prevention and sensitive to symptoms, with a tendency to adopt a proactive approach, while men, on the other hand, seem to act in a reactive mode.

On the other hand, part of the participants associates the **male population with a higher (d)HL**. Some, especially from the older adults' target, claim that particularly in the past, the male figure was the one **responsible of administratively and formally managing the family**. Therefore, even not taking care of their family in a practical sense, it was the

male figure who oversaw the family's health-related needs from a bureaucratic point of view. Based on participants' opinions, this represented and still represent an advantage in that the man, unlike the woman, is more aware of the available traditional and digital services and how to access them.

They also assumed that **men have more free time** than women, who more often than men must balance work and family. This translates into a benefit especially when considering the development and improvement of the digital literacy, insofar as more time can be devoted to learning new skills and competencies. Women, on the other hand, would be disadvantaged because it is more difficult for them to carve out free moments to acquire or further such skills.

An interesting observation is made in relation to the **production of information** connected to women's health. Some participants point out the **androcentric** approach underlying it, the main consequence of which is the circulation of knowledge that overshadows women's issues, treated in a general, approximate manner and thus lacking coherence and consistency.

Therefore, some argue that there is a need for women and population in general that **gender-sensitive information** and education, as well as **digital information and services designed to meet the diverse needs associated with gender** is developed. However, this distinction should not turn into a separation, since there are issues, such as reproductive health and birth control, which are transversal in nature and should not be the sole responsibility of women or men.

Finally, the necessity **not to take the individual's gender for granted when communicating with the patient**, is highlighted. Neutral gender, wherever possible, or substitutes or periphrases that avoid resorting to the masculine and feminine, should be adopted.

Instead, there is unanimity in considering the condition of **vulnerability** as a variable with a crucial impact on (d)HL. However, vulnerability is an umbrella category covering extremely diverse population groups: older adults, people with disabilities, people with cognitive impairments, migrants, refugees, people on low incomes and in economic difficulties, people with a poor level of education, people with scarce or no digital literacy, homeless people, people suffering from alcoholism or substance addiction, sex workers, people living in isolated and rural areas, people with a nomadic lifestyle. It should also be



remembered how vulnerability can take on an intersectional character, insofar as several of the above-mentioned elements can interact with each other and manifest themselves simultaneously in a single individual and/or group.

According to the participants, common to these groups and individuals is the **difficulty in accessing information and using services**, due to multiple, diversified, and sometimes coexisting causes: language barriers; the lack of digital tools, and the absence of the skills to use them in the right way; the lack of the infrastructure to support their use; the difficulty in understanding information due to a language that is too technical or complex; the difficulty or sometimes even the impossibility of using devices and software that have not been developed taking into account impairments and specific characteristics of certain groups, such as the elderly.

There is also agreement that **every individual should have the same rights to health**, regardless of their characteristics or the circumstances in which they live. As a result, solutions and services must be put in place to ensure that no one is left behind and that everyone can benefit **equal opportunities, possibility of agency and self-determination**. Therefore, services should be inclusive, ensuring an **elevated standard of accessibility**. However, if necessary, **targeted responses** should be developed to answer specific characteristics and needs. In doing so, care should be taken to avoid implementing policies that are discriminatory and ghettoizing, even if unintentionally, and thus contribute to replicating mechanisms of marginalization and exclusion. The development of a **patient-centred approach** and the **involvement of the population in the design of solutions and services** are considered two key actions to prevent this to happen.

General agreement is also found regarding the themes of **privacy and data management**. There is a quite diffuse concern about **tracking and profiling**. Many people fear that their data will be intercepted and collected while browsing the net and used for malicious purposes.

Many others are concerned about the possibility that **health care providers**, whether offered by private companies or institution/governments, may **not be able to effectively ensure patient privacy and guarantee the security of collected data**. There is indeed widespread apprehension regarding the risks of data breaches. In addition to this, occasional **lack of trust in institutions' use of population data** is detected among participants.

Finally, the crucial importance of **respecting the basic principles of bioethics** in health and care is mentioned: principles of autonomy (self-determination), beneficence (the greater good of the patient), non-maleficence (not inflicting harm), and justice (the fair distribution of benefits and obligations in society) are mentioned. Moreover, the **respect for human rights** and equality is also emphasized.

6. COMMUNICATION AND DISSEMINATION

In order to give visibility to the co-creation pathways with the different target groups, partners were asked to disseminate the implemented sessions between M10-M16 by resorting to the digital channels of their organization and the official IDEAHL project's ones. To this end, guidance was provided by CE through the D2.1 "Co-creation methodology". The communication also included the launch of the "Social Media Campaign and other online actions" under Task 2.4, aimed at reaching out to the general public, d(HL) experts and Advisory Board Members in the intention to inform them, keep them updated on the development of the (d)HL EU Strategy and gather feedback with respect to it. Information on the campaign and other online actions articulations was as well collected in the Deliverable 2.1 "Co-creation methodology". Under the guidance of the WP leader Consulta Europa, partners CEI and ISRAA collaborated on these tasks.

This chapter aims at providing an overview on the communication and dissemination activities and is divided into two sections. In the first, information is given of the dissemination actions, with details on their structure, organization and the work done by the partners. The second, on the other hand, describes the various steps foreseen and the results obtained by the social media campaign and the other online actions.

6.1 DISSEMINATION OF THE CO-CREATION SESSIONS

As anticipated, the main objective of the dissemination was to **highlight the co-creation sessions** organized by the partners and the targets progressively achieved. Indeed, reaching the target groups and engaging with them was a key step for the realization of the (d)HL EU Strategy. For this reason, to provide clear evidence of this task was important to keep track of the development of one of the IDEAHL project's core activities.

Structure of the dissemination

Dissemination was organized into three key steps, which will be briefly outlined below:

1. **The circulation of information prior to the co-creation event** through partner organizations' social media, websites, and newsletters. To resonate the event, CEI, as project partner in charge of communication, had the task of tagging and re-posting through the official IDEAHL social media accounts. For the same purpose, the official website was constantly updated with publications produced by the partners. In addition to digital channels, partners were also encouraged to use traditional media, such as radio, local press, and television, or circulate printed materials, such as flyers, brochures, and posters.
2. Partners were asked to **collect testimonies of the event being implemented through photos and videos**, and where possible, also live via social media.
3. Finally, **following the event, partners were invited to report on the activity** through posts, leveraging the collected video materials and briefly describing the meeting. As a corollary to this, partners were asked to publicise at least one article about a co-creation session or the pathway in its entirety through their official website and possibly through other digital or traditional channels deemed appropriate and press releases. Alongside this, CEI, supported by CE and ISRAA, emphasised the events through the project's official channels (social media and website) and through the newsletter.

Channels and media adopted for dissemination

The data presented below was collected through the template prepared by ISRAA in order to track the co-creation implemented under T2.3 Traditional "co-creation" activities (see chapter 3-METHODOLOGY).

Social media were the dissemination channels most used by partners in order to spread information on the co-creation sessions, followed by a **diverse set of channels**, specifically WhatsApp, organizations website, organizations newsletter, email, press releases, television.

Face-to-face dissemination ranks among the most frequently adopted non digital channels, followed by **phone calls**. Although partners were not asked to explain the reasons behind the choice of a specific channels, it is interesting to note the quite recurrent use of traditional media alongside digital media. Ad hoc **in-person**

dissemination events also occupy a prominent position. On the other hand, presentations at other agencies and associations, digital meetings and printed materials were used only in isolated cases.

There were **no significant differences in the use of dissemination channels** depending on the target with whom the co-creation was conducted. However, it is interesting to note that, besides digital dissemination, dissemination **via email** was used with some groups of informal caregivers, some women's groups, and experts, probably with the intention of providing them with direct feedback on the findings collected during the co-creation event(s) they were involved in. **Face-to-face communication**, communication via **telephone**, and via **WhatsApp** was mostly used in disseminating the co-creation conducted with caregivers, especially informal ones, people with low income, and healthcare professionals. Face-to-face communication was also adopted to spread information on the sessions conducted with prisoners. Again, in these cases the aim was presumably to provide a direct return to participants as well.

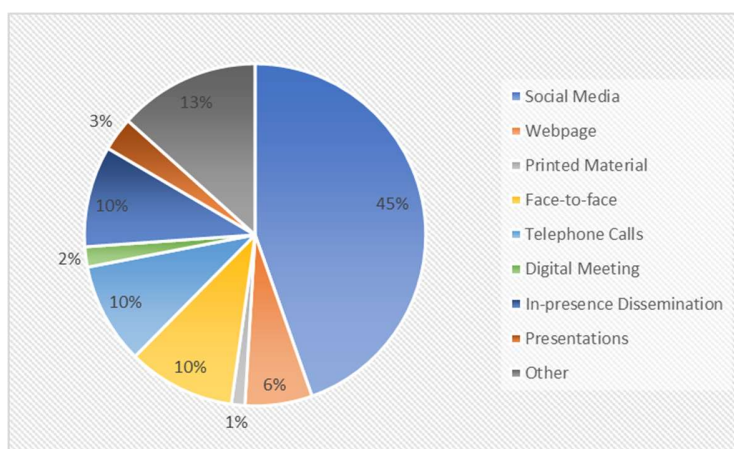


Image 25 – Overview of the percentage of use of dissemination channels.

6.2 SOCIAL MEDIA CAMPAIGN AND OTHER ONLINE ACTIONS

T2.4 Social media campaign (M10-M16) | Lead: CE; all other partners.

A social media campaign has been organised to inform the general public and targeted organisations as well as to get feedback on (d)HL benefits, opportunities and challenges, outputs of IDEAHL co-creation activities and the development of the (d)HL EU Strategy.

Consulta Europa took the lead in organizing this extensive social media campaign, with full support from all IDEAHL partners. Understanding the importance of partner engagement, a meeting was held in May 2022 to provide partners with detailed information about their upcoming tasks. The social media campaign encompassed several strategic actions:

1. A calendar of posts with dedicated hashtags.

The analysis of hashtags within the IDEAHL project offers a crucial avenue for gaining profound insights into the perspectives of EU citizens. This analysis delves into various aspects, including the accessibility of (d)HL initiatives, their associated benefits, as well as identified needs and obstacles. To effectively engage the audience and capture their interest, specific hashtags have been thoughtfully selected. The selection of these key hashtags is guided by the use of the "Sixtrix" hashtag generator. This approach strategically facilitates seamless access for interested users to well-organized online content associated with the IDEAHL project.

These chosen hashtags are aligned with the core themes of the project, encompassing (digital) health literacy, digital tools, health and wellness management, and person-centred care. They serve as valuable conduits for connecting IDEAHL with a broader audience and facilitating meaningful online conversations. The hashtags selected for active use include the following:

- #IDEAHLEU
- #EUhealth
- #digitalhealthliteracy
- #digihealth
- #ehealth
- #healthtech
- #healthliteracy
- #healtheducation
- #healthempowerment
- #healthmanagement
- #Hadea

After the selection of these hashtags, Consulta Europa initiated the planning of potential publications for the social media campaign. These publications were organised



chronologically to establish a posting schedule. The calendar of posts was subsequently shared with IDEAHL project partners through the project's Teams folder. This not only enabled partners to stay informed about upcoming publications but also provided an avenue for feedback and the inclusion of additional posts, if considered.

YEAR			
MONTH	WEEK	DATE	TOPIC
MARCH - APRIL	WEEK 1	✓	Preparation of posts/ -
	WEEK 2	22/03/2023	Get to know IDEAHL
	WEEK 3	27/03/2023	Co-creation of the IDEAHL EU (digital) Health Literacy Strategy
	WEEK 4	25/04/2023	What does (d)HL mean?
MAY	WEEK 1	04/05/2023	DHL graphically explained
		10/05/2023	Tips to access, understand, evaluate, and apply (d)HL
	WEEK 2	12/05/2023	WPs IDEAHL
		15/05/2023	Meet our partners (Reels)
	WEEK 3	17/05/2023	Setting the framework: Main findings (Part 1)
		18/05/2023	Setting the framework: Main findings (Part 2)
		19/05/2023	Setting the framework: Main findings (Part 3)
	WEEK 4	23/05/2023	Main recommendations: gender and inclusion (D4.1)
25/05/2023		Main recommendations: ethics and privacy (D4.1)	
JUNE	WEEK 1	28/05/2023	(d)HL and disease prevention
		02/06/2023	(d)HL and selfcare
		05/06/2023	(d)HL and prevention
		08/06/2023	(d)HL and treatment
	WEEK 2	10/06/2023	Digital health literacy resources
		12/06/2023	IDEAHL expected benefits (white paper)
	WEEK 3	15/06/2023	IDEAHL Strategy (1st draft)
		19/06/2023	IDEAHL project updates
	WEEK 4	21/06/2023	Relevant news and event
	JULY	WEEK 1	24/06/2023
WEEK 2		27/06/2023	Infographics or videos that explain key concepts related to digital health literacy, such as how to evaluate the quality of health information online or how to use digital health services
WEEK 3		03/07/2023	News and updates about the IDEAHL project, such as milestones reached or events attended
WEEK 4		07/07/2023	Q&A sessions with experts in the field of digital health literacy, where followers can ask questions and get personalized advice
AUGUST	WEEK 1	07/08/2023	The role of healthcare providers in promoting digital health literacy
	WEEK 2	10/08/2023	The potential of digital health literacy to reduce healthcare costs
	WEEK 3	12/08/2023	How to evaluate your own digital health literacy level
	WEEK 4	15/08/2023	Overcoming barriers to digital health literacy for marginalized communities
			Collaborations with other organizations or influencers in the health and technology space, to broaden the reach of the message and engage with new audiences.

Image 26 – Calendar of posts.

The social media campaign was conducted across three primary platforms: Instagram, LinkedIn, and Twitter. All campaign posts were shared on these platforms.

The campaign started in March 2022 and followed a carefully planned sequence. Initial posts aimed to provide context for the project and elucidate the significance of digital health literacy. They also delved into the objectives of co-creation and highlighted key outcomes, accompanied by images from partners' co-creation activities. Partners were actively encouraged to share IDEAHL's posts, expanding the reach to a broader audience.



Image 27 – IDEAHL Instagram feed.

For Instagram, in addition to the regular posts, a set of featured stories was created to archive all the stories shared by partners and other contributors. These highlights include:

- **Events:** This section compiles all the stories related to events conducted within the IDEAHL project.
- **Ambassadors:** Posts from project ambassadors have been gathered in this section. It not only showcases their collaborations but also provides visibility to these influencers who have greatly contributed to the project's dissemination.
- **Polls:** All the polls aimed at understanding visitors' perspectives on (d)HL are collected in this highlight.

- Consortium: This highlight introduces the project's consortium, making it easier for visitors to understand IDEAHL's composition.
- About IDEAHL: In this section, key posts and stories about the IDEAHL project have been grouped together. It provides visitors with an overview of the project, helping them understand its mission and activities.



Image 28 – IDEAHL Instagram highlight stories.

In terms of social media analytics:

- On Instagram, a total of 55 posts were published from March 2022 onwards, and the network has garnered 104 followers. The cumulative number of likes for these posts is 858.
- On Twitter, there have been 66 tweets, which received 12,426 views, 189 retweets, and 273 likes. The project's Twitter followers have now reached 89.
- On LinkedIn, 55 posts were published, resulting in 8,675 impressions, 130 reposts, and 503 likes. Currently, 139 individuals follow IDEAHL on this social network.

2. Engagement with social influencers

The objective of this task was to enhance awareness of (d)HL. IDEAHL engaged with social influencers at both EU and national levels to garner support. To amplify the project's mission, collaborations were established with influencers active in the health and wellness sector, particularly those with significant influence on social media platforms, both at international and national/regional levels. Additionally, key figures from the social, political, citizen, and academic domains within the European Union were considered.

Initially, a preliminary list of potential influencers and public figures was compiled at the outset of this task in Month 10. Subsequently, this list was expanded with the assistance of the WP5 Dissemination Leader and project partners. These influencers were approached and kindly requested to voluntarily promote the IDEAHL project by sharing

specific content that would help disseminate the project's objectives and the co-design of its Strategy.

To facilitate this, a set of guidelines was developed and provided to the influencers. These guidelines offered an overview of the project, outlined IDEAHL's expectations for the collaboration, suggested approaches for content creation, conveyed key messages and available resources, and introduced the concept of them becoming "ambassadors" for the project.



Image 29 – Screenshot of the guidelines provided to influencers.

Subsequently, once the influencers expressed their interest in collaborating with IDEAHL, meetings were scheduled to provide them with in-depth insights into the project and to effectively structure these collaborative endeavours. During these meetings, the primary focus was on defining how they could support the dissemination of the project. Various approaches for content creation were discussed and agreed upon, including:

- **Introduce the IDEAHL Project:** Share a concise overview of the IDEAHL project and emphasize its significance in promoting (digital) health literacy throughout Europe.
- **Highlight the Benefits of (d)HL:** Engage in conversations about how (digital) health literacy empowers individuals to make informed health-related decisions, access reliable information, and effectively utilize health technologies.
- **Personal Stories and Experiences:** Share personal anecdotes or narratives related to (digital) health literacy. Personal experiences have a profound impact on audiences, making the topic more relatable and engaging.

- **Encourage Engagement:** Foster audience engagement by posing questions, conducting polls, or hosting interactive sessions related to (digital) health literacy. Encourage followers to share their thoughts, experiences, and tips for enhancing (d)HL. This interactive approach helps build a sense of community and encourages active participation.

These diverse content creation strategies aimed to resonate with various audiences and effectively convey the importance of (digital) health literacy in everyday life. As of the date of this deliverable's submission, six influencers have already made significant contributions to the IDEAHL project, and three additional influencers have expressed their interest in collaborating. These influencers encompass a diverse range of healthcare professionals, researchers, health policy makers, and organisations actively engaged in the field of (digital) health literacy. Below is a brief introduction to the influencers who have already partnered with IDEAHL:

1. **Laura Taboada:** Dermatologist at the University Hospital Complex of Ferrol, Spain.
2. **Nerea Calatayud:** A fourth-year medical student at the Miguel Hernández University of Elche, Spain, and a dedicated scientific communicator.
3. **Irene Piñatel Gil:** A medical student with expertise in dietetics and a content creator, based in Spain.
4. **Søren Valgreen Knudsen:** A doctor, sociologist, and dedicated researcher who also plays a key role in health policy development in Denmark.
5. **Gonzalo Baquero Sanz:** A sixth-year medical student at the University of Seville, Spain, and a prominent healthcare communicator on social media platforms.
6. **We Techcare:** Not-for-profit association founded in 2017 on the conviction that digital technology is an essential tool for improving the situation of vulnerable people.



Image 30 — Pictures of ambassadors of the IDEAHL project.

These influencers have lent their expertise, experiences, and networks to enhance IDEAHL's mission in promoting (d)HL. Their contributions have significantly amplified the project's reach and impact. These contributions encompassed a variety of forms, including video content, interactive polls in stories, informative publications, and actively sharing IDEAHL's content across their social media channels.

Among the noteworthy contributions of these influencers are the impactful publications such as Gonzalo Baquero's video elucidating the significance of (digital) health literacy and providing valuable context about the IDEAHL project. Additionally, Laura Taboada and Nerea Calatayud have shared insightful stories that engage their audiences by robing

their understanding of (digital) health literacy and underscoring the importance of initiatives like IDEAHL.

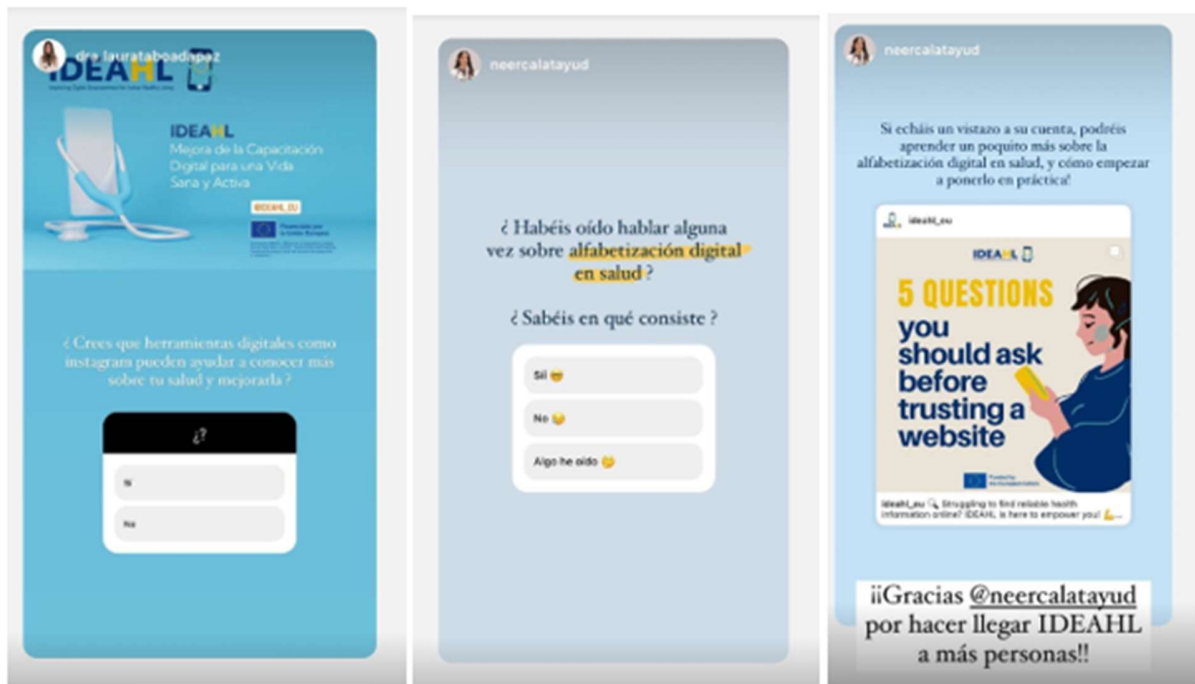


Image 31 – Screenshots of the contributions made by the IDEAHL ambassadors.

The influencers who have collaborated with IDEAHL will be prominently featured on the project's website within the "Ambassadors" section. This recognition not only provides these individuals with increased visibility but also allows website visitors to become acquainted with them and their contributions to the project.

4. Small online co-creation exercises

This task involves the implementation of small co-creation exercises led by ISRAA and CE to engage EU citizens and practitioners and gather specific input on the drafts of the EU Strategy. These additional co-creation activities and discussions have been conducted alongside the main co-creation phase to supplement the feedback collected. On one side, polls and interactive discussions were ensured in the framework of the social media campaign, as explained above. Their aim was to engage the general public. On the other side, the project has focused on extra co-creation exercises involving experts



and practitioners to provide feedback for the Strategy developed by the project Coordinator under Task 2.5. Here are the activities organised:

- An online co-creation exercise was conducted with (d)HL experts and policymakers as part of Consulta Europa's co-creation exercises. This session took place on July 4, 2024, where the initial draft of the IDEAHL EU (d)HL Strategy was presented and discussed. Participants were provided with the document in advance, allowing them to offer written feedback. This valuable input played a crucial role in refining the Strategy.
- A second co-creation exercise is scheduled for September 20, 2023, with the participation of (d)HL experts, policymakers, and external Advisory Board (AB) members. Ethics, gender, and social inclusion experts from WP4 and representatives have also been invited to gather feedback on the gender, inclusion, ethics, and privacy toolkit, a critical component of the Strategy. The primary goal of this second workshop is to present the nearly final version of the deliverable and gather conclusive feedback from (d)HL experts worldwide and within the EU. The aim is to achieve a consensus on the EU (d)HL Strategy.

In addition to these online co-creation sessions, specific written content or sections of the EU Strategy deliverable have been shared with a dedicated panel of (d)HL experts including the WP1 champions and national/regional policymakers associated with project partner organisations. This collaborative approach ensures a comprehensive and well-informed Strategy.

2. EU survey

The primary aim of the EU Survey is to collect direct feedback from practitioners and a wide array of stakeholders concerning an initial rendition of the Strategy. While preparations for this survey have been underway, its official launch has been deferred beyond the period covered by this deliverable. This decision was made following meticulous deliberation, with full endorsement from the Coordination team. The rationale behind this delay is to ensure that the survey aligns seamlessly with the refined second version of the IDEAHL Strategy (issued in September 2023), thereby optimizing its effectiveness.

The forthcoming survey is set to debut in mid-September 2023 and will be directed towards experts and healthcare professionals. This target demographic holds particular

significance within the context of the project, as they possess the practical insights and capabilities needed to implement the Strategy effectively. Their input is, therefore, immensely valuable in shaping the Strategy to meet the complex and evolving demands of the healthcare landscape.

This survey will encompass a concise introduction to the project, elucidating its fundamental components and the various levels of the Strategy. The survey questions will be carefully designed to zoom in on specific areas that may require enhancement. The insights garnered through this survey will be pivotal in sculpting the final iteration of the Strategy, which is earmarked for submission in October 2023. This collaborative approach, involving experts and healthcare professionals, ensures that the Strategy is tailor-made to align seamlessly with the unique needs and expectations of its intended audience. Your active participation in this process is not only greatly appreciated but also instrumental in elevating the quality and impact of the IDEAHL Strategy.

7. CONCLUSIONS AND FUTURE PROSPECTS

The investigation conducted with the population on the subject of d(HL) enabled 1,434 people to be reached out of an attended amount of 1,322. The impossibility of satisfying the expected number which occurred with specific groups, is to be considered a potential risk intrinsic in the research process and in the circumstances and contingencies of the fieldwork.

Therefore, the large number of participants and the plurality of target groups explored, permit to state that the co-creation process proved to be successful and that the specific objective set by the IDEAHL project in relation to it has been achieved.

The quality of the data collected also contributed to the success of the action. The topic of (d)HL has been dealt with comprehensively and extensively with all the target groups. The information and indications gathered can therefore be judged representative enough of the population in its complexity.

An overview of the most relevant findings for each of the target groups involved in the co-creation process is presented below.



POLICY MAKERS

The co-creation activities with policy makers have shed light on different crucial aspects regarding decision-making processes, communication activities and stakeholder engagement, providing the following suggestions:

- Keep decision-making processes agile and rapid in the healthcare sector.
- Take more cost-effective and efficient decisions, give more centrality to the assessment of the maturity level of existing digital health solutions and to the importance of impact measurement in pilot projects, to help gather relevant evidence to support the decision-making process.
- Develop guidelines on how to better include marginalised communities.
- Keep supporting the development of analogue solutions as well, not only invest in high-tech digital solutions.
- Improve and tailor communication on digital health literacy towards the population and hire better qualified staff that can perform communication tasks in the public entities.
- Collaborate to support the development of a one-stop-shop platform on digital health to improve access to quality information on digital health.

DIGITAL LITERACY AND DIGITAL HEALTH EXPERTS

Among the many valuable inputs provided by digital literacy and digital health experts, their focus has revolved around the following suggestions:

- Establish physical helpdesks to give support to the public, especially to people with low digital skills or low access to digital tools.
- Reinforce the delivery of HL programs in schools and increase the outreach of patients' organisations and community networks to give and receive mutual support.
- Provide more occasions for stakeholders to contribute to the design, implementation, and validation of digital health solutions.
- Provide the public with more open-source software and increase user-friendly adaptations of digital health services.
- As concerns the EU (d)HL Strategy, it should adopt a cross-cultural validation approach, able to ensure that the necessary adaptations to the contextual differences among countries can be made in a positive way.



HEALTH PROFESSIONALS

The co-creation activities with Health Professionals were fundamental to shed a light on the following barriers and areas of improvement:

- Even if this target group possesses high levels of (d)HL skills, it still faces barriers, mostly related to the lack of infrastructures and the lack of training and courses for both professionals and patients/clients. For this reason, economical investments should be directed to better both technological and physical infrastructures and to grant citizens and professionals access to education to better their (d)HL skills.
- Employers should take into account the learning needs of professionals and adapt their working hours to grant them the possibility to access courses and training.
- Information should be standardized and accessible in one single platform for both citizens and professionals to allow a better doctors/patients relationship.

HEALTHCARE STUDENTS

The activities with students were fundamental in underling needs and perceptions of this category:

- Students asked to be provided with a better education on (d)HL starting from universities years, and to expand these courses also to management level, to fill the existing gaps.
- They also noted how accessibility to information is key. It should be granted to all citizens, despite their socio-cultural status, their characteristics, and their level of (d)HL. Information should also be provided in simple and clear language.
- Not only students, but also professionals should be able to look for relatable information on platforms that provide standardized information with research-based studies.

CAREGIVERS

On the one side, formal caregivers affirmed that to improve dHL and digital health it is important to:

- Increase the training opportunities for professionals to improve their digital literacy, following a hands-on rather than a theoretical approach to learning. Provide formal caregivers with further materials, such as guides, manuals, and support services to help them deal with digital health services.
- be involved in the design and development of digital health solutions.



- Be provided with updated software and higher quality technological infrastructure.
- On the other, informal caregivers focused their interventions on the following priorities:
- the simplification of the access procedures to personal health data and information, besides the need to integrate the different healthcare systems databases.
 - the organisation of more national awareness campaigns where to obtain information on digital health services and on the access to them.
 - The improvement of communication towards them, by using low-tech solutions as well, flyers, written guides on how to improve their dHL and improve their access to digital health.
 - The establishment of helpdesks led by the Municipalities to help the population access digital health services, while also improving broadband connection and offering free internet points.
 - The need to improve communication and trust between patients and doctors.

FAMILIES

Families and families of people with chronic diseases, offered an insight on difficulties they face in their role of informal caregivers, suggesting the following interventions from institutions:

- Families should be provided with better support and training when dealing with online health services, being it a crucial part of their everyday life, especially when taking care of their beloved. Institutions should take into consideration the level of digital skills of people that are informal caregivers and offer them the possibility to access training.
- Technological and physical infrastructure should be better and improved, to grant access to healthcare premises and online services to everyone, making healthcare finally universal.
- Online services should be developed to be user friendly, with clear interfaces and simple language, to allow everyone to access information.

PEOPLE WITH DISABILITIES

People with disabilities generally emphasised the need to change approach to the communication of health-related information and on the need to be more inclusive in the co-design and development phases of digital solutions. Overall, they stressed the importance of:



- Maintaining and developing analogue solutions because digital solutions are not universal and accessible for all.
- Improving the user-friendliness and accessibility of online videos and videocalls by offering subtitling or interpretation options.
- Guaranteeing broader Internet connection also in isolated areas and reinforcing the use of low-tech solutions to communicate with the healthcare services, such as through text messages.
- Increasing their own engagement in the co-design of digital solutions and in the co-design of health information.

OLDER ADULTS

The older population clearly highlighted how technology and the digital environment to manage and support their health can represent a critical issue. Below are the most relevant elements that emerged:

- The health-related information available online but also that spread via traditional media is too abundant, and often conflicting, thus resulting confusing and scarcely reliable.
- The health-related communication and information should be improved by simplifying the language adopted and avoiding as much as possible overly technical and English language terminology.
- Procedure to access digital services should be simplified reducing the steps required to use them, structuring clear graphical interfaces, and decreasing the frequency of programmes updates and modifications.
- The doctor-patient relationship should be improved by putting people back at the centre, not just bureaucracy, by training doctors to listen to their patients, and by equipping them with the skills to guide and support older citizens in properly using technology to manage their health.

WOMEN

Women highlighted critical issues especially in relation to the reliability of online information sources and the need to improve the communication and the quality of the information on women's health. Below are some particularly significant findings:

- The health-related information that is present online is too abundant and it is difficult to verify its validity and reliability. Validation and certification systems should be developed by the institutions responsible for public health.



- Social media, streaming platforms, podcasts (...) should be used by the institutions responsible for health to promote health-related information and awareness-raising campaigns in order to reach a broader population. Furthermore, communication and information targeted according to the specific needs and characteristics of certain groups (e.g. related to language, or in case of the presence of disabilities...) should be developed.
- Health personnel should be systematically trained in the use of technology and digital services for health management to guide and support patients.
- The information on women's health should be improved in terms of quality, providing more accurate, thorough and consistent information. Apps, web platforms and services devoted exclusively to feminine health would be very useful to this end.

CHILDREN

The main aspects emerged from the co-creation with children can be summarised as follows:

- Children still struggle to understand the concept of health and its branches, but they can distinguish between healthy and unhealthy behaviours.
- The institution that they recognise to be central for their learning is the school. At school and at home, the use of digital tools is widespread, therefore children acquire a very good command in using them at a young age.

MIGRANTS

There are many elements brought to the table by the migrant population involved in the co-creation process. Specifically:

- Language represents an obstacle to the understanding of information, both online and via traditional media, to the possibility of being effectively reached by education and awareness-raising campaigns, but also to the doctor-patient relationship. The use of the mother tongue in the information/communication channels of the host countries would be a valuable help, as would the presence of a language mediator or other forms of facilitation.
- Equally difficult is the understanding of the organisation and functioning of the host country's healthcare system, which hurts the ability to properly access and use



healthcare services (online and traditional). Training and accurate information from institutions would be a precious support.

- The digital divide and the gap in the HL that often affect this segment of the population should be bridged with training provided by the institutions.
- Doctors should be trained and made more knowledgeable on core elements of migrants' cultures.
- More attention should be paid to the health impact of being a migrant and/or refugee, which, by causing stress, often leads to the adoption of unhealthy habits such as alcohol abuse, and smoking. Developing *ad hoc* campaigns to make migrants more aware of the risks associated to these habits would be supportive.

PRISONERS

Prisoners have not the possibility to use the Internet, therefore their access to health-related information, communication and services via this media is completely limited. For this reason, the advice provided regarded alternative communication and information channels:

- The use of offline devices could support the improvement and enhancement of their HL and managing their overall health and wellbeing, for example through the development of games on health-related arguments.
- In-house radio or power point presentations could be adopted to diffuse health-related information, to deepen themes they are interested in, such as sport, well-being, healthy lifestyles and habits, and to remain updated on current topics concerning health and scientific progress in the medical field.
- In order to dwell with the stressful condition derived from living in a prison environment, they would like to have access to meditation and relaxation practices.

CITIZENS WITH LOW INCOME AND CITIZENS WITH LOW DIGITAL SKILLS

- Provide training to these categories of citizens in order to allow them access digital health services and information.
- Make sure information is provided with clear and simple language, making it understandable and accessible to everyone, despite their educational level.
- Individuals' health information should be stored in a system easily accessible by everyone, in order to simplify both access to technology and to online services.
- Better technological and physical infrastructure to make access to healthcare really universal.



With the intention of drawing conclusions from the extensive co-creation process with the different target groups and particularly in view of future prospects, it is finally interesting to highlight the elements which seem to emerge as key factors due to their cross-cutting nature and that can be identified as those to which particular attention should be paid in the EU (d)HL Strategy:

- Most participants use the internet to search for information on their health, well-being, and health issues, and are aware of the ongoing progressive digitalisation of health. They are conscious of its impact on the population group they belong to (e.g., older people, women, migrants) and on the population at large. The necessity to be facilitated in accessing and using digital information and services is therefore transversally highlighted.
- While the digitalisation of health does not seem to be an obstacle for the younger population, mainly due to its greater digital literacy, it is unanimity that digitalisation can act as a barrier for vulnerable groups (which can also include younger generations). The reasons are plural and differentiated: both individual such as the non-availability of devices, the lack of competence in using them, or the absence of familiarity with the digital environment and infrastructural- for example, the lack of Internet coverage in the rural and remote areas. In addition to this, participants recognize that the HL of these groups is also threatened, particularly when it comes to populations with low schooling or with regard to migrants, who may face linguistic and cultural barriers.
- Based on what is above, there is a shared conviction that institutional-driven policies and initiatives should be developed to foster and ensure the accessibility to health-related information and services, both traditional and online by taking into account to the diverse needs and habits of a composed population in order for them to become more inclusive. With the same intention, vulnerable population involvement in the development phase of digital solutions and programmes is also mentioned.
- The excessive amount and the plurality of online health information are recognised as a cross-sectional obstacle since it prevents assessing its reliability, leading to the digital environment in its complexity being judged as ambiguous and scarcely trustworthy.
- Participants state that institutions should develop accreditation systems for online health information, in order to support the population in identifying reliable

resources. Alternatively, or in addition to this, the necessity of user-friendly applications and platforms providing citizens with comprehensible, coherent, and comprehensive information on health and healthcare services is evidenced.

- According to the participants, governments should systematically deliver educational and information opportunities to the population, tailored on the specific characteristics and necessity of the various groups, this way sustaining empowerment, autonomy, and self-determination.
- Besides this, health personnel, first and foremost GPs (who remains the key interlocutors of citizens), should be trained to respond to the needs of a differentiated population and to guide it in dealing with digital health in order to favour (d)HL. Therefore, they must be digitally literate and competent about the online available opportunities and services.