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EDUCATIONAL & TRAINING ACTIVITIES

ANALYTICAL REPORT 2

eCAN

Strengthening eHealth for Cancer Prevention & Care

DELIVERABLE 8.4

Outline

Deliverable purpose

This deliverable contains the activities of Task 8.3 and Task 8.4, describing the development and implementation of educational and training activities within the eCAN Joint Action (JA), designed to strengthen the digital literacy and telehealth proficiency of healthcare professionals (HCPs), patients, and caregivers involved in cancer care. The program, developed under Work Package 8 (WP8), focused on addressing critical gaps in the knowledge and skills required to utilize teleconsultation and telemonitoring technologies effectively.

By delivering tailored training materials that encompass both technical skills and psychosocial support, the program aimed to empower all stakeholders to engage confidently in remote healthcare environments. The educational activities covered a range of essential topics, including patient rights, communication in virtual settings, shared decision-making, and emotional support in telemedicine.

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1. Introduction

The COVID-19 pandemic significantly accelerated the adoption of digital healthcare solutions, including telehealth and telemedicine, across the globe. While healthcare technologies existed before the pandemic, they were largely seen as complementary solutions, used intermittently to address gaps in access to healthcare. However, the sudden shift to remote healthcare delivery—prompted by lockdowns and social distancing measures—brought telehealth to the forefront of patient care, revealing disparities in digital literacy and preparedness among HCPs, patients, and caregivers (Smith, et. al, 2019; Carrillo de Albornoz,et. al, 2021).

Many healthcare systems have been technologically prepared to adopt telehealth solutions, yet the pandemic exposed a critical gap: primary stakeholders, both patients and clinicians, lack the skills and training, necessary to fully utilize these technologies. This gap hindered the effective use of telehealth tools, limiting their potential impact. The pandemic underscored the importance of not only having the technological infrastructure in place but also ensuring that all stakeholders possess the knowledge and confidence to use these tools effectively. Addressing these gaps is crucial to improve the quality of care and empower patients and HCPs in digital healthcare environments (Layfield, et. al, 2020; Griffith, et. al, 2022).

The eCAN JA is a European initiative designed to strengthen telemedicine and remote monitoring systems for cancer prevention and care. Its primary goal is to harmonize telemedicine regulations, explore the efficacy of teleconsultation and telemonitoring technologies, and create a foundation for healthcare systems to respond more effectively to crises. With cancer cases projected to increase by 77% by 2050 in comparison with 20222, the need for digital solutions in cancer care is more urgent than ever. In this context, the educational and training activities, described in the current deliverable (D8.4), form a key component of this effort.

Specifically, through Work Package 8 (WP8), the eCAN JA addresses the knowledge gaps among HCPs, informal caregivers, and cancer patients by equipping them with the necessary skills to confidently engage with telehealth solutions. The activities outlined in this deliverable (D8.4) -as well as in a preliminary stage at D8.3- are designed to address these gaps through a training needs assessment and educational content development (T8.3), as well as their practical implementation in the framework of a comprehensive and inclusive training programme (T8.4). The primary objective has been to empower all key stakeholders—

including clinicians, patients, and caregivers—by equipping them with the essential skills to competently understand, trust, and effectively use telehealth technologies. By fostering technological literacy and confidence, the eCAN JA training programme aims to integrate telehealth seamlessly into the cancer care continuum, enabling stakeholders to make more informed decisions and build trust in digital healthcare solutions. This empowerment will not only enhance collaboration and communication among the involved stakeholders, but also contribute to improved outcomes, increased engagement, and a more patient-centred approach in cancer care.

1.1. Educational and Training Activities

The rapid evolution of healthcare has placed digital health technologies at the forefront of both preventive care and the management of chronic diseases, particularly in oncology. Tools such as teleconsultation and telemonitoring offer significant potential to enhance care continuity, especially for patients in remote or underserved regions. However, despite the growing availability of these technologies, their adoption remains limited due to disparities in digital literacy and a lack of standardized training for key stakeholders (Smith, et. al, 2019; West, et. al, 2022).

The COVID-19 pandemic further exposed and amplified these disparities. While telehealth technologies were rapidly deployed to maintain healthcare continuity, many HCPs lacked sufficient training to use these tools effectively, resulting in inconsistent usage patterns (O'Connor et al., 2021). At the same time, the digital divide disproportionately affected older adults, individuals in rural communities, and those from lower socioeconomic backgrounds, who struggled to access and use digital health platforms (Nouri et al., 2020). These issues underscore the urgent need for comprehensive, culturally sensitive training programs that cater to the unique needs of diverse stakeholder groups, including healthcare providers, patients, and caregivers.

To address these challenges, the eCAN JA has set the development of targeted educational materials and training activities as a core objective. Within WP8, and particularly through T8.3 and T8.4, tailored training resources are being created to bridge existing gaps in knowledge and digital literacy. These materials are designed to empower all key stakeholders, ensuring that HCPs, patients, and caregivers are not only proficient in using telehealth technologies, but are also equipped to take active roles in the healthcare process. This

empowerment is key to fostering trust, improving decision-making, and ultimately, enhancing the quality of care (Fitzpatrick, 2023).

1.2. Enhancing Capacities and Competence through Tailored Training

Effective training is not only about mastering technology, but also about building skills and competence in the use of telehealth tools. For HCPs, telehealth is essential in maintaining high standards of care, especially during public health crises, like the COVID-19 pandemic. However, gaps in understanding and competency often lead to reluctance in adopting these tools. A significant number of HCPs have not received adequate training, which limits their ability to fully integrate telemedicine into their daily practices (Waseh, & Dicker, 2019).

From the patients and caregivers' perspectives, the ability to navigate telehealth platforms, understand medical information, and engage in shared decision-making is crucial for improving healthcare outcomes. Yet, digital literacy disparities are pronounced, especially among older adults and those living in remote or underserved areas. The lack of access to telehealth tools, coupled with limited knowledge on how to use them, further marginalizes these groups, reducing their ability to participate in their own care (Ramachandran, 2023).

The eCAN JA addresses these issues by delivering comprehensive educational activities under WP8, with a focus on user empowerment. More specifically, T8.3 emphasizes on the creation of educational guidelines on topics such as telehealth usage, patient rights, shared decision-making, and effective communication in healthcare settings. These resources are designed to promote a holistic approach to cancer care, positioning telemedicine as an integral and trusted component of the patient's healthcare experience. Through this training, HCPs, patients, and caregivers are better prepared to confidently adopt telehealth technologies, fostering a more collaborative, patient-centred healthcare system.

1.3. The importance of digital preparedness

The pandemic served as a pivotal moment for healthcare systems globally, emphasizing the importance of digital preparedness. While many institutions rapidly adopted telehealth platforms, the swift implementation often outpaced the digital readiness of HCPs and patients. Studies, such as those by Smith et al. (2022), found that both HCPs and patients frequently expressed dissatisfaction with telemedicine due to a lack of clear guidelines, adequate training, and proper support systems. This underscores the need for structured, well-supported educational initiatives, focused on digital skills acquisition.

The digital training platforms explored under T8.4 address this need by providing interactive learning tools for HCPs, cancer patients and their caregivers. Hosted on online, open-access platforms like the OpenLearn4Health and the e-oncologia, the eCAN JA training curriculum includes user-friendly manuals, interactive content, and real-world applications, tips & tricks for telehealth technologies and virtual visits. Additionally, hands-on workshops with trainers and small-scale real-life testing, give participants practical experience and knowledge for empowerment and engagement with telehealth solutions and digital health tools, ensuring they can confidently incorporate telemedicine into their clinical practices and personal healthcare management.

1.4. Building Trust in Telehealth

To avoid this in the future, it is imperative that a more formal feedback loop is established. Research centres should be required to provide regular updates on their implementation of the data management plan and participate in structured discussions to address any challenges or uncertainties. This will ensure that all centres are operating on the same page and following consistent, compliant procedures.

1.5 Supporting the Digital Transformation of Cancer Care

As healthcare systems across Europe undergo digital transformation, telehealth solutions are increasingly recognized as essential for advancing cancer care. The eCAN JA, through its comprehensive efforts in WP8, plays a pivotal role in this transformation. By developing and implementing tailored training initiatives, the eCAN JA is ensuring that HCPs, patients, and caregivers are equipped to confidently and effectively engage with digital tools, thereby enhancing their role in the cancer care continuum.

These efforts align with the broader goals of the EU Digital Strategy, which seeks to accelerate the digitalization of healthcare, foster cross-border collaboration, and ensure equitable access to high-quality cancer care across Europe. By addressing gaps in digital literacy and bridging the digital divide, the eCAN JA is not only facilitating the integration of telemedicine, but also contributing to the creation of a more connected, resilient, and inclusive healthcare system throughout Europe.

Building on the aforementioned aspects that outline how the training program aligns with the broader goals and vision of the eCAN JA, as well as its intended purpose, the following sections of the current deliverable (D8.4) provide an overview of the methodology used in

developing the educational materials (section 2), implementing the training activities (section 3), and evaluating their effectiveness (section 4). Additionally, these sections highlight the key outcomes and the next steps for the training curriculum.

2. Methodology

This chapter outlines the structured methodological approach employed in conducting the educational and training activities under T8.3 & T8.4 of the eCAN JA. The proper selection of methods and tools has been critical to developing tailored educational materials for each targeted stakeholder group, HCPs, patients, and caregivers, as well as to designing training activities, to navigate them into the increasing digital landscape of healthcare delivery through telehealth and telemedicine. As telemedicine becomes an integral part of healthcare, particularly in the cancer care domain, it is essential to address all the existing gaps -both technical and non-technical- in knowledge, skills, and attitudes among these stakeholders. This ensures not only engagement but also trust and proficiency in accepting, adopting and using digital health tools to provide or receive quality care (Kassam, et. al, 2023; Ramachandran, 2023).

The following section details the Training Needs Assessment (TNA) process, which served as the foundation for developing the educational materials for the training programme of the eCAN JA, aimed at enhancing digital literacy, telehealth proficiency, and patient empowerment. The methodology includes a structured outline of the stakeholder engagement process, the tools and data collection approaches utilized, and the key insights gathered that shaped the final version of educational content and training curriculum.

2.1 Overview of the Training Needs Assessment process

The TNA, conducted in the framework of T8.3, has been one of the cornerstone activities for the training programme design. The TNA, as described in the description of actions (DoA) of the eCAN JA, was adopted as a core methodological vehicle to help the task leading team (AUTH, 3rd RHA) identify the gaps in knowledge, skills, and attitudes related to telehealth technologies among three key stakeholder groups: HCPs, patients, and their caregivers.

The needs assessment process was conducted in two main phases: A. scoping reviews of the existing literature and B. stakeholder engagement and validation of the results derived in the first phase. This comprehensive approach allowed the project team to gather significant insights from both literature and stakeholders' real-life experiences to design educational interventions that targeted the specific needs of each group, ensuring the development of effective training materials that addressed both practical (digital skills) and psychosocial

(communication, empathy, other soft skills and patient rights) challenges in telehealth adoption.

This means that a lot of legal and ethical issues need to be faced to ensure legal security for the patients offering a correct telemedicine services. This paves the way for a for the aim of the deliverable 6.2 of WP6 in the eCAN JA for defining guidelines and recommendations about all the legal and ethical issues in telemedicine.

In this regard a technical approach has been based on the evidences producted in the WP6 activities and reported in the previous paragraph. This addressed the focus of the literature analysis on two main topics:

1) The role of anonymised data in secondary use-based observational research
2) The impact of the digital divide on patients of a telemedicine service in terms of their ability to use the technological tools technology and the costs involved in obtaining them.

Starting from these two main topics, a systematic review of the literature in collaboration with two methodologists of Milan University Bicocca was planned in January 2024 and ended in June 2024. From this review a series of paper have been extracted and analyzed for the production of the guidelines.

2.1.1 Stakeholder engagement

Referring to stakeholder engagement, it is important to highlight that the active involvement of the targeted population groups in crucial phases for the curriculum design & testing, has been a central component of the entire TNA process. Considering that the educational materials needed to reflect the real-world experiences and challenges of using telemedicine in cancer care, a wide range of stakeholders was involved. The primary stakeholders, as identified by the eCAN JA and the T8.1 activities, engaged in this process have been:

- Healthcare Professionals, including oncologists, nurses, psychologists, social workers, and other professionals, i.e. health/tech providers, who are involved in (non)telemedicine-based cancer care delivery.
- Cancer patients, especially those who have no previous experience in teleconsultation and telemonitoring programs, whose first-hand views and concerns, regarding remote care provided critical insights for the identification of the training needs.

- Caregivers, primarily informal (relatives and family members), who play an essential role in supporting cancer patients in managing their health care. Similarly, the focus was on people who had no previous experience in telehealth environments.

The engagement process has been multi-faceted, combining the training needs and concerns raised from the piloting activities of the eCAN JA (WP5), and how they were addressed through the development of the training materials for the pilots (D8.3). Also as group discussions with stakeholder representatives and the project team to co-validate the findings of the literature and refine the proposed training curriculum, ensuring a rich and comprehensive set of educational content (T8.3).

Indeed, a key activity of stakeholder engagement in the TNA process was a co-validation session held in Thessaloniki in June 2024, which brought together a diverse range of participants, including patient experts, clinicians, psychologists, and engineers. The collaborative nature of this session allowed stakeholders to discuss the practical aspects and the thematic areas of the proposed training programme, regarding the empowerment in using telehealth technologies, leading to its refinement and ensuring that the educational materials address both technical and psychosocial needs (see section 3.3 & 4.1)

2.2 Tools and Approaches Used for the Training Needs Assessment

To gather comprehensive and reliable data, the task leading team (AUTH, 3rd RHA), exploited multiple tools and methods to conduct the TNA and a gap analysis. These tools were selected to ensure that the data collected would cover a broad spectrum of experiences, knowledge levels, and challenges faced by the different stakeholder groups involved in telehealth and cancer care..

2.2.1 Scoping reviews

The initial step in the TNA journey involved conducting two scoping literature reviews to identify gaps in telehealth education and skill levels among HCPs, patients, and caregivers. The reviews, conducted in parallel -with the active contribution of the task leaders (AUTH, 3rd RHA) and all the involved entities in T8.3 (CERTH, CUT, PASYKAF, ELLOK, GOEG)-, involved in-depth searching in academic databases such as PubMed, Google Scholar, MEDLINE, ScienceDirect, Wiley, JMIR, PsychINFO, PsychARTICLES and SAGE.

Implementing two parallel scoping reviews—one for HCPs and another for non-professionals such as patients and caregivers—allowed for a more tailored analysis of each group's unique

needs. Professionals often prioritize clinical accuracy, evidence-based practices, and the usability of tools in a physical or virtual healthcare setting, while non-professionals tend to focus on ease of understanding, emotional support, and accessibility. By separating the reviews, it became easier to capture these distinct perspectives, ensuring that the design of materials and training interventions will address the specific priorities of each group.

Additionally, parallel reviews help bridge the gap between the expectations of professionals and patients/caregivers. HCPs may be more concerned with regulatory compliance and telehealth system integration, whereas patients and caregivers prioritize user-friendliness and empathetic communication. Identifying these differences early on could enable the development of educational content that balance the needs of both groups and inform both groups about the others' needs and concerns (Cunha, et. al, 2023). This approach not only fosters a more inclusive and participatory design process but also improves the overall effectiveness of the training programme, leading to improved engagement and empowerment for both healthcare providers and those receiving or supporting care (cancer patients and caregivers).

The scoping reviews, marking the beginning of the core TNA phase, commenced in February 2024 after two months of preparatory work led by task leaders (AUTH and 3rd RHA) (Figure 1). During this preparatory phase, databases were identified, keywords defined, and inclusion/exclusion criteria were established. The proposed work plan was presented at WP8 monthly meetings, where partners provided feedback and suggestions for improvement. By the end of this period, the final database search was initiated, incorporating the refined keywords and selection criteria. AUTH conducted the initial database search and performed a rapid screening of papers that did not meet the specified criteria. In February 2024, two separate lists—one for HCPs and one for patients/caregivers—were compiled and distributed to all T8.3 partners for further review, inclusion/exclusion decisions, and subsequent data extraction.

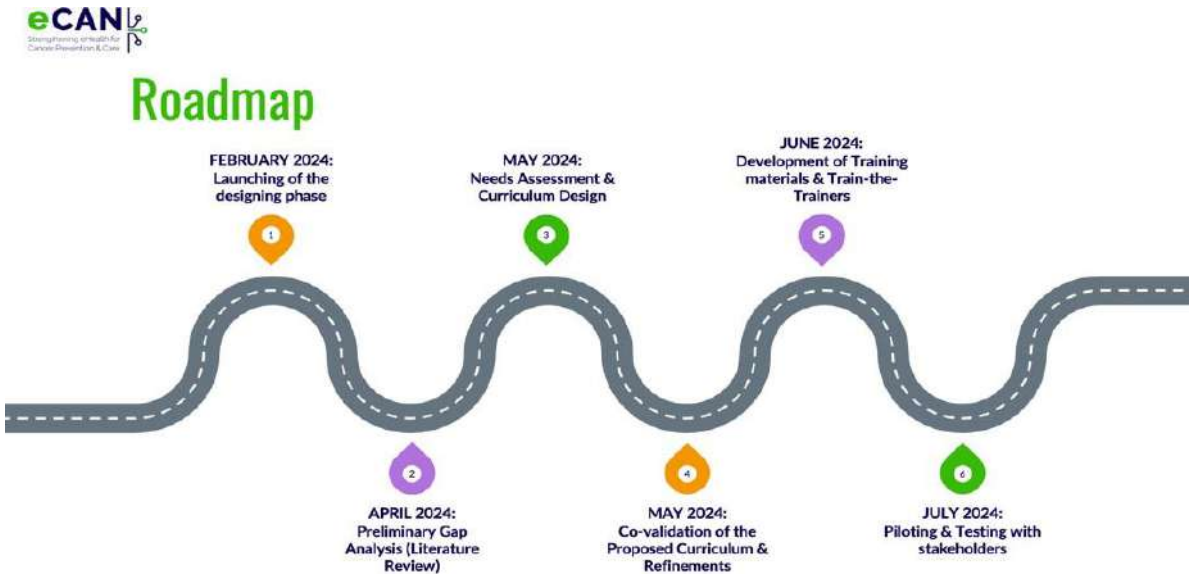


Figure 1. Training programme development roadmap

The selected papers were reviewed by two independent reviewers under a blind review process to ensure objectivity. AUTH consistently acted as the second reviewer, while a third reviewer from AUTH/CERTH resolved any disagreements between the two primary reviewers. This approach ensured rigor and consistency throughout the review process.

2.2.2 Inclusion and exclusion criteria

The final list of inclusion/exclusion criteria as shaped and agreed among the T8.3 involved partners for both scoping reviews, is listed below:

To Include:

- **Time Period**: Studies conducted in the last decade (2014-2024), with special attention to systematic reviews including papers post-2010.
- **Peer-reviewed Journals**: Only studies published in peer-reviewed journals are considered.
- **Language**: Studies published in the English language.
- **Types of Studies**: Research articles, systematic reviews, meta-analyses, randomized controlled trials (RCTs), controlled trials, cohort studies, and qualitative studies.
- **Geographic Focus**: Studies primarily conducted in the EU (reflecting its cultural, socio-economic context, and healthcare systems) but not limited to the region (in case they included a best practice example).
- **Technology Focus**: Studies addressing telehealth technologies, telemedicine, remote monitoring, or virtual consultations.

- **Participants**: Studies involving patients, caregivers, or HCPs as participants.
- **Content Focus**: Studies focusing on patient empowerment, training needs assessments, or educational materials related to telehealth technologies. This includes outcomes such as patient knowledge, skills, or satisfaction.
- **Healthcare Professionals**: Studies examining training and educational needs for clinicians, especially related to knowledge-sharing through telehealth solutions.
- **Communication Programs**: Studies evaluating communication training programs for doctor-to-patient interactions via telehealth solutions.

To Exclude:

- **Non-Peer-Reviewed**: Studies not published in peer-reviewed journals.
- **Technical Focus Only**: Studies that solely focus on the technical aspects of telehealth technologies without addressing patient empowerment or training needs.
- **Non-English Language**: Studies not published in English unless they provide essential insights.
- **Publication Types**: Opinion articles, editorials, conference abstracts, and letters to the editor.
- **Methodological Weaknesses**: Studies with small sample sizes or lacking methodological rigor.

The screening form (Figure 2) used in the review process included the following key information:

- **Decision**: Options for reviewers to decide whether to include, exclude, unsure include, or unsure exclude the paper.
- **Reference Number (RN)**: A unique identifier for tracking.
- **Database (DB)**: The source database from which the study was retrieved.
- **Year of Publication (YR)**: The year the study was published.
- **Unique Identifier (UI):** This included a DOI or URL link for easy access to the study.
- **Title (TI):** The title of the study.
- **Source (SO)**: The name of the journal or publication in which the study was published.
- **Authors (FA):** The authors of the study.
- **Abstract (AB):** A summary of the study's content.
- **Type of Publication (PT):** The type of publication (e.g., research article, systematic review, RCT).
- **Publisher (PU):** The publisher of the study.

Figure 2. Scoping review-screening paper form

2.2.3 Keyword

The final list of search keywords used for the scoping reviews are as follows:

(((((telemedicine) OR (telehealth)) OR (telemonitoring)) OR (teleconsultation)) OR (online consultation)) OR (virtual consultation)) OR (eHealth)) OR (mobile Health)) OR (remote care) **AND**

For patients/caregivers:

1. Training for (cancer) patients
2. Patient education (materials)
3. Empowerment strategies
4. Trust
5. Patient-centered care
6. Empowerment (Empowering patients in (virtual) care)
7. Remote (health)care (patient) empowerment
8. Health or digital literacy
9. Patient communication
10. (Cancer) patient experience
11. Uptake
12. Skills
13. Capacity Building
14. Satisfaction
15. Acceptance
16. Education (needs)
17. Perceptions

For healthcare professionals

1. Training for (cancer) clinicians
2. Training for empowerment

3. Education (currículum)
4. Training needs in telehealth
5. Uptake
6. Skills
7. Capacity building
8. Satisfaction
9. Acceptance
10. Perceptions
11. Doctor/provider-patient communication

It is also worth noting that the initial keyword searches revealed a lack of extensive literature specifically focused on telehealth training in the context of cancer care. Given that empowerment in telehealth and the upskilling of HCPs and patients are applicable across different patient populations and healthcare providers, it was decided early on to broaden the search criteria.

As a result, the review included studies on the management of other chronic diseases beyond cancer through telemedicine, particularly those that addressed training needs which could be applied universally across different conditions. This approach allowed for the identification of transferable skills and educational strategies that could be adapted and applied to cancer care as well.

2.2.4 Selection process

From the very beginning, all the involved partners agreed that the primary interests of the scoping reviews would focus on identifying the following key areas: the needs for training and adoption of telehealth technologies, the specific skills required by both HCPs and patients/caregivers, perceptions regarding the use of these technologies, and the barriers or challenges faced during implementation. Additionally, the partners aimed to explore the drivers that facilitate the adoption of telehealth, alongside identifying best practices, strategies, and lessons learned from previous initiatives. These focus areas were established to ensure that the review would yield actionable insights and address the practical needs of the stakeholders involved in the TNA phase.

Moreover, since the scoping reviews were not systematic and the search results were vast, up to 19,200 in total for all string combinations (Figure 3), the selection was limited to the first 100 results per search term. Additionally, there was a considerable overlap in search results across different keywords. This overlap helped refine and narrow down the final list of relevant studies. All papers were independently reviewed by two reviewers, with a third

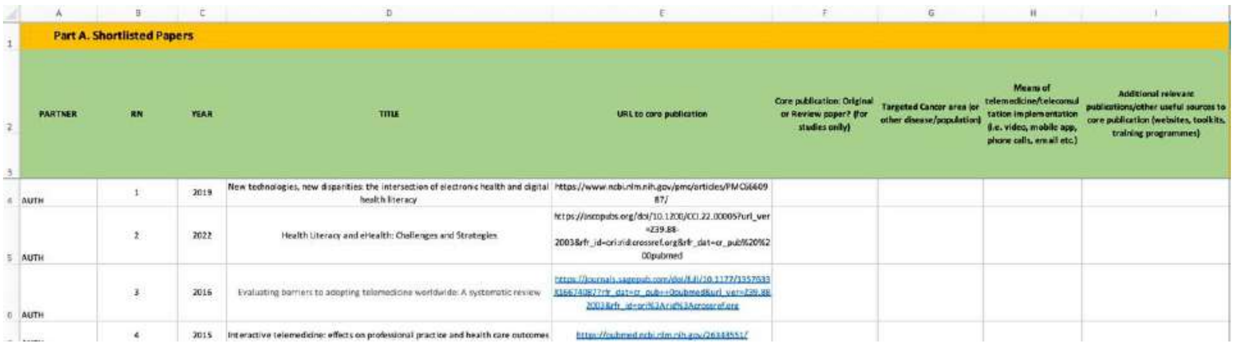
reviewer responsible for resolving any disagreements. This multi- step process ensured that the selection of studies was rigorous, methodologically sound, and met the established inclusion criteria.

Figure 3. Distribution of papers throughout the decade 2014-2024

Regarding the data extraction form, it consisted of two parts:

Part A: Shortlisted Papers (Figure 4)

- Partner (PARTNER): The responsible partner reviewing the paper.
- Reference Number (RN): The unique reference number assigned to the paper.
- Year (YEAR): The year the paper was published.
- Title (TITLE): The full title of the research paper.
- URL to Core Publication: A link to the main publication (DOI, URL).
- Type of Paper: Whether the core publication is an original study or a review paper.
- Targeted Disease/Population: The cancer area or other diseases/populations focused on in the study.
- Means of Telemedicine Implementation: The medium used for telemedicine, such as video, mobile apps, phone calls, or emails.
- Additional Relevant Publications/Sources: Any other useful sources related to the core publication (e.g., websites, toolkits, training programs).



Part A. Shortlisted Papers

PARTNER	RN	YEAR	TITLE	URL to core publication	Core publication: Original or Review paper? (for studies only)	Targeted Cancer area (or other disease/population)	Means of telemedicine/teleconsultation implementation (i.e. video, mobile app, phone calls, email etc.)	Additional relevant publications/other useful sources to core publication (websites, toolkits, training programmes)
AUTH	1	2019	New technologies, new disparities: the intersection of electronic health and digital health literacy	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC666098 7/				
AUTH	2	2022	Health Literacy and eHealth: Challenges and Strategies	https://ascopubs.org/doi/10.1200/CCI.22.00005?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed				
AUTH	3	2016	Evaluating barriers to adopting telemedicine worldwide: A systematic review	https://journals.sagepub.com/doi/full/10.1177/1357633X16674087?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org				
[illegible]	4	2015	Interactive telemedicine: effects on professional practice and health care outcomes	https://pubmed.ncbi.nlm.nih.gov/26344551/				

Figure 4. Part A of the data extraction form

Part B: Training Needs, Skills, etc. (Figure 5)

- Perceptions: Concerns, trust, and attitudes toward telemedicine, remote care, or digital health.
- Training Needs & Skills: Specific skills to be acquired and areas where training is needed.
- Empowerment/Engagement Strategies: Methods to engage and empower HCPs or patients in telemedicine.
- Barriers/Challenges: Issues with telemedicine acceptance and adoption.
- Drivers: Factors that support telemedicine acceptance and adoption.
- Training/Capacity Building Modules: The types of content delivery and training methods employed.
- Assessment Tools/Methods: Tools for measuring satisfaction, training success, or acceptance of telehealth solutions.
- Best Practices, Strategies, Lessons Learned: Key insights from studies or literature reviews.
- Other: Any additional information that does not fit into the previous categories.

Figure 5. Part B of the data extraction form

This comprehensive data extraction form ensured that all the relevant aspects of telemedicine implementation, training needs, and challenges were systematically captured for further analysis.

2.2.5 Results of the scoping reviews, feeding the TNA

HEALTHCARE PROFESSIONALS

The first scoping review focused on identifying the needs and gaps faced by healthcare professionals in adopting telehealth solutions. After screening 57 papers, 33 were selected for data extraction (ANNEX I). The majority (n=26) were review articles, covering diverse topics such as frontline experiences delivering remote health services (Griffith, et. al, 2022), clinicians' challenges with tele-behavioral health (Wahezi, et. al, 2021; Vitiello, et. al, 2022), gaps in telemedicine training for medical students and professionals, and the need for telemedicine integration into medical curricula (Vitiello, et. al, 2022; Ghaddaripouri, et. al, 2023).

Other key areas included healthcare workers' perceptions of mHealth, telemedicine's evolution pre- and post-COVID-19, and tele-neuro-oncology practices (Odendaal, et. al, 2020; De Simone, et. al, 2022; Wasilewski, & Mohile, 2022). The review also looked into telehealth training and research adaptations, as well as guidelines for using telemedicine across various specialties, including cancer care, dermatology, cardiology, palliative care, and urology (Abbott, et. al. 2020; Almufleh, et. al, 2021; Lundereng, et. al. 2023).

Additionally, the papers addressed the usability of telehealth systems, the adoption of mobile health apps by physicians, the rise of digital therapeutics, and the implementation of telehealth in rural and educational settings (Calleja, et. al. 2022; Gonçalves, et. al. 2023). Common challenges and strategies were highlighted, particularly regarding telehealth training, remote patient monitoring, communication in virtual environments, and its impact on team-based care.

These papers highlight key themes in telemedicine and telehealth implementation, feeding the TNA with challenges, training needs, and the evolving roles of healthcare professionals in virtual care environments. Specifically, the scoping review helped identify the extent to which telemedicine had been integrated into clinical workflows and uncovered several key barriers preventing its broader adoption. The findings indicated that while many healthcare professionals were willing to adopt telehealth tools, they encountered significant obstacles, including a lack of formalized training on telehealth platforms, time constraints, and various technical challenges (Loeb, et. al., 2020).

Recurring themes included concerns about data privacy and security, especially when handling sensitive information related to cancer treatments. Another major issue identified was the difficulty in integrating telehealth technologies into existing clinical workflows, such as managing patient appointments and documenting telehealth interactions in electronic health records (EHRs) (Odendaal, et. al, 2020; Pourmand, et. al. 2021).

Communication in virtual environments emerged as another significant topic. Many healthcare professionals, according to literature, report difficulties in maintaining the quality of doctor-patient communication during telehealth consultations. (Pourmand, et. al. 2021) The absence of non-verbal cues, limited rapport-building opportunities, and challenges in delivering empathy through digital platforms were noted as critical barriers (Shaver, 2022). These communication challenges affected both the clinicians' ability to deliver care and the patients' overall satisfaction and engagement (Tuot, & Boulware, 2017; Odendaal, et. al, 2020).

Addressing these virtual communication gaps is essential for improving telehealth services, ensuring meaningful interactions, and fostering trust in remote care settings. In summary, the scoping review revealed that while telemedicine holds promise, the successful integration into healthcare requires a more structured approach to training, communication strategies, and support, addressing both technical and procedural challenges. The identified needs—such as formal telehealth training, improved virtual communication skills, workflow integration, and enhanced security measures— are essential for overcoming these barriers and improving the adoption and efficacy of telehealth services across various healthcare settings.

PATIENTS AND CAREGIVERS

The second scoping review, which focused on identifying the training needs and gaps among patients and caregivers in telehealth empowerment and adoption, initially included 88 papers, with 67 remaining after screening (ANNEX II). The majority (n=63) were review articles that highlighted key topics such as the effectiveness of teleconsultations, patient satisfaction with remote care (Almathami, et. al. 2020; Oudkerk Pool, et. al. 2021), barriers to telemedicine adoption (Rotker, 2020; Jacob, et. al. 2022), and support for informal caregivers through remote health interventions (Chi, & Demiris, 2015). It also explored the role of telehealth in chronic disease management and patient empowerment (Creber, et. al. 2023; Fitzpatrick, 2023), addressing the challenges related to digital health literacy, healthcare access, and the quality of communication and empathy in virtual care environments, particularly as telehealth becomes more integrated post-pandemic (Beheshti, et. al. 2022; Fitzpatrick, 2023).

The review revealed that many patients and caregivers, particularly those from older or lower socioeconomic backgrounds, faced significant digital literacy barriers (Levin-Zamir, & Bertschi, 2018). Difficulties in understanding and using telehealth tools often led to frustration and disengagement from telemedicine services. A common barrier identified was a lack of confidence in using technology and skepticism about the quality of care delivered via

telemedicine (González-Fraile, et. al. 2021; Beheshti, et. al. 2022). These barriers were exacerbated by a lack of training and support for patients and caregivers on how to effectively use telehealth tools, particularly among vulnerable populations, such as older adults and those in remote areas with limited access to technology or reliable internet connections (Lloyd, & Lee, 2022; Pang, et. al. 2022). Additionally, many patients reported that telehealth consultations lacked the personal connection they associated with face-to-face interactions, making it more challenging to engage in shared decision-making processes (Cox, et. al. 2017; Almathami, et. al. 2020).

The findings underscore the need for comprehensive digital literacy training and support systems to help patients and caregivers adopt telehealth services successfully. Furthermore, improvements in virtual communication skills and empathy from healthcare providers are essential to ensure that telemedicine not only meets technical standards but also fosters meaningful patient-provider relationships in remote care settings (Risling, et. al. 2017, Aslan, et. al. 2024).

2.3 Thematic Analysis and co-Validation with Experts and Pilots

Building on the findings from the scoping reviews, the next step in the TNA was to conduct expert sessions to validate the identified gaps and gather more specific insights. These sessions involved HCPs and patient experts from the eCAN JA consortium, participating also in T8.3, focusing on their experiences with the targeted stakeholders and telehealth technologies. The discussions explored various topics, including different levels of digital literacy, perceived barriers to telehealth adoption, and the specific training needs required to address these challenges. The expert input was crucial in refining the understanding of both technical and psychosocial issues related to telehealth.

Once the data was collected from the scoping reviews and the expert sessions, a thematic analysis was conducted. This involved coding and categorizing the qualitative data to identify recurring themes, gaps, and barriers in the use of telehealth technologies. The analysis considered both technical and psychosocial aspects, ensuring a comprehensive understanding of the needs of HCPs, patients, and caregivers.

Key themes that emerged included a lack of formal telehealth training for HCPs, particularly in managing sensitive patient interactions in virtual environments; digital literacy challenges among patients and caregivers, which hindered engagement with telehealth tools; concerns about data privacy and security; and emotional barriers to telehealth adoption, such as

feelings of isolation among patients due to the lack of personal connection in virtual consultations (Figure 6). These findings formed the foundation for developing targeted educational materials, aimed at addressing both the technical and emotional challenges identified in the TNA.

eCAN

Identified training needs

	Patients	Caregivers	Healthcare Professionals
Knowledge and Understanding of Telehealth	XXX	XXX	X
Building Trust in Telehealth	XXX	XXX	XX
Telehealth Skills	XXX	XXX	XX
Effective Communication & Empathy	XX	X	XXX
Security & Safety	XXX	XXX	X

Figure 6. Summary of the identified needs per stakeholder group (X signs indicate the importance level of the identiMied training needs/gaps per stakeholder group)

The insights gained from the TNA were further enriched by lessons learned from the first year of the eCAN JA lifecycle and the need to provide specific training support to WP5 pilots (D8.3). It is noted that in the framework of the WP5 pilot, HCPs were trained to conduct virtual consultations with cancer patients. While many demonstrated technical proficiency with teleconsultation platforms, they struggled with managing emotionally sensitive conversations due to the absence of visual cues and body language in virtual settings. This emphasized the need for training on virtual empathy and effective communication.

As a result, T8.3 included modules on managing patient emotions, using active listening techniques, and building rapport during teleconsultations. Furthermore, the pilot highlighted significant challenges faced by patients and caregivers in using remote monitoring devices, particularly with setup and operation. To address these difficulties, T8.3 developed step-by-step guides and interactive tutorials for patients and caregivers, designed to be user-friendly and accessible, with clear instructions and visual aids (Figure 7). These lessons provided practical, real-world insights that further validated the TNA outcomes and helped the project

team to shape the development of training materials, ensuring they effectively addressed the challenges faced by HCPs, patients, and caregivers in adopting and trusting telehealth tools.

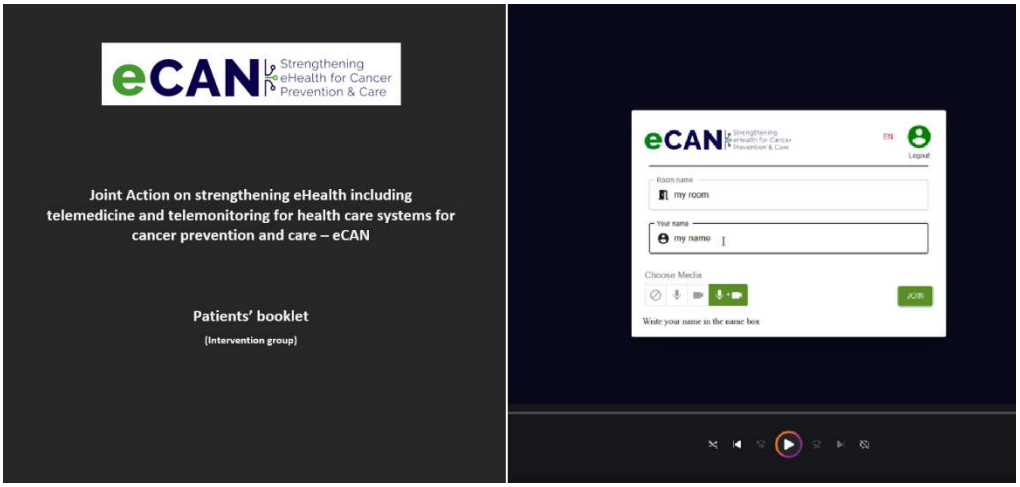


Figure 7. Shots from the training materials developed for the pilots

2.4 Key findings from the Training Needs Assessment

The comprehensive TNA process, which included scoping reviews, expert sessions, and pilot feedback, uncovered significant gaps and challenges in the adoption and integration of telehealth solutions among HCPs, patients, and caregivers. The scoping reviews highlighted the lack of formal telehealth training for HCPs, particularly in managing virtual patient interactions and ensuring security and privacy of patient data. Patients and caregivers, especially those from vulnerable groups, faced digital literacy barriers, a lack of support for using telehealth tools, and difficulties in maintaining personal connections during virtual consultations. These findings were further validated through expert sessions and real-world insights from WP5 pilots, where HCPs struggled with virtual communication and empathy, while patients and caregivers faced challenges with setting up and using remote monitoring devices.

The key findings from the scoping reviews, expert sessions, and pilot feedback formed the foundation for designing targeted educational materials under Task 8.3. For HCPs, the materials focused on virtual empathy, effective communication, and integrating telehealth solutions into existing clinical workflows. For patients and caregivers, the training emphasized digital literacy, trust-building and step-by-step guides to help them confidently use telehealth and telemonitoring. These tailored materials aimed to equip all stakeholders with the necessary skills to overcome barriers and successfully adopt telehealth services in cancer care and beyond.

3. Development of Educational & Training Activities

3.1 Training activities

The current chapter outlines the approach to developing educational materials, details the key topics covered in the initial drafts, and discusses the iterative process of validation and refinement through stakeholder collaboration.

The findings of all the activities performed in the framework of the TNA, including the scoping reviews, experts and stakeholders' engagement, and lessons learned from WP5 pilots led to the development of the training curriculum and the overall training programme for the empowerment of both HCPs and patients/caregivers in the adoption of telehealth solutions. The educational contents were designed to address, as already mentioned, the specific needs of the targeted stakeholder groups, focusing on enhancing digital literacy, telehealth proficiency, and patient empowerment. For HCPs, the curriculum focused on modules for managing virtual consultations, integrating telehealth tools into clinical workflows, ensuring data privacy and security. It also incorporated empathy training to help HCPs navigate the emotional challenges of virtual care, allowing them to build rapport and communicate effectively with patients in telehealth settings.

For patients and caregivers, the training curriculum focused on digital literacy and telehealth navigation, providing simple, easy-to-understand guidelines on using telehealth platforms and telemonitoring tools. The materials were enriched with content tailored to effective trust building for remote healthcare environments, patient rights and equal access to telehealth for all. The collaboration between AUTH and ICO partners, under T8.4 ensured that these materials were accessible through open access, digital training platforms. Designed to be flexible and adaptable, the materials allowed HCPs, patients, and caregivers to engage with the content at their own pace.

The entire training programme aspires to play a pivotal role in bridging the identified gaps, supporting the successful adoption of telehealth technologies, and empowering all stakeholders involved in cancer care. Lazem M, Sheikhtaheri A. Barriers and facilitators for disease registry systems: a mixed- method study. BMC Med Inform Decis Mak. 2022 Apr 11;22(1):97. doi: 10.1186/s12911- 022-01840-7. PMID: 35410297; PMCID: PMC9004114.

3.2 Development of the Training Curriculum

In the months following the TNA (May-June 2024), T8.3 leaders (AUTH, 3rd RHA) entered the core development phase of the training programme, considering the identified needs of the previous phase and the horizontal priority of the eCAN JA to provide tailored educational materials for patients, caregivers, and HCPs, in order to ensure the successful adoption of telehealth and telemedicine technologies.

Specifically, one of the primary objectives under Task 8.3 was to develop a comprehensive set of educational activities targeting patients and caregivers. This guide informed by the TNA was structured around the following key areas:

- Empowerment through Education: Telehealth offers patients and caregivers greater autonomy in managing health. To support this shift, the educational materials focused on empowerment strategies, such as coping mechanisms for dealing with the emotional challenges of remote care, shared decision-making techniques, and information on patients' rights. These aspects were crucial for fostering a sense of control and engagement in telemedicine.
- Communication Training: Effective communication is critical in virtual healthcare settings. The training curriculum included sections for improving communication between patients and healthcare providers, addressing how patients can articulate their concerns during teleconsultations and how caregivers can advocate for their loved ones in remote settings.
- Psychosocial Needs Assessment: Remote care often leaves psychosocial needs unmet. To address this, the proposed curriculum covered strategies for assessing and responding to psychosocial challenges in virtual consultations. This included recognizing signs of anxiety, stress, and depression, and accessing available telehealth resources.

In parallel to the activities for patients and caregivers, a framework was developed for HCPs. This framework centered around equipping them with the skills and knowledge to deliver high-quality care through telemedicine platforms. Key topics included:

- Telehealth Technologies: The framework provided a detailed overview of telehealth tools, from video conferencing platforms to remote monitoring systems and wearable devices. HCPs were guided through setting up and using these tools effectively, ensuring that they could operate telehealth platforms with confidence.

- Communication and Collaboration with Patients and Caregivers: Just as patients and caregivers needed to improve their communication skills, HCPs were trained in effective virtual communication. This included maintaining empathy and rapport during teleconsultations, managing sensitive conversations remotely, and fostering collaboration with caregivers, who often play a critical role in remote care.

A key element of the educational materials has been the content delivery format, selected carefully to engage different learning styles and ensure accessibility (Figure 8). The proposed resources included:

- Visual Aids: images were used, and slide decks were developed to visually support telehealth processes, guiding both patients and HCPs through complex topics in an easily digestible format.
- Presentations and Lectures: For more formal education, a series of presentations was developed, covering the basics of telehealth, ethical considerations in virtual care, and best practices for communication and safety in teleconsultations. These presentations were complemented by further reading materials and external resources.
- Self-assessment quizzes: To support interactive learning, self-assessment quizzes and reflection questions were created to summarize the lessons-learnt after each module and help participants reflect on the acquired knowledge in a gamified way.
- Interactive Scenarios: Virtual Patient (VP) Scenarios were incorporated as a cutting-edge educational tool. These scenarios allowed HCPs to simulate telehealth consultations, improving their decision-making and communication skills in a controlled environment. Patients and caregivers also benefitted from VP scenarios designed to familiarize them with telehealth interactions, empowering them to engage more effectively during real consultation.

A Virtual Patient Scenario (VP) is a computer-based simulation, used in medical/patient education and training to resemble real-life clinical/health situations. The VP scenarios allow healthcare students & professionals to practice clinical decision-making, problem solving and enhance skills, as well as patients and caregivers to acquire knowledge and skills for effective health-management in a safe and controlled environment (DaMli, et. al. 2019).

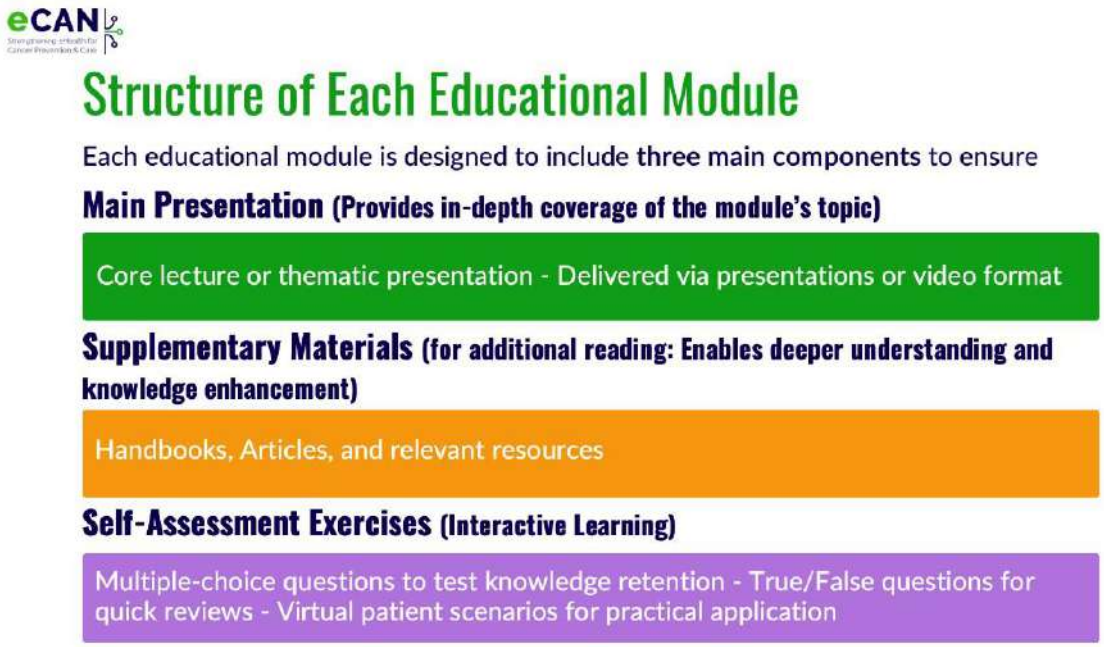


Figure 8. Content Delivery Structure for the Training programme

The first draft of the curriculum for T8.3 included five comprehensive modules, each focusing on essential aspects of telehealth and telemedicine in cancer care (Figure 9). These modules were designed by AUTH partner to cater to both HCPs and patients/caregivers, tailoring some content to the specific needs of each group. Below is an overview of the curriculum areas as presented in the early drafts:

Module 1: Introduction to Telehealth/Telecare

- Objective: To provide an overview of telehealth services, their benefits, and their challenges. This module covered various types of telehealth services, including real-time consultations, store-and-forward methods, remote monitoring, and mobile health (mHealth) technologies.
- Content: This module provided definitions, background information, and detailed discussions on telehealth technologies such as video conferencing, mobile apps, and wearable devices.
- Materials: Slide deck, reading materials, online quizzes, including a VP scenario.

Module 2: Key Factors for Trust in Telehealth

- Objective: To identify the key factors that build trust between patients and healthcare providers in a telehealth environment. Emphasis was placed on effective

communication, ensuring privacy and confidentiality, and providing reliable, consistent care.

- Content: Case studies demonstrating how trust can be built through clear communication and empathy in telehealth settings. Additional case studies focused on maintaining patient privacy and delivering consistent telehealth services.
- Materials: Slide decks, reading materials, online quizzes for self-assessment.

Module 3: Telehealth Skills

Module 3A: Telehealth Skills for Patients and Caregivers

- Objective: To equip patients and caregivers with the necessary skills to use telehealth platforms effectively. This module provided a step-by-step guide on how to set up telehealth applications, prepare for virtual consultations, and troubleshoot common technical issues.
- Content: Detailed instructions for using telehealth apps, tips for overcoming technical difficulties, and real-life case studies from the eCAN Telehealth Platforms.
- Materials: slide deck, tips & tricks handbook, checklists, and self-assessment quizzes.

Module 3B: Telehealth Skills for Healthcare Professionals

- Objective: To provide HCPs with the skills needed to use telehealth platforms, conduct remote consultations, and integrate telehealth into their clinical workflows.
- Content: Step-by-step guides for setting up telehealth tools, case studies on telehealth best practices, and guidelines for troubleshooting technical issues.
- Materials: slide deck, practical handbook, checklists, and interactive quizzes.

Module 4: Communication and Patient Empowerment

Module 4A: Empowering Patients and Caregivers

- Objective: To educate patients and caregivers on their rights and responsibilities in telehealth, including managing health information, advocating for their needs, and effectively communicating health concerns to providers.
- Content: Lectures on patient rights (informed consent, privacy, access to information), the responsibilities of patients in managing telehealth, and tips for effective self-advocacy.
- Materials: Slide decks, reading materials and self-assessment quizzes.

Module 4B: Training Healthcare Professionals for Effective Remote Consultations

- Objective: To train HCPs in delivering effective telehealth consultations, with a focus on empathy, privacy, and security in virtual interactions.
- Content: Best practices for telehealth consultations, including how to maintain professionalism, adapt communication strategies to different patient needs, and ensure patient privacy.
- Materials: Slide decks, reading materials and self-assessment quizzes.

Module 5: Evaluation and Feedback

- Objective: To assess the understanding and effectiveness of the training program and gather feedback for future improvements.
- Content: Post-training assessment survey and feedback form were developed to collect insights from participants on the usefulness, clarity, and overall satisfaction with the training modules.
- Materials: Online survey and feedback form, with space for open comments and suggestions.

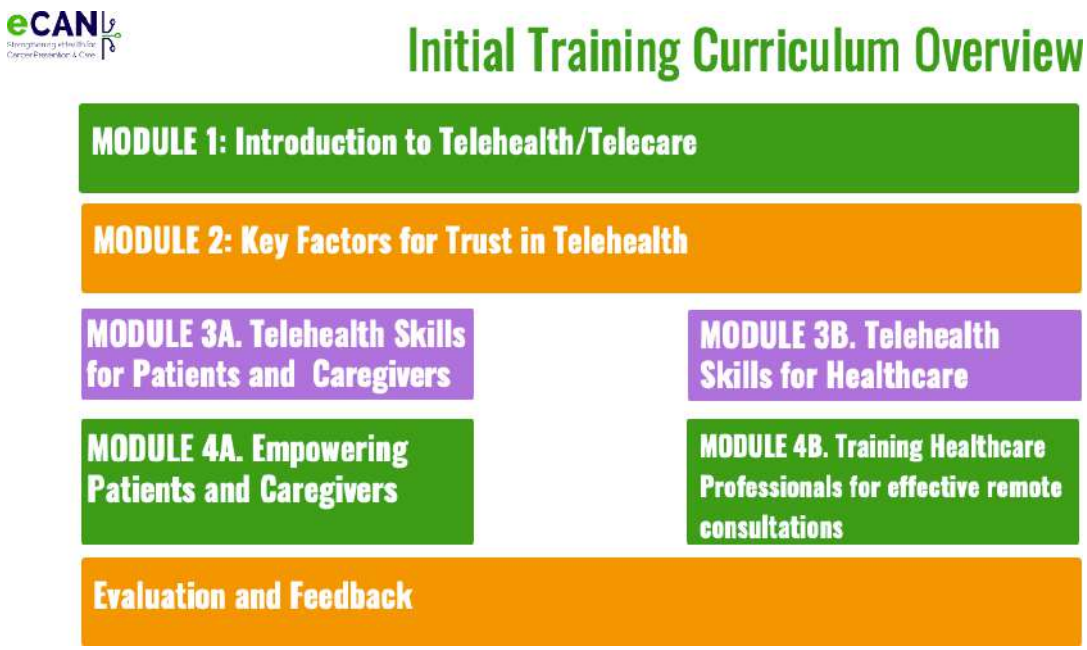


Figure 9. First draft of the Training Curriculum

3.3 Co-Validation session with Stakeholders

A significant milestone in the development of the educational materials was the co-validation session held at the Medical Education Informatics (MEI) Conference in Thessaloniki in June 2024. This session, led by AUTH and the 3rd RHA partners, brought together a diverse group

of 25 stakeholders, including HCPs, patient experts, and telehealth technology specialists, with the primary objective of presenting the first draft of the eCAN training curriculum, gathering feedback, and identifying areas for improvement. The collaborative environment allowed for a comprehensive review of the curriculum, ensuring it met the diverse needs of its target audience (Figure 10).

Figure 10. Shots from the co-validation session with stakeholders at MEI 2024

The validation process followed a structured format, beginning with the presentation of the curriculum, where participants were introduced to the proposed content and delivery methods. Specific modules were reviewed in detail, focusing on their relevance, clarity, and applicability. This was followed by interactive sessions, where demo accounts allowed participants to engage directly with the training platforms. This hands-on experience provided valuable insights into how the curriculum could become more user-friendly and effective in practical telehealth settings.

The feedback gathering process highlighted several key areas for enhancement (Figure 11). Participants suggested incorporating additional content on soft skills, data sharing practices in healthcare, treatment options, and patient education on the European Health Data Space to reassure them about secure secondary data usage.

They also identified specific barriers in doctor-patient communication during telemedicine, such as challenges in breaking bad news, concerns over misdiagnosis, technological adoption, and the constant need for continuous education due to evolving technology. Furthermore, participants noted the importance of maintaining trust in telemedicine's effectiveness, managing appointment availability, and offering health services from home, especially in psychological care, to ensure privacy and convenience.

Figure 11. Stakeholders' feedback, collected at MEI's session (via menti.com)

On the positive side, common drivers towards telemedicine adoption were also identified, including avoiding delays, increasing interaction frequency, consultations from home, and professional recommendations for telemedicine use. For HCPs, reimbursement, flexibility in scheduling, and efficient resource utilization were motivating factors. Patients appreciated HCPS' commitment to engage with them through these platforms.

During the co-validation session, no significant feedback or objections were raised regarding the proportion of content for each module or the proposed content delivery format. All stakeholders agreed with AUTH's proposal for a short, comprehensive training program that would meet the needs of a diverse range of participants.

The feedback collected at the MEI Conference Stakeholder session was instrumental in shaping the final version of the eCAN training curriculum, ensuring it addressed the practical needs of HCPs, patients, and caregivers. This iterative validation process guaranteed that the curriculum was comprehensive, addressing both the technical and emotional aspects of telemedicine while fostering trust and enhancing the overall telehealth experience for all stakeholders.

3.4 Refinement and launching of the final training curriculum

The final curriculum developed for Task 8.3 was designed to address the specific knowledge and skill gaps identified during the TNA process. In addition to the foundational research, insights from the co-validation session at the MEI Conference were instrumental in refining the content, ensuring that the curriculum met the diverse needs of HCPs, patients, and caregivers. The feedback collected during the session played a crucial role in enhancing the curriculum by incorporating suggestions on soft skills, data sharing practices, and addressing communication barriers and effective rapport-building.

Additionally, suggestions regarding the need for continuous education due to evolving technology were integrated, making the curriculum more adaptable to future updates. The

curriculum was structured into five key modules, each focusing on critical aspects of telehealth adoption and designed to meet the needs of diverse stakeholders (Figure 12). Specifically:

Module 1: Introduction to Telehealth/Telecare

This foundational module remained as proposed in the drafted version of the training curriculum, providing a comprehensive overview of telehealth technologies, emphasizing both the benefits and challenges of remote care.

Learning objectives:

- Understand the definitions of key telehealth-related terms and concepts.
- Evaluate the advancements and limitations of telehealth and telecare.
- Identify key telehealth technologies and their applications.
- Recognize the benefits and barriers associated with telehealth adoption.
- Understand the role of education and training in enhancing telehealth proficiency.

Module 2: Building Trust in Telehealth

This module focuses on the critical role of trust in the effective use of telehealth technologies. Participants learn how to develop communication strategies that foster trust and rapport in virtual healthcare interactions. Both HCPs and patients are guided through techniques to build trust, ensuring that telehealth services are reliable, confidential, and patient-centred.

Learning objectives:

- Understand the principles of telehealth in patient-centred care.
- Develop effective communication strategies tailored for virtual healthcare visits.
- Learn how to build trust and rapport during telehealth interactions.
- Identify best practices for engaging in telehealth appointments as patients and caregivers.
- Overcome challenges and barriers to trust-building in telehealth settings.

Module 3: Telehealth Skills

This module is divided into two sections: one designed for HCPs and another for patients and caregivers. The goal is to equip all participants with practical skills for using telehealth technologies. It provides detailed guidelines on scheduling telehealth appointments,

preparing for consultations, troubleshooting technical issues, and conducting successful telehealth visits. The module also aims to enhance participants' overall experience with telehealth to improve healthcare outcomes.

Learning objectives:

- Understand the principles and benefits of telehealth services.
- Effectively schedule and prepare for telehealth appointments.
- Comfortably use telehealth technology and troubleshoot technical issues.
- Conduct successful telehealth visits, including pre- and post-appointment actions.
- Enhance the overall telehealth experience to achieve better healthcare outcomes.

Module 4: Equity, Access, and Patient Rights

This module tackles the critical issue of equitable access to telehealth services, with a specific focus on how telehealth can both mitigate and exacerbate healthcare disparities. It explores the impact of socio- economic status, geography, and digital literacy on access to telehealth and provides strategies for ensuring equitable, ethical telehealth practices. The module also covers privacy and data protection, highlighting the legal and ethical considerations involved in safeguarding patients' personal health information during telehealth interactions.

Learning objectives:

- Understand the impact of telehealth on healthcare disparities and how it can both reduce and exacerbate inequalities.
- Explore the role of socio-economic status, geography, and digital literacy in telehealth access.
- Identify key privacy concerns and challenges related to data protection in telehealth.
- Discuss the ethical implications and legal requirements for safeguarding personal health information.
- Analyse strategies to ensure equitable access to telehealth and maintain ethical practices.

Module 5: Evaluation and Feedback

The final module focuses on assessing the effectiveness of telehealth services, both for healthcare providers and patients. Participants are introduced to self-assessment tools that allow them to evaluate their progress in telehealth skills and proficiency. The module also

provides mechanisms for gathering feedback on the training program itself, facilitating continuous improvement of telehealth education.

It is noted that even though the key topic areas are the same for both HCPs and patients/caregivers, tailored content and guidelines are provided to each group to address the same or similar needs in a different way. Specifically:

- Patients and Caregivers: The materials focus on practical telehealth skills, such as how to navigate telehealth platforms, prepare for virtual consultations, and communicate effectively with healthcare providers. The content is designed to be accessible, with simple language, visual aids, and interactive tutorials to accommodate varying levels of digital literacy.
- Healthcare Professionals: The materials provides more in-depth guidance on integrating telehealth into clinical workflows, conducting teleconsultations, and addressing complex issues such as patient privacy, data security, and managing patient expectations. Advanced training modules cover the legal aspects of telehealth and offer tools for building trust and rapport with patients during remote consultations.

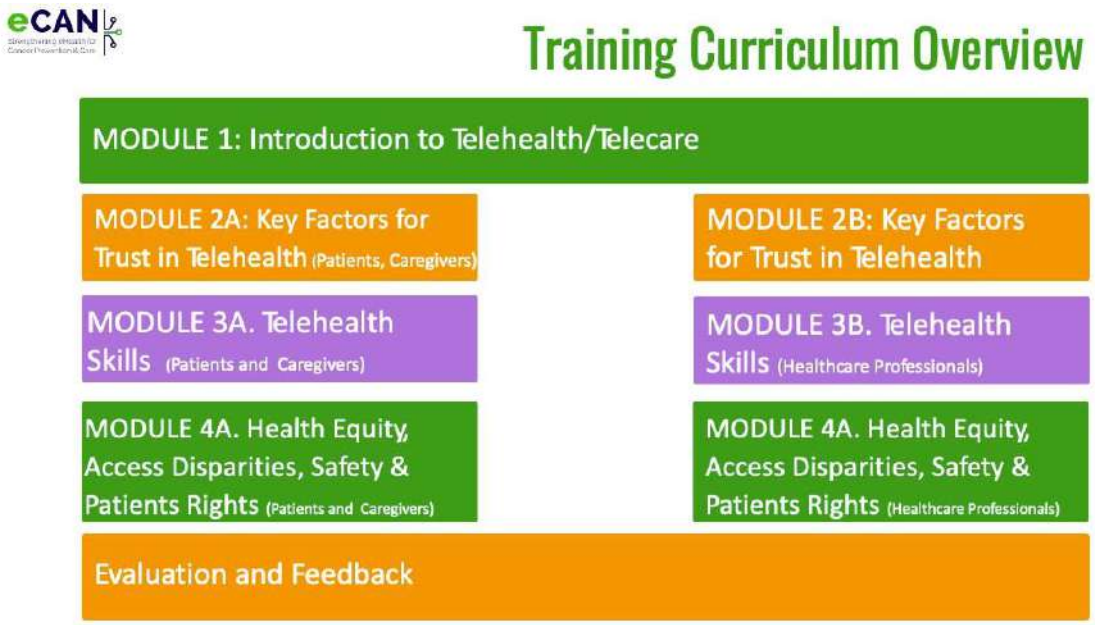


Figure 12. Overview of the final training curriculum

3.5 Digital Training Suite

The developed materials are hosted in two different online platforms. In one platform, the materials for the HCPs can be found in the English language, while the second one incorporates the materials for patients and caregivers in both the English and the Greek language. The first platform, hosting the materials for the HCPs is a specialized one, providing access to professionals of the healthcare sector to a number of online resources tackling important needs and improving various skills necessary to them. The platform was chosen to ensure the sustainability of the training curriculum even after the end of the project and their availability for HCPs around the globe.

As a result, a different host had to be made available for the materials targeting patients and caregivers. The platform hosting the training curriculum for patients and caregivers is an open-access online repository, available to the public that includes courses on healthcare topics offered in a user-friendly manner. The platform was again chosen carefully to ensure the sustainability and availability of the curriculum.

Platform for HCPs

The course "**Telehealth and Telecare in cancer: Empowering and upskilling healthcare professionals towards best practices**" is hosted on the Moodle Workplace platform, a versatile and flexible Learning Management System (LMS) designed with pedagogical principles rooted in social constructivism and collaborative learning projects.

Trainees access the course through the e-oncologia website, and once logged in, they are directed to the course's main page (Figure 13, Figure 14).

The virtual classroom is organized into different sections to enhance usability and navigation for students:

1. Course Introduction: A general overview of the course.
2. Methodology: General information about how the course works, including recommendations to help participants plan and maximize their learning experience.
3. Materials: All module contents are available from the start, allowing students to manage their own learning pace within the established timeline, as well as complete the final assessment.
4. Certification: Certificate of attendance from e-oncologia upon successful course completion (no official CME credits).

5. Communication Space for Questions and Inquiries: Interaction between trainees and tutors takes place through the designated forums in the virtual environment

- Tutoring Forum: For subject-related questions.
- Course Coordination Forum: For technical and administrative queries related to the platform.

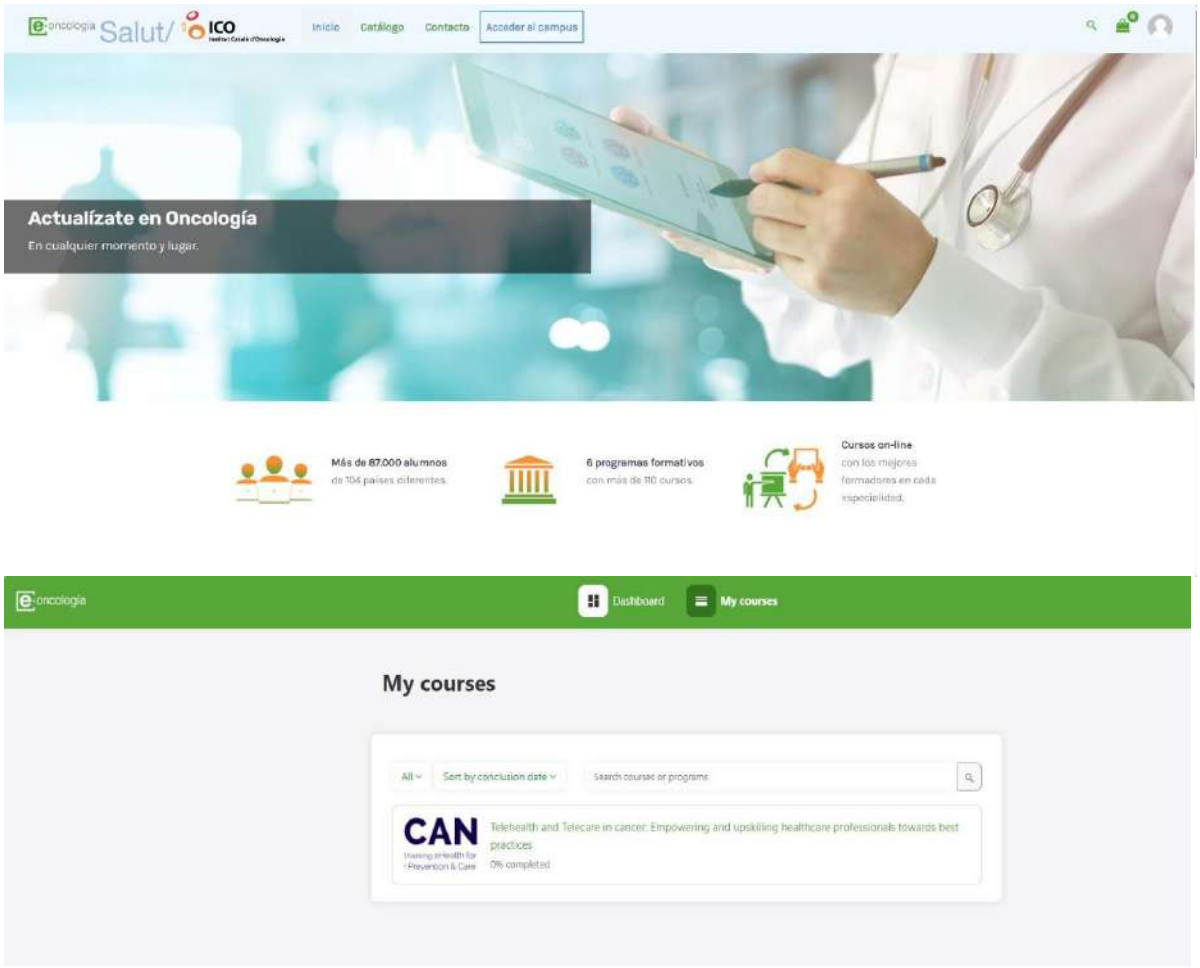


Figure 13. Screenshots from the main and the course page at the e-Oncologia platform

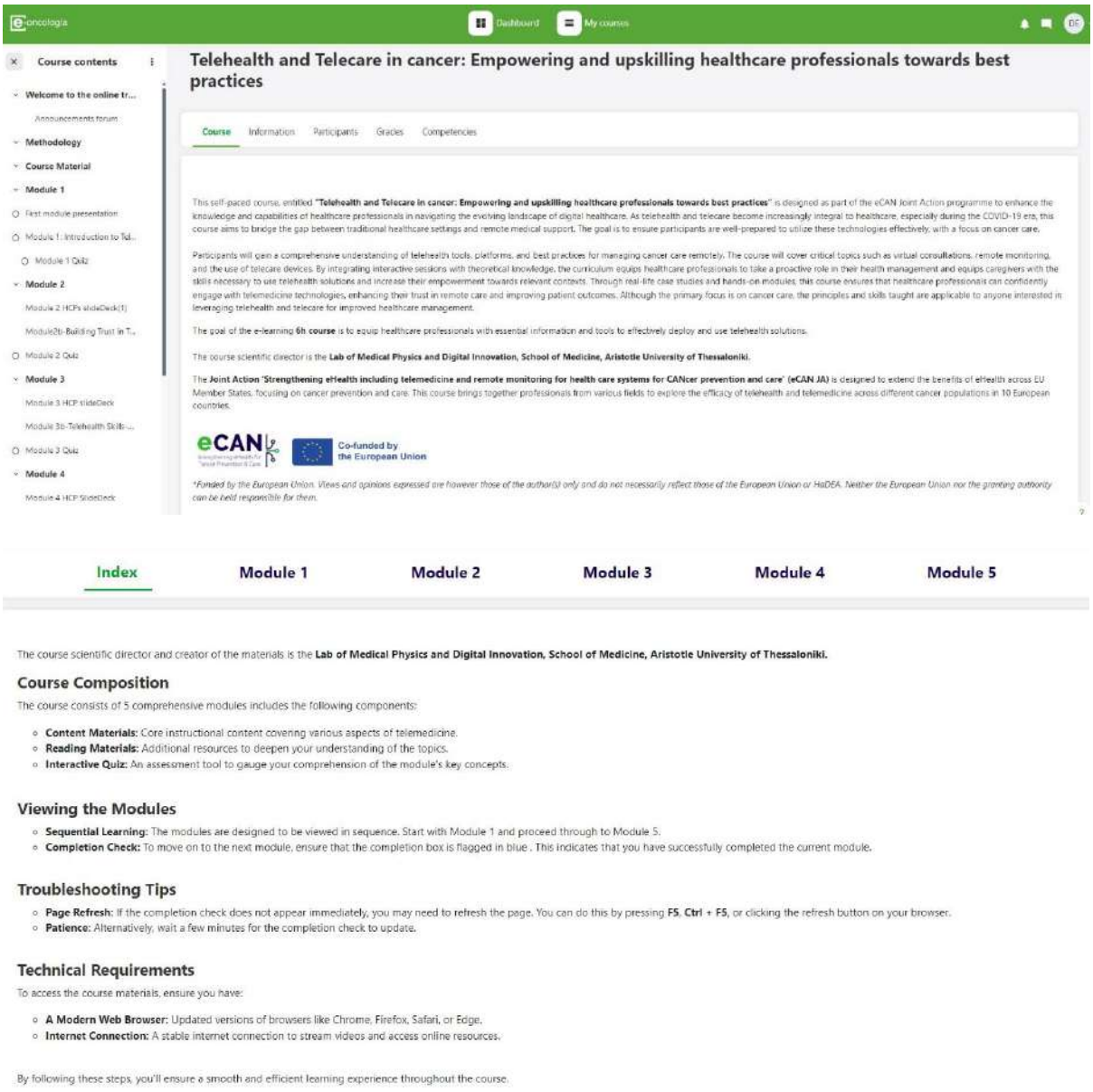


Figure 14. Overview of the training curriculum, as hosted at the e-Oncologia platform

Platform for Patients/Caregivers

Training content targeting patients and caregivers is hosted through AUTH's OpenLearn4Health platform9, powered by the Open edX10, an open source, Massive Open Online Courses educational framework.

Open edX is an innovative online learning platform designed to create, deliver, and manage interactive courses and educational content. Initially developed by MIT and Harvard University, it supports a diverse range of educational needs, from massive open online courses (MOOCs) to professional development and corporate training. The platform offers robust features such as customizable course structures, discussion forums, and analytics

tools, enabling educators to engage learners effectively. Its open-source nature allows institutions to tailor the platform to their specific requirements, fostering a global community of educators and learners dedicated to advancing accessible education.

Within, the OpenLearn4Health platform, the patients and caregivers can enroll to the online course using their credentials (upon their registration to the platform) and access its main contents (Figure 15) and navigate through the different course modules (Figure 16).

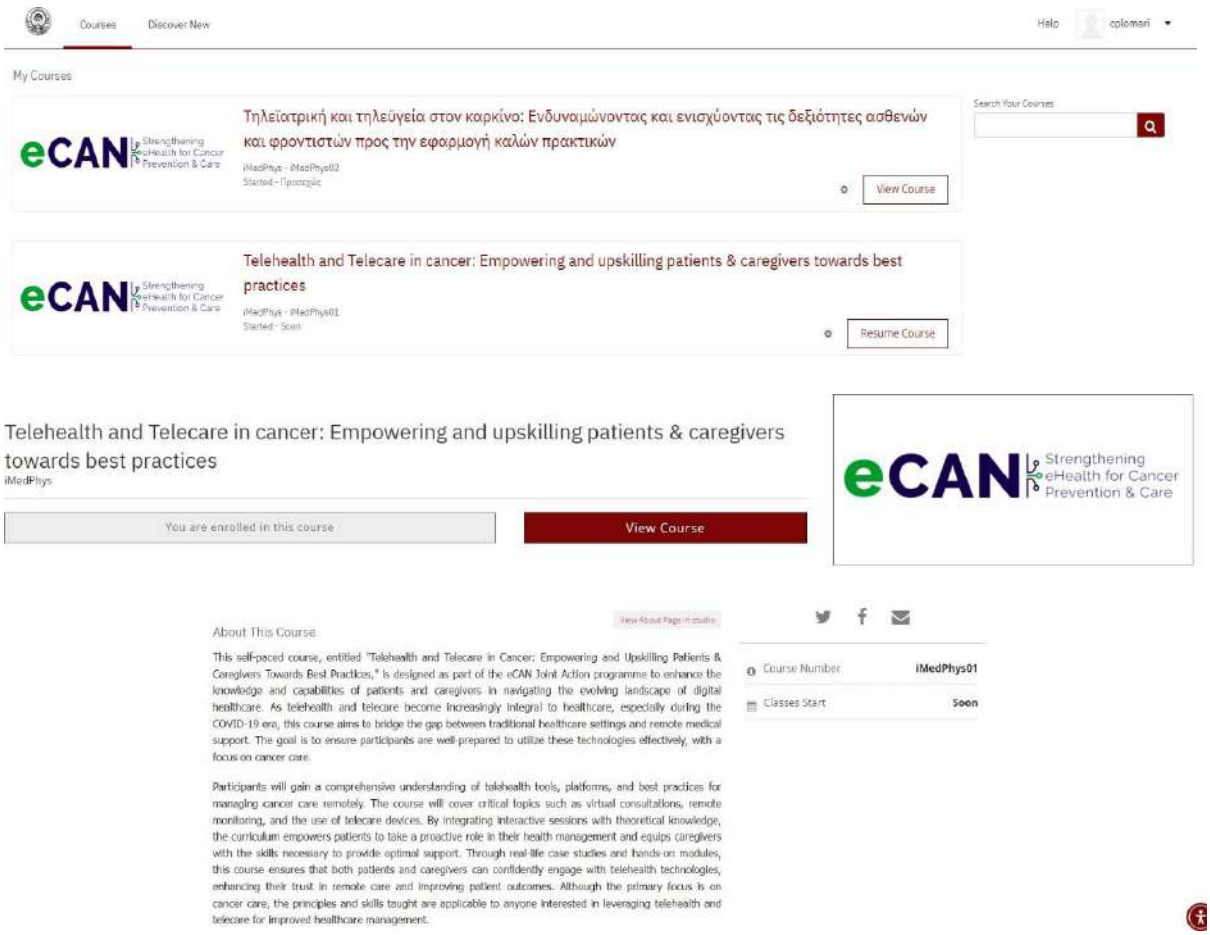


Figure 15. Screenshots from the home page of the course, as viewed at the OpenLearn4Health Platform

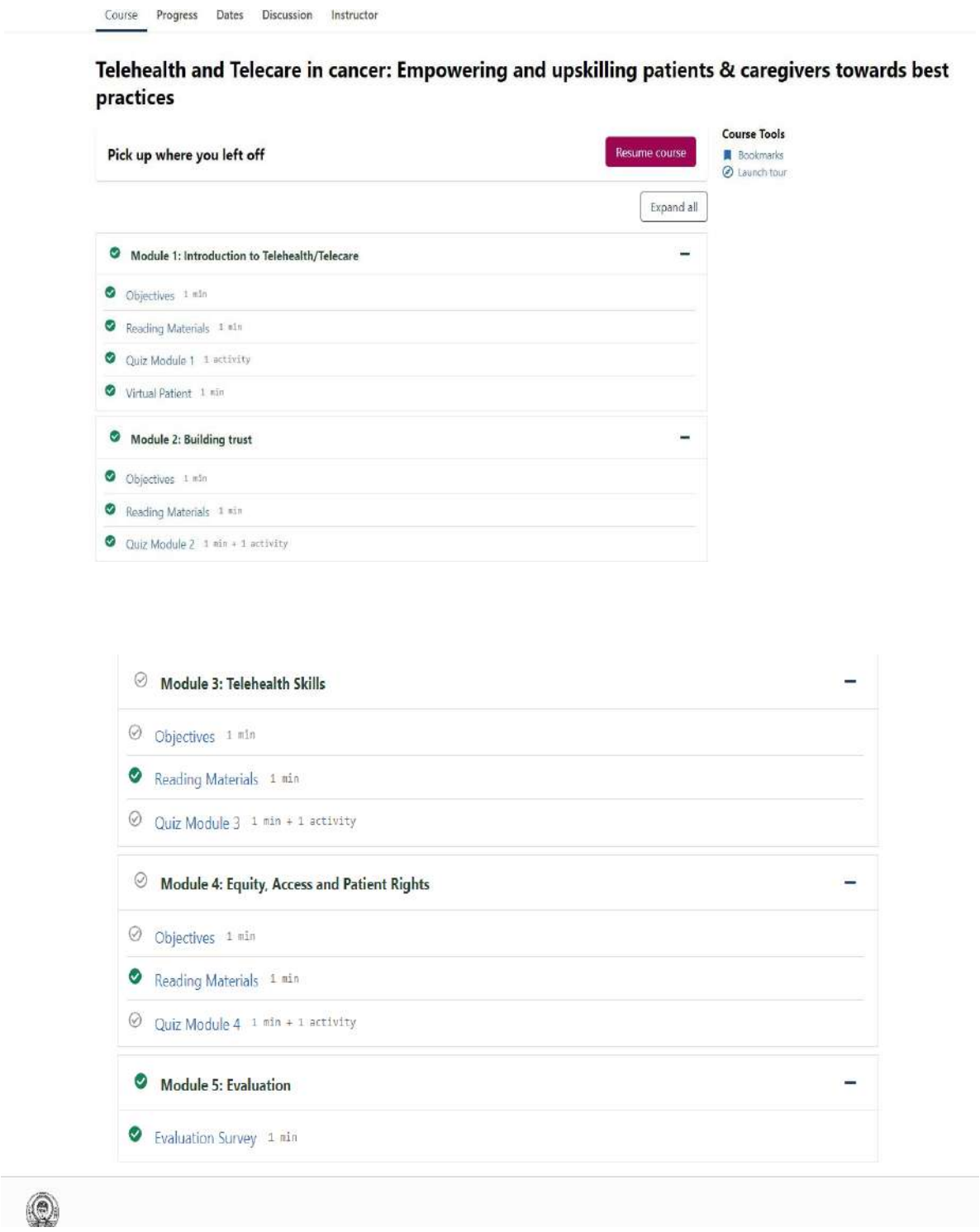


Figure 16. Screenshots from the home page of the course, as viewed at the OpenLearn4Health Platform

3.6 Train-the-Trainers workshop

A first "Train-the-Trainers" workshop, featuring hands-on testing and a live tour of the training materials and platforms, was held with the participation of ELLOK, PASYKAF and Papageorgiou G.H. partners at the MEI 2024 conference in Thessaloniki. During this session,

six trainers were trained. Following this, consultations with the trainers continued online (July-September 2024), and follow-up training sessions were conducted as the materials were finalized and uploaded to the training platforms. The goal was to equip the trainers with the necessary skills to guide patients, caregivers, and experts on implementing the training program during the real-life small-scale pilot.

4. Evaluation of Training Activities

4.1 Real-life implementation with stakeholders (small-scale pilot)

The final training program was designed as a self-paced, 1-day course, offering flexibility and convenience. It was implemented as a real-life small-scale pilot, allowing participants—both HCPs and patients/caregivers—to progress through the content at their own pace within a structured timeframe. The program comprised five comprehensive modules, each addressing a distinct topic crucial for telehealth adoption. These modules offered a balanced mix of theoretical knowledge and practical application, ensuring participants not only grasped the concepts but also gained hands-on experience. Participants were given one week to complete the course, providing them with ample time to absorb the material and review it as needed. This timeline aimed to foster a solid understanding of telehealth tools and services.

The testing phase was conducted in collaboration with Hellenic Federation of Cancer - ELLOK (Greece), associate partner, and PASYKAF (Cyprus) partner, which facilitated access to cancer patients, caregivers, and patient experts. Papageorgiou G.H. in Thessaloniki assisted with the recruitment of HCPs. There were no age restrictions except for the requirement that all participants above 18 years old. HCPs needed to have a good command of English, as the educational content was provided in English, whereas for patients and caregivers, the material was translated into Greek.

The project team recognized the linguistic limitations of the pilot, as it was only conducted in Greece. However, due to resource constraints, the material could not be translated and applied in other countries or languages. The program began in September, later than initially planned, due to recruitment challenges over the summer and technical difficulties in finalizing the educational content.

The primary objective of this pilot was to co-validate the materials, key topics, and content delivery, ensuring improvements for future iterations. The small number of participants was not viewed as a limitation, as the focus was on gathering qualitative insights to refine and enhance the program for broader implementation.

4.2 Evaluation methodology

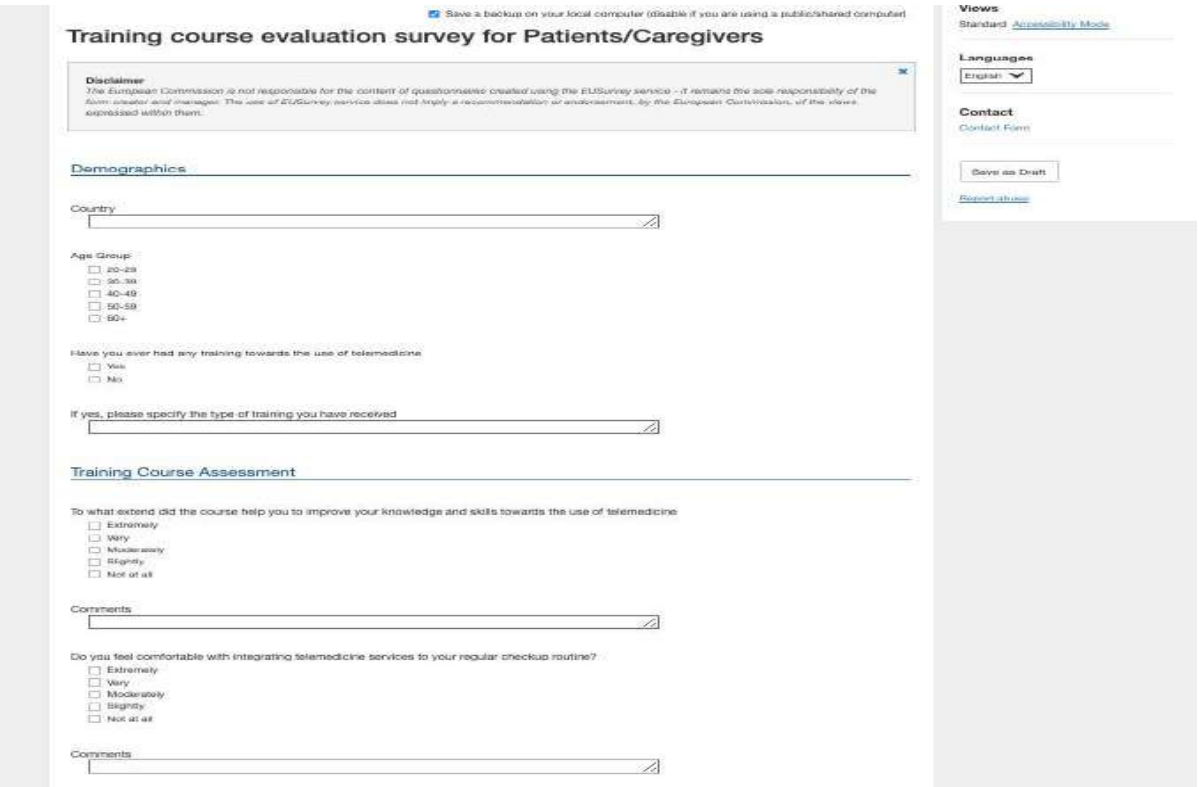
The evaluation of the training program under T8.3 & T8.4 was designed to assess the impact of the educational materials and training activities on empowering HCPs, patients, and

caregivers towards the use of telemedicine. The key objective was to ensure that the training successfully addressed the needs of all stakeholders, improving their awareness of the importance of digital literacy and telehealth proficiency, and leading to more positive perspectives and attitudes towards the adoption of digital health solutions, and particularly telemedicine and teleconsultation in cancer care settings. This evaluation involved metrics, focusing on knowledge and skills acquisition, change of perspectives and trainees' satisfaction.

The Key Performance Indicators (KPIs) selected in collaboration with WP3 (Evaluation WP), to assess the feasibility of the small pilot, were the following:

- % of HCPs that improved their knowledge and skills
- Perceived improvement of knowledge and preparedness by patients
- Satisfaction of participants regarding the setting and delivery of knowledge enhancing actions

The evaluation was conducted using an online survey (Figure 17), accessible via the training platforms, comprising the last module for both HCPs and patient/caregivers' course. The survey assessed various aspects of the training program, including satisfaction with the materials, achievement of the learning objectives, and the practical application of newly acquired skills in real-world telehealth interactions.



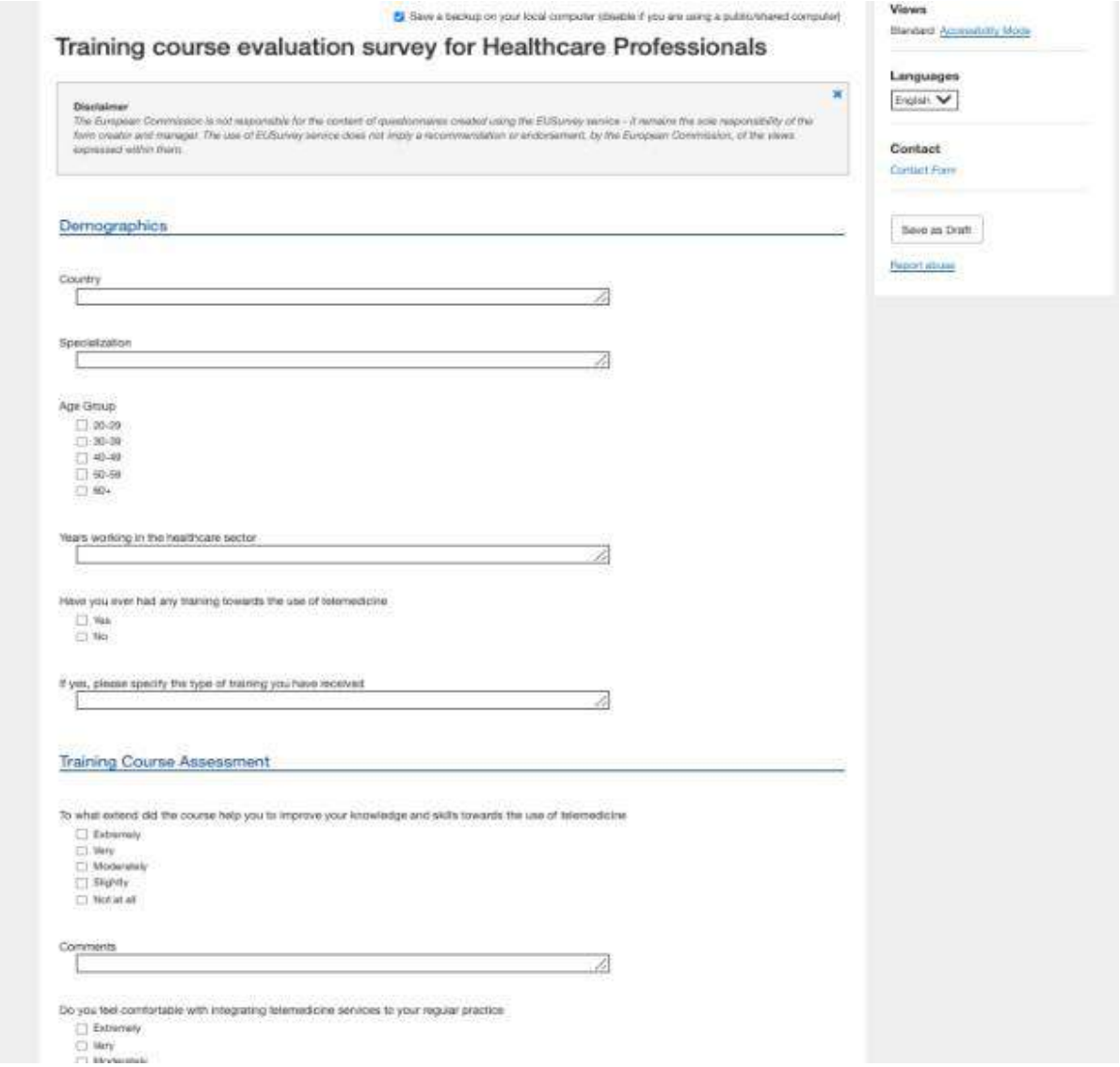


Figure 17. Online survey for collecting participants' feedback, regarding the provided training programme

The survey incorporated a mix of Likert-scale, multiple-choice, and open-ended questions (for additional, qualitative comments), aimed at gathering comprehensive feedback on the participants' experiences. As the entire training programme was not quite extensive and the goal was to provide a short (1-week), self- paced tour on the materials, we aimed at creating an evaluation survey with a few questions, to ensure participants' evaluation was not missing. At the same time, the survey should be based on validated questionnaires to increase the scientific fidelity of the outcomes. To do that, a literature search was conducted to identify questionnaires and previous research, assessing readiness and capacity to implement telemedicine. The resources identified were two telemedicine readiness assessment tools (Bingham et. Al, 2003; TLHT TRA Tool)12. The final questions for the HCPs as well as those for the patients/caregivers were inspired by the content of the tools but modified accordingly

to assess the KPIs identified for the evaluation purposes of the project. Also, the design of the survey was based on two more established evaluation frameworks, the Kirkpatrick's Four-Level Training Evaluation Model and the Technology Acceptance Model (TAM), ensuring a holistic assessment of participants' reactions, learning outcomes, behavior changes, and their overall acceptance of telehealth technologies.

The survey covered the following areas:

Satisfaction with the Training Materials: to measure participants' satisfaction with the content provided in the training modules, the survey included a series of questions designed to measure clarity, relevance, and overall quality:

- "Are you satisfied with the delivery of this training module?", (a scale from Extremely to Not at all), addressing the ease of access, user experience, and relevance of the materials provided to the participants

Effectiveness of Learning Objectives: to assess how well the training helped participants achieve the learning objectives set out in the curriculum. Key questions focused on participants' understanding of telehealth technologies, their confidence in using telehealth platforms, and their ability to communicate effectively during telehealth consultations:

- "To what extent did the course help you improve your knowledge and skills toward the use of telemedicine?" (a scale from Extremely to Not at all). This question directly evaluated how much participants' knowledge had been impacted through the training programme.
- "Do you feel comfortable with integrating telemedicine services into your regular checkup routine?", (a scale from Extremely to Not at all). Participants were asked to rate their comfort levels with telehealth integration, which provided insights into how well the training improved their practical engagement with telehealth technologies.

Application of Skills: to assess the participants' ability to apply what they had learned in their daily interactions with telehealth technologies. The survey featured both quantitative and open-ended questions to capture the extent of practical skills application:

- "Do you feel comfortable with assisting others with their telemedicine needs?", (a scale from Extremely to Not at all), evaluating how well the participants felt equipped to help others navigate telehealth technologies and reflecting the broader impact of the training on peer support and assistance.

Comfort with Telemedicine Integration: focuses on the participants' confidence in integrating telemedicine into their routine healthcare services, both for personal use and for assisting others:

- "Do you feel well informed about the potential benefits and challenges involved in implementing a telemedicine program? (a scale from Extremely to Not at all). Participants were asked to evaluate their understanding of telemedicine's broader impacts, including potential challenges and barriers, as well as its benefits.

Usefulness of Information Provided: to evaluate the overall usefulness of the training materials and whether the content was directly applicable to their roles as HCPs, patients, or caregivers:

- "Did you find the information provided in this module useful?" (a scale from Extremely to Not at all). This was a key question to ensure that the training modules delivered practical, applicable knowledge that could be integrated into the participants' day-to- day healthcare interactions.
- "Do you feel that there was any information missing?" (Yes, No. If, yes, please specify). Participants were invited to specify if they felt any relevant content or topics were not sufficiently covered. This feedback is crucial for future refinements of the training curriculum.

The evaluation methodology employed in the training program ensured the collection of participants' valuable insights into the program's strengths and areas for improvement. The feedback collected through this comprehensive evaluation will inform future updates to the training materials and activities, ensuring continued relevance and effectiveness in addressing the evolving needs of HCPs, patients, and caregivers in the telehealth landscape.

4.3 Results of training activities and lessons learnt

The following section provides an overview of the results from the small-scale piloting of the eCAN JA empowerment training programme conducted with both HCPs and cancer patients (and their caregivers). This testing has aimed to co-validate the educational materials for telehealth training, assess their impact on participants' knowledge, comfort, and satisfaction, and gather insights to further enhance the training program. The feedback from both groups highlights key areas of success and opportunities for improvement in the content and delivery of the telemedicine curriculum.

4.3.1 Healthcare Professionals

The small-scale pilot study of the telemedicine training curriculum involved six HCPs from various specialties (three nurses, one healthcare manager, one neurologist, and one psychiatrist and age groups in Greece (Figure 18). The goal of this pilot was to co-validate with end-users -primary beneficiaries- the final educational materials developed for the training programme, assess their impact on participants' attitudes and satisfaction, and gather insights to improve both the materials and the overall training activities. The participants, with an average of 15 years of experience in healthcare, provided valuable feedback on various aspects of the program.

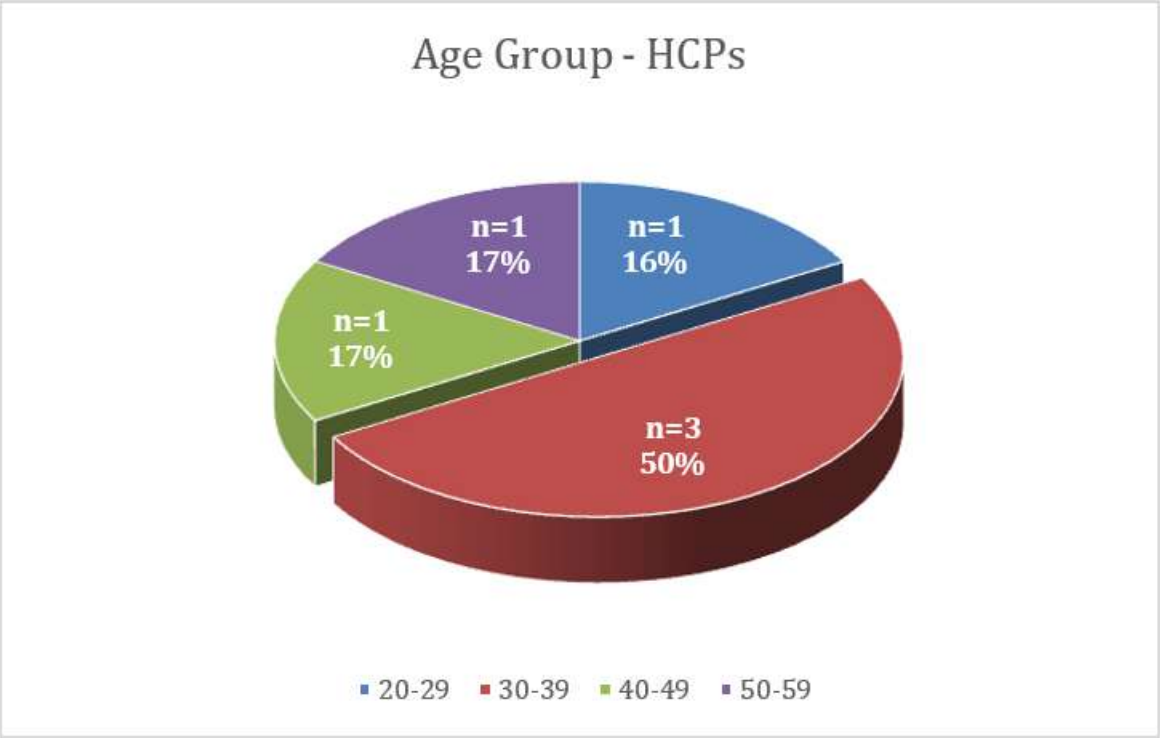


Figure 18. HCPs participating in the training programme (Age distribution)

Participants' exposure to telehealth varied, with younger professionals, particularly nurses, having more experience with telemedicine training. Two primary care nurses and one emergency department nurse, all aged between 20-39, had received telemedicine training through university programs, specialized healthcare administration courses, or seminars during COVID. In contrast, older participants, such as a psychiatrist (50-59) and a healthcare project manager (40-49), had no formal telemedicine training. The training was generally found to be effective, with three participants rating the course as "very" helpful, while two

others rated it as "moderately" helpful (Figure 19). One participant highlighted the comprehensiveness of the course.

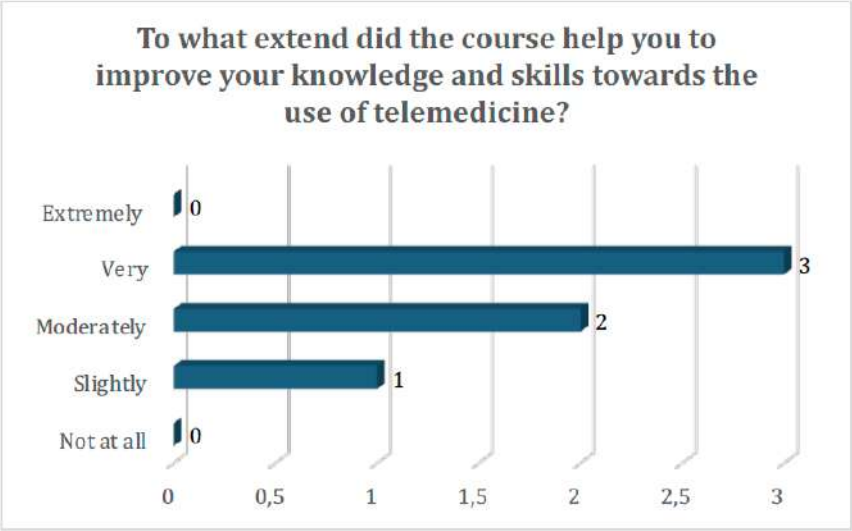


Figure 19. HCPs' answers regarding knowledge and skills improvement

Most participants expressed a high level of comfort with integrating telemedicine into their regular practice, with two participants rating themselves as "extremely" comfortable and four as "very" comfortable. These responses came from HCPs across different age groups and specialties, suggesting broad acceptance of telemedicine (Figure 20). Participants also felt comfortable assisting patients with telemedicine, with two rating themselves as "extremely" comfortable, three as "very" comfortable, and one as "moderately" comfortable. Although the sample size was small, these results indicate general confidence in using telemedicine in patient care.

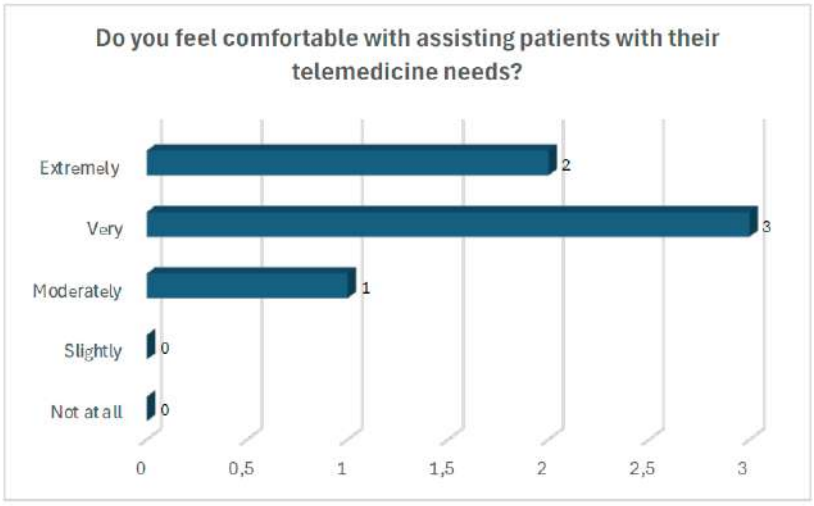


Figure 20. Responses of HCPs on their comfort to assist patients with telemedicine needs

Regarding telehealth implementation challenges, most participants felt well informed about the potential benefits and challenges of implementing a telemedicine program. Half rated themselves as "extremely" informed, while the other half rated themselves as "very" informed. (Figure 21) This feedback suggests that participants have a solid understanding of both the opportunities and obstacles associated with telemedicine, despite the small sample size.

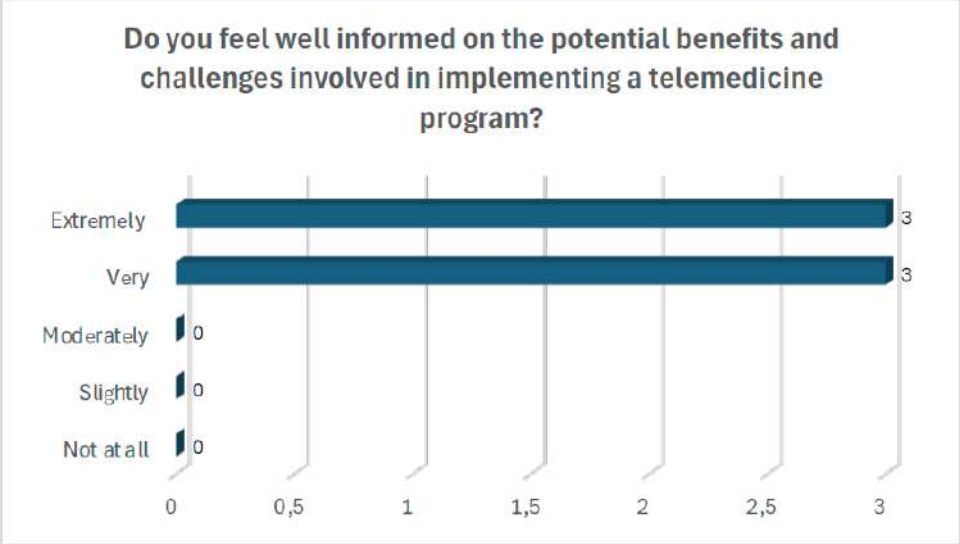


Figure 21. HCPs' responses, regarding their awareness of barriers/opportunities for TM implementation

Moreover, all participants rated the information provided in the module as useful, with one rating it as "extremely" useful and four rating it as "very" useful. No participants felt that there was any missing information, indicating that the module was comprehensive and well-suited to the needs of HCPs from different backgrounds. This uniform satisfaction suggests that the module successfully addressed key topics related to telemedicine. Satisfaction with the delivery of the training module was also high, with five participants rating it as "very" or "extremely" satisfactory (Figure 22). However, one participant provided constructive feedback, suggesting that replacing PDF forms with audiovisual materials might make the learning experience more effective, while also praising the helpfulness of the quizzes.

Figure 22. Level of satisfaction of the participating HCPs, regarding the provided training programme

The overall positive feedback, across various professions and age groups, suggests that the delivery was effective, but there is room for improvement in terms of delivery format to better suit different learning preferences.

4.3.2 Patients/Caregivers

The small-scale pilot of the telehealth training curriculum was conducted with a group of 16 cancer patients, who were instructed to study the course with their caregivers, including 14 from Greece (ELLOK) and 2 from Cyprus (PASYKAF), representing a diverse range of age groups. This pilot, similarly with the one with the HCPs, aimed to co-validate the educational materials developed, assess their impact on participants' attitudes, skills and satisfaction, and gather valuable feedback to improve the training program. The participants age distribution was as follows: 20-29 (19%), 30-39 (37%), 50-59 (19%), and 60+ (25%) (Figure 23). A key finding from this pilot was the significant gap in formal telemedicine education, as the vast majority (n=15) had not received any formal training, with only one participant (aged over 60 y.o.), reporting exposure to telemedicine through YouTube videos.

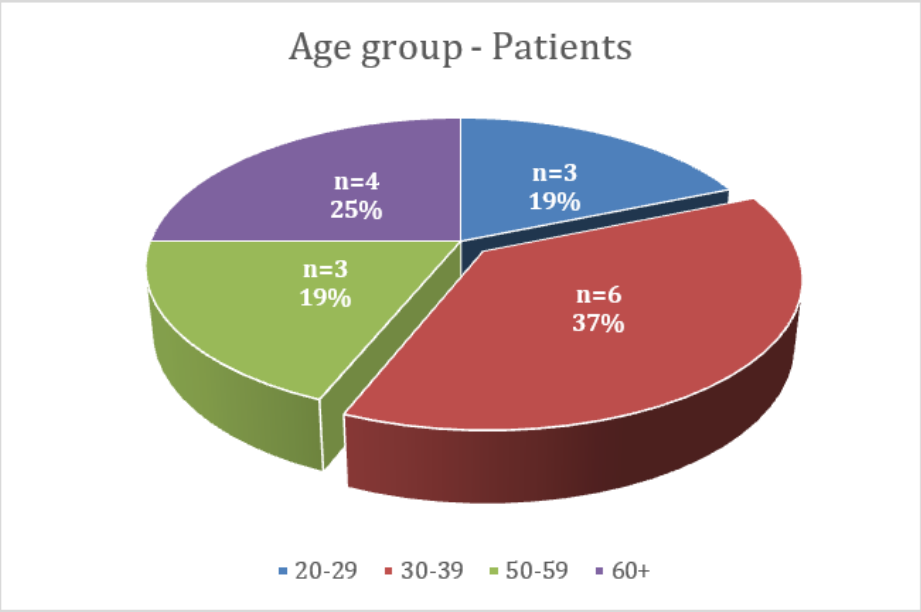


Figure 23. Level of satisfaction of the participating HCPs, regarding the provided training programme

Patient participants largely felt that the course effectively helped them improve their knowledge and skills in telemedicine. Specifically, eight participants rated the course as "very" helpful, and four rated it as "extremely" helpful, indicating overall satisfaction with the course content. Two participants rated the course as "moderately" helpful, with one reporting difficulties related to the absence of visual aids, which made the material harder to digest (Figure 24). This feedback highlights the potential benefit of adding more engaging visual content to enhance the learning experience for all participants.

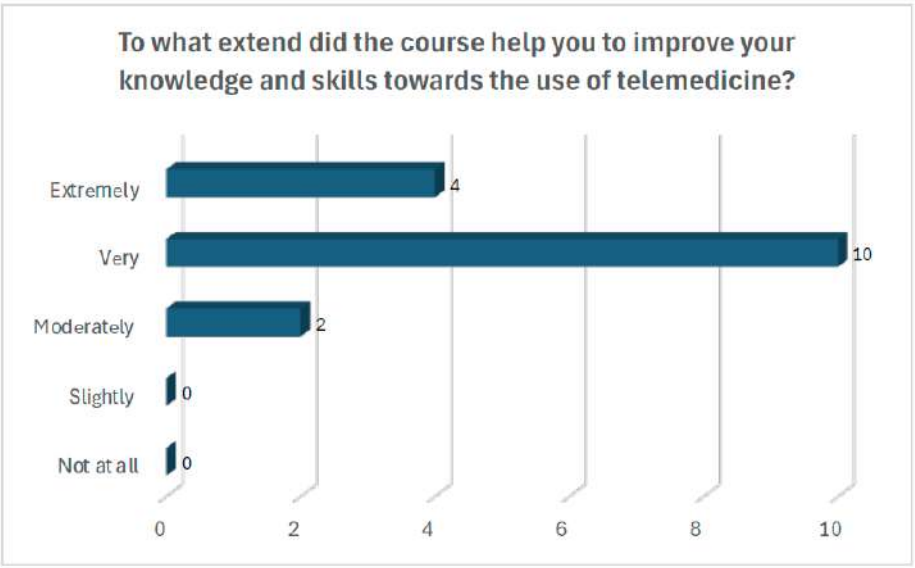


Figure 24. Patients' responses on how effectively the course enhanced their knowledge and skills

In terms of comfort with integrating telemedicine into their regular checkup routines, most participants expressed high levels of comfort. Eleven participants (68.75%) rated themselves as "very" or "extremely" comfortable, while a few (18.75%) felt "moderately" comfortable, and two participants (12.5%) were only "slightly" comfortable (Figure 25).

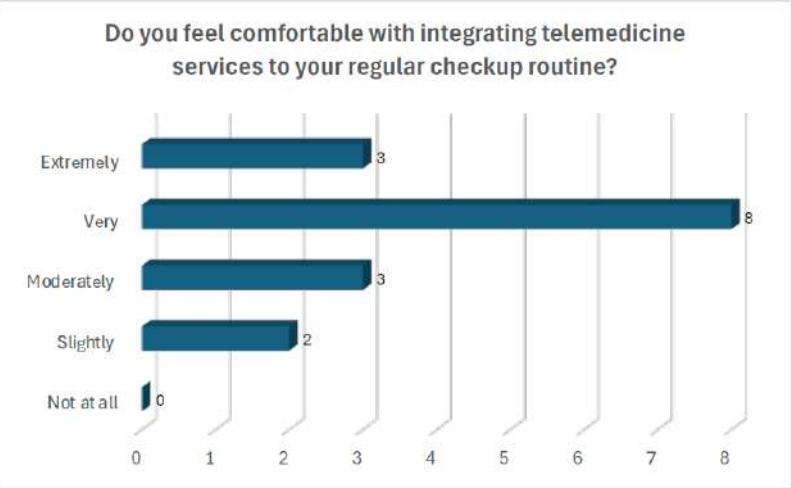


Figure 25. Participants' comfort levels in using telemedicine as part of their regular healthcare routines

Similarly, when asked about their comfort with assisting others in using telemedicine, the responses were generally positive. Eight participants (43.75%) felt "very" comfortable, and three (18.75%) felt "extremely" comfortable. However, there were some participants who reported feeling "moderately" or "slightly" comfortable, and one individual expressed no comfort at all (Figure 26). These responses suggest that while most participants feel confident in using telemedicine, some may benefit from further support, particularly in assisting others with telemedicine needs.

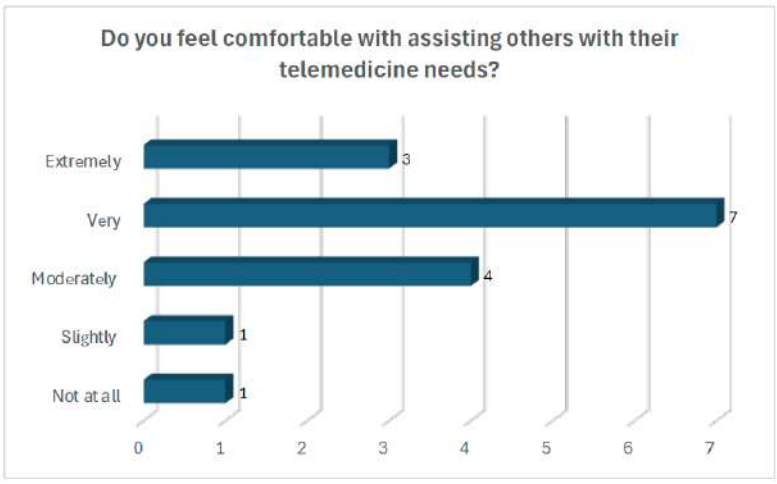


Figure 26. Participants' comfort levels in assisting peers with telemedicine

Moreover, most patients (68.75%) felt “very” informed about the potential benefits and challenges involved in implementing a telemedicine program. A smaller portion (25%) felt "moderately" informed, and only one participant (6.25%) felt "extremely" informed. The responses suggest that while participants generally have a good understanding of telemedicine, there is room for improvement in addressing specific challenges, particularly for those who only felt "moderately" informed (Figure 27). Participants across all age groups responded similarly, indicating that the level of understanding is not necessarily related to age but rather to personal experience and engagement with telemedicine.

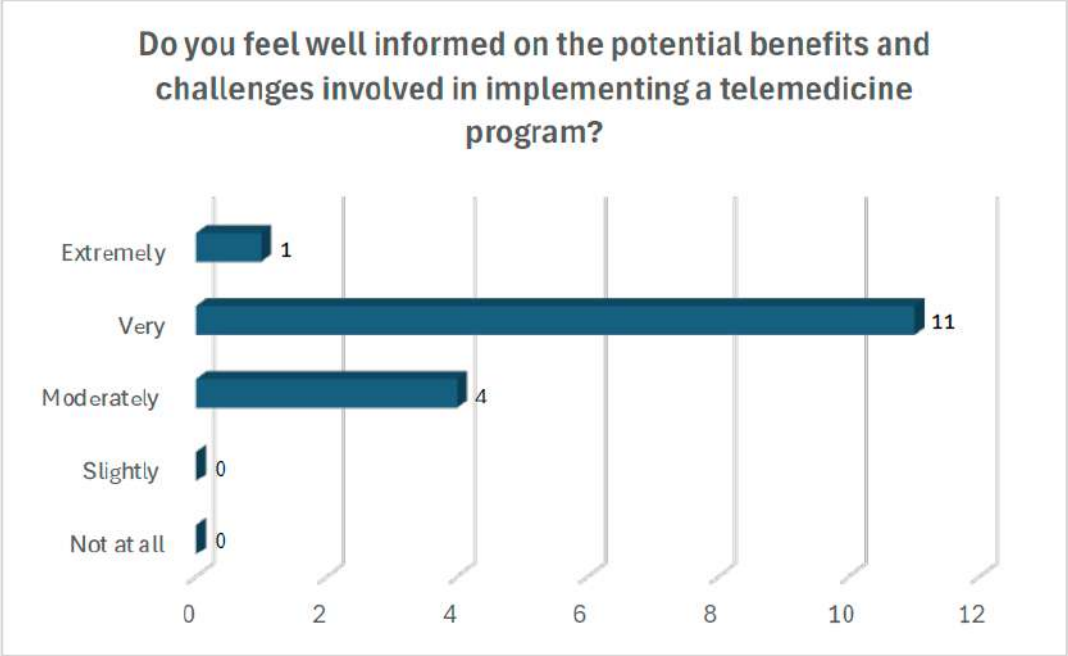


Figure 27. Knowledge of Telemedicine Implementation Benefits and Challenges

Regarding module satisfaction and feedback, the majority of participants (68.75%) found the information provided in the module to be "very" useful, and 25% found it "extremely" useful, reflecting strong overall satisfaction with the content. However, some participants identified areas where additional content could enhance the training. Specifically, there were requests for clearer explanations of technical aspects, more practical examples, and real-world experiences of telehealth users. Additionally, one participant mentioned the need for more specific information about telehealth in Greece, which could provide greater relevance for local users (Figure 28).

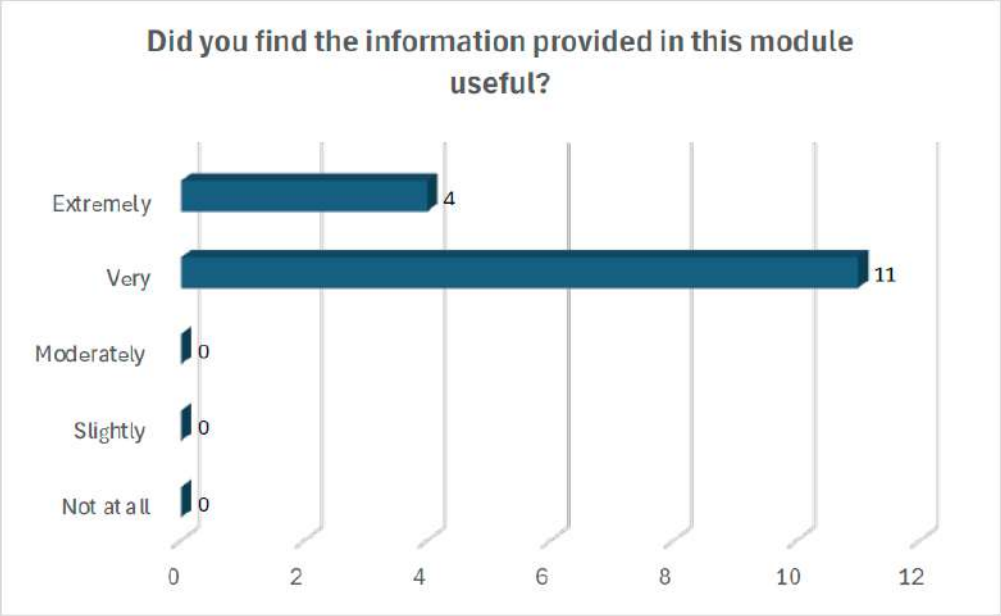


Figure 28. Patients' feedback on how useful they found the provided training module

Finally, most patients (n=11) were satisfied with the delivery of the training module, rating it as "very" or "extremely" satisfactory (Figure 29). However, a few participants noted technical difficulties, with one reporting that the course had "stuck" and could not be continued. Others suggested the inclusion of more multimedia elements, such as videos, to improve engagement.

Figure 29. Patients' satisfaction with the delivery of the training module

These comments indicate that while the module's content was generally well-received, there are areas for improvement in both the format and technical delivery to ensure a smoother and more interactive learning experience.

It is important to highlight that there was no significant correlation between age and the level of comfort or knowledge in using telemedicine services among the patient participants. Responses from participants across different age groups were similar, indicating that the comfort and familiarity with telemedicine may depend more on personal experience or exposure to technology rather than age itself.

Even participants from the older age group (60+) expressed a willingness to engage with telemedicine, though some may benefit from additional support, particularly when it comes to technical aspects or assisting others. This suggests that future telemedicine training programs should focus on individual needs and experiences rather than patients' characteristics such as age.

4.3.3 Lessons Learned and Next Steps

The small-scale pilot studies conducted with HCPs and patients/caregivers provided valuable insights into the strengths and areas for improvement of the telemedicine training curriculum. Participants from both groups generally expressed satisfaction with the course content and delivery, noting that it effectively improved their telemedicine knowledge and skills. Younger HCPs with prior telemedicine experience appeared more familiar with the practices, while older participants, especially those without formal telemedicine training, benefitted greatly from the program. Among patients, the feedback highlighted the importance of telemedicine training, though some faced challenges with technical aspects and suggested the need for more engaging and visual content.

A key takeaway is the need for more interactive and multimedia elements, such as videos and practical examples, to make the learning experience more engaging for both HCPs and patients. Some participants also pointed out technical difficulties with static PDF materials and requested clearer explanations of the practical application of telemedicine, including real-world case studies and region-specific insights, particularly related to Greece.

Based on this feedback, future iterations of the training program will focus on enhancing interactivity and addressing the specific needs identified by participants. Improvements will include the integration of audiovisual content, more practical examples, and greater regional relevance. The positive responses regarding comfort and satisfaction indicate that the

training program has a strong foundation, but targeted adjustments will be made to ensure that it fully supports diverse learning needs and maximizes the potential for telemedicine integration. These refinements will help further develop both healthcare professionals' and patients' capacities to effectively use telemedicine in their practice and care.

5. Discussion

The educational and training activities conducted as part of the eCAN JA represent a significant step forward in addressing the knowledge and digital literacy gaps among HCPs, caregivers, and cancer patients. The program's design, grounded in the principles of inclusivity and user-centered learning, successfully enhanced stakeholders' ability to engage with teleconsultation and telemonitoring technologies—essential tools for the evolving landscape of cancer care.

The training modules developed under T8.3 and T8.4 were tailored to meet the distinct needs of each group of stakeholders. HCPs were trained to acquire the necessary knowledge and skills to integrate telehealth into their clinical workflows, address patient concerns, and build trust through virtual communication (figure 30).

For patients and caregivers, the emphasis was on fostering digital literacy, ensuring equitable access to telehealth, and empowering them to actively participate in remote care (figure 31). The inclusion of patient rights, shared decision-making, and emotional support strategies further enhanced the relevance of the training materials. The comprehensive approach ensured that both the technical and psychosocial challenges of telemedicine were addressed, making the program effective in building confidence and trust in digital healthcare tools.

Figure 30. HCPs identified gaps and needs

Figure 31. Patients and caregivers identified needs

The real-life piloting of the educational materials with targeted end-users, as highlighted in the results section, demonstrated their efficacy. Participants—both HCPs and patients—reported increased comfort and proficiency in understanding and adopting telemedicine tools. The ability to seamlessly integrate telehealth technologies into daily healthcare routines was a recurring theme among the feedback provided by participants. However, certain areas for improvement were identified, such as the need for more engaging and multimedia content (e.g., audiovisual aids) and clearer, region-specific information about telemedicine regulations and practices.

Building on the lessons learned from this pilot phase, future iterations of the training program should focus on refining the content to address specific needs identified by the participants. For example, the inclusion of more interactive elements, such as videos, practical case studies, and region-specific examples, will further enhance the learning experience. Additionally, expanding the training to include more languages and adapting the materials for other cultural contexts across Europe will be critical to ensuring the program's scalability and inclusiveness.

A key priority for future efforts will be to ensure that the training program keeps pace with the rapid advancements in telemedicine technologies. Continuous updates to the curriculum will be necessary to reflect new tools, best practices, and emerging challenges in digital

health, particularly as cancer care becomes more reliant on remote monitoring and virtual consultations.

In conclusion, the eCAN JA's educational and training activities have laid a strong foundation for empowering all stakeholders in cancer care to confidently engage with telehealth technologies. As telemedicine becomes increasingly integral to healthcare delivery, ensuring that these educational efforts evolve alongside technological advancements will be key to realizing the full potential of digital health solutions in improving cancer care outcomes.

6. References

1. Almathami H, Win K, Vlahu-Gjorgievska E, Barriers and Facilitators That Influence Telemedicine-Based, Real-Time, Online Consultation at Patients' Homes: Systematic Literature Review, J Med Internet Res 2020;22(2):e16407, URL: https://www.jmir.org/2020/2/e16407, DOI: 10.2196/16407
2. Almufleh, A., Lee, C., Tsang, M. Y., Gin, K., Tsang, T. S., & Nair, P. (2021). The need for telemedicine integration into adult cardiology training curricula in Canada. Canadian Journal of Cardiology, 37(6), 929- 932.
3. Aslan, A., Mold, F., Van Marwijk, H., & Armes, J. (2024). What are the determinants of older people adopting communicative e-health services: a meta-ethnography. BMC Health Services Research, 24(1), 60.
4. Beheshti L, Kalankesh LR, Doshmangir L, Farahbakhsh M. Telehealth in Primary Health Care: A Scoping Review of the Literature. Perspect Health Inf Manag. 2022 Jan 1;19(1):1n. PMID: 35440933; PMCID: PMC9013222.
5. Bingham JM, Rossi MA, Truong HA. Addressing the need for a telehealth readiness assessment tool as a digital health strategy. J Am Pharm Assoc (2003). 2022 Sep-Oct;62(5):1524-1527. doi: 10.1016/j.japh.2022.04.016. Epub 2022 Apr 26. PMID: 35752603; PMCID: PMC9040437.
6. Calleja, P., Wilkes, S., Spencer, M., & Woodbridge, S. (2022). Telehealth use in rural and remote health practitioner education: an integrative review. Rural and remote health, 22(1), 1-13.
7. Carrillo de Albornoz, S., Sia, K.-L., & Harris, A. (2021). The effectiveness of teleconsultations in primary care: systematic review. In Family Practice (Vol. 39, Issue 1, pp. 168–182). Oxford University Press (OUP). https://doi.org/10.1093/fampra/cmab077
8. Chi NC, Demiris G. A systematic review of telehealth tools and interventions to support family caregivers. J Telemed Telecare. 2015 Jan;21(1):37-44. doi: 10.1177/1357633X14562734. Epub 2014 Dec 4. PMID: 25475220; PMCID: PMC4486048.
9. Creber, A., Leo, D. G., Buckley, B. J., Chowdhury, M., Harrison, S. L., Isanejad, M., ... & TAILOR investigators. (2023). Use of telemonitoring in patient self-management of chronic disease: a qualitative meta- synthesis. BMC cardiovascular disorders, 23(1), 469.

10. Cunha AS, Pedro AR, Cordeiro JV. Facilitators of and Barriers to Accessing Hospital Medical Specialty Telemedicine Consultations During the COVID-19 Pandemic: Systematic Review J Med Internet Res 2023;25:e44188 doi: 10.2196/44188PMID: 37262124PMCID: 10337395
11. Cox A, Lucas G, Marcu A, Piano M, Grosvenor W, Mold F, Maguire R, Ream E, Cancer Survivors' Experience With Telehealth: A Systematic Review and Thematic Synthesis, J Med Internet Res 2017;19(1):e11, URL: https://www.jmir.org/2017/1/e11, DOI: 10.2196/jmir.6575
12. Dafli, E., Fountoukidis, I., Hatzisevastou-Loukidou, C. et al. Curricular integration of virtual patients: a unifying perspective of medical teachers and students. BMC Med Educ 19, 416 (2019). https://doi.org/10.1186/s12909-019-1849-7
13. De Simone, S., Franco, M., Servillo, G. et al. Implementations and strategies of telehealth during COVID- 19 outbreak: a systematic review. BMC Health Serv Res 22, 833 (2022). https://doi.org/10.1186/s12913-
14. 022-08235-4
15. Fitzpatrick, P. J. (2023). Improving health literacy using the power of digital communications to achieve better health outcomes for patients and practitioners. In Frontiers in Digital Health (Vol. 5). Frontiers Media SA. https://doi.org/10.3389/fdgth.2023.1264780
16. Ghaddaripouri, K., Mousavi Baigi, S. F., Abbaszadeh, A., & Mazaheri Habibi, M. R. (2023). Attitude, awareness, and knowledge of telemedicine among medical students: A systematic review of cross- sectional studies. Health Science Reports, 6(3), e1156.
17. Gonçalves R, Pagano A, Reis Z, Brackstone K, Lopes T, Cordeiro S, Nunes J, Afagbedzi S, Head M, Meira Jr W, Batchelor J, Ribeiro A, Usability of Telehealth Systems for Noncommunicable Diseases in Primary Care From the COVID-19 Pandemic Onward: Systematic Review, J Med Internet Res 2023;25:e44209, URL: https://www.jmir.org/2023/1/e44209, DOI: 10.2196/44209
18. González-Fraile, E., Ballesteros, J., Rueda, J. R., Santos-Zorrozúa, B., Solà, I., & McCleery, J. (2021). Remotely delivered information, training and support for informal caregivers of people with dementia. Cochrane Database of Systematic Reviews, (1).
19. Griffith, B., Archbold, H., Sáez Berruga, I., Smith, S., Deakin, K., Cogan, N., ... Flowers, P. (2022). Frontline experiences of delivering remote mental health supports during the COVID-19 pandemic in Scotland: innovations, insights and lessons learned from

mental health workers. Psychology, Health & Medicine, 28(4), 964–979. https://doi.org/10.1080/13548506.2022.2148698

20. Griffith, B., Archbold, H., Sáez Berruga, I., Smith, S., Deakin, K., Cogan, N., ... & Flowers, P. (2023). Frontline experiences of delivering remote mental health supports during the COVID-19 pandemic in Scotland: innovations, insights and lessons learned from mental health workers. Psychology, Health & Medicine, 28(4), 964-979.
21. Jacob C, Sezgin E, Sanchez-Vazquez A, Ivory C, Sociotechnical Factors Affecting Patients' Adoption of Mobile Health Tools: Systematic Literature Review and Narrative Synthesis, JMIR Mhealth Uhealth 2022;10(5):e36284, URL: https://mhealth.jmir.org/2022/5/e36284, DOI: 10.2196/36284
22. Kassam I, Ilkina D, Kemp J, Roble H, Carter-Langford A, Shen N. Patient Perspectives and Preferences for Consent in the Digital Health Context: State-of-the-art Literature Review J Med Internet Res 2023;25:e42507 doi: 10.2196/42507
23. Layfield E, Triantafillou V, Prasad A, Deng J, Shanti RM, Newman JG, Rajasekaran K. Telemedicine for head and neck ambulatory visits during COVID-19: Evaluating usability and patient satisfaction. Head Neck. 2020 Jul;42(7):1681-1689. doi: 10.1002/hed.26285. Epub 2020 Jun 1. PMID: 32476228; PMCID: PMC7300847.
24. Levin-Zamir, D., & Bertschi, I. (2018). Media health literacy, eHealth literacy, and the role of the social environment in context. International journal of environmental research and public health, 15(8), 1643.
25. Lloyd, J., Lee, C.J. Use of Telemedicine in Care of Hematologic Malignancy Patients: Challenges and Opportunities. Curr Hematol Malig Rep 17, 25–30 (2022). https://doi.org/10.1007/s11899-021-00642-4
26. Loeb, Alexander E. MD; Rao, Sandesh S. MD; Ficke, James R. MD; Morris, Carol D. MD; Riley, Lee H. III MD; Levin, Adam S. MD. Departmental Experience and Lessons Learned With Accelerated Introduction of Telemedicine During the COVID-19 Crisis. Journal of the American Academy of Orthopaedic Surgeons 28(11):p e469-e476, June 1, 2020. | DOI: 10.5435/JAAOS-D-20-00380
27. Lundereng E, Nes A, Holmen H, Winger A, Thygesen H, Jøranson N, Borge C, Dajani O, Mariussen K, Steindal S, Health Care Professionals' Experiences and Perspectives on Using Telehealth for Home-based Palliative Care: Scoping Review, J Med Internet Res 2023;25:e43429, URL: https://www.jmir.org/2023/1/e43429, DOI: 10.2196/43429

28. Nouri, S. S., et al. (2020). "Addressing Equity in Telemedicine for Chronic Disease Management During the COVID-19 Pandemic." Journal of General Internal Medicine, 35(8), 2349–2352.
29. O'Connor, M., et al. (2021). "Telemedicine in the Age of COVID-19: Lessons from the Pandemic and Implications for Future Practice." Journal of Telemedicine and Telecare, 27(9), 569-578.
30. Odendaal WA, Anstey Watkins J, Leon N, Goudge J, Griffiths F, Tomlinson M, Daniels K. Health workers' perceptions and experiences of using mHealth technologies to deliver primary healthcare services: a qualitative evidence synthesis. Cochrane Database Syst Rev. 2020 Mar 26;3(3):CD011942. doi: 10.1002/14651858.CD011942.pub2. PMID: 32216074; PMCID: PMC7098082.
31. Oudkerk Pool, M. D., Hooglugt, J. L. Q., Schijven, M. P., Mulder, B. J., Bouma, B. J., de Winter, R. J., ... & Winter, M. M. (2021). Review of digitalized patient education in cardiology: a future ahead?. Cardiology, 146(2), 263-271.
32. Pang N, Lau J, Fong S, Wong C, Tan K, Telemedicine Acceptance Among Older Adult Patients With Cancer: Scoping Review, J Med Internet Res 2022;24(3):e28724, URL: https://www.jmir.org/2022/3/e28724, DOI: 10.2196/28724
33. Pourmand, A., Ghassemi, M., Sumon, K., Amini, S. B., Hood, C., & Sikka, N. (2021). Lack of telemedicine training in academic medicine: are we preparing the next generation?. Telemedicine and e-Health, 27(1), 62-67.
34. Ramachandran M, Brinton C, Wiljer D, Upshur R, Gray CS. The impact of eHealth on relationships and trust in primary care: a review of reviews. BMC Prim Care. 2023 Nov 3;24(1):228. doi: 10.1186/s12875-023- 02176-5. PMID: 37919688; PMCID: PMC10623772.
35. Risling T, Martinez J, Young J, Thorp-Froslie N, Evaluating Patient Empowerment in Association With eHealth Technology: Scoping Review J Med Internet Res 2017;19(9):e329, URL: https://www.jmir.org/2017/9/e329, DOI: 10.2196/jmir.7809
36. Rotker, K., & Velez, D. (2020). Where will telemedicine go from here?. Fertility and Sterility, 114(6), 1135- 1139.
37. Shaver, J. (2022). The state of telehealth before and after the COVID-19 pandemic. Primary Care: Clinics in Office Practice, 49(4), 517-530.
38. Smith B, Magnani JW. New technologies, new disparities: The intersection of electronic health and digital health literacy. Int J Cardiol. 2019 Oct 1;292:280-282.

doi: 10.1016/j.ijcard.2019.05.066. Epub 2019 May 28. PMID: 31171391; PMCID: PMC6660987.

39. Smith, A. C., et al. (2022). "Telehealth During COVID-19: Summary of Early Findings and Implications for Public Health Practice." Public Health Reports, 137(1), 183–192.
40. Taylor, M., Abbott, L., & Miller, R. (2020). Practice guidelines for teledermatology in Australia. Australas. J. Dermatol.
41. Tuot DS, Boulware LE. Telehealth Applications to Enhance CKD Knowledge and Awareness Among Patients and Providers. Adv Chronic Kidney Dis. 2017 Jan;24(1):39-45. doi: 10.1053/j.ackd.2016.11.017. PMID: 28224941; PMCID: PMC5324778.
42. Vitiello, E., & Sowa, N. A. (2022). Socially distanced emergencies: clinicians' experience with Tele- behavioral health safety planning. Psychiatric Quarterly, 93(3), 905-914.
43. Wahezi SE, Kohan LR, Spektor B, Brancolini S, Emerick T, Fronterhouse JM, Luedi MM, Colon MA, Kitei PM, Anitescu M, Goeders NE, Patil S, Siddaiah H, Cornett EM, Urman RD, Kaye AD. Telemedicine and current clinical practice trends in the COVID-19 pandemic. Best Pract Res Clin Anaesthesiol. 2021 Oct;35(3):307-
44. 319. doi: 10.1016/j.bpa.2020.11.005. Epub 2020 Nov 16. PMID: 34511221; PMCID: PMC7667401.
45. Waseh S, Dicker AP Telemedicine Training in Undergraduate Medical Education: Mixed-Methods Review JMIR Med Educ 2019;5(1):e12515 doi: 10.2196/12515
46. Wasilewski, A., Mohile, N. Tele-neuro-oncology: Current Practices and Future Directions. Curr Oncol Rep 24, 99–103 (2022). https://doi.org/10.1007/s11912-021-01176-x
47. West, H.(., Barzi, A. & Wong, D. Telemedicine in Cancer Care Beyond the COVID-19 Pandemic: Oncology 2.0?. Curr Oncol Rep 24, 1843–1850 (2022). https://doi.org/10.1007/s11912-022-01332-x
48. Zanaboni, P., & Wootton, R. (2021). "Adoption of Telemedicine: From Pilot Stage to Routine Practice." Journal of Telemedicine and Telecare, 25(2), 37–44.

7. Annexes

7.1 ANNEX I – List of papers for scoping review (Health Professionals)

RN	DB	YR	UI	TI	SO	FA	PT	PU (publisher)
1	Google Scholar	2022	https://www.tandfonline.com/doi/full/10.1080/13548506.2022.2148698	Frontline experiences of delivering remote mental health supports during the COVID-19 pandemic in Scotland: innovations, insights and lessons learned from mental health workers	Psychology, Health & Medicine	Bethany Griffith,Heather Archbold,Isabel Sáez Berruga,Samantha Smith,Karen Deakin,Nicola CoganORCID Icon,Gary Tanner &Paul FlowersORCID Icon show less	Journal Article	Taylor and Francis Online
2	Pubmed	2022	https://link.springer.com/article/10.1007/s11126-022-10000-z	Socially Distanced Emergencies: Clinicians' Experience with Tele-behavioral Health Safety Planning	Psychiatric Quarterly	Evan Vitiello & Nathaniel A Sowa	Journal Article	Springer
3	Wiley Library	2023	https://onlinelibrary.wiley.com/doi/10.1002/hsr2.1156	Attitude, awareness, and knowledge of telemedicine among medical students: A systematic review of cross-sectional studies	Health Science Reports	Kosar Ghaddaripouri 1, Seyyedeh Fatemeh Mousavi Baigi 2 3, Ali Abbaszadeh 4, Mohammad Reza Mazaheri Habibi 1	Journal Article	Wiley
4	Pubmed	2021	https://www.liebertpub.com/doi/10.1089/tmj.2020.0357?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub+0pubmed	Telehealth Training During the COVID-19 Pandemic: A Feasibility Study of Large Group Multiplatform Telesimulation Training	Telemedicine and e-Health	Brianna K Brei 1 2, Sara Neches 1, Megan M Gray 1, Sarah Handley 1, Mark Castera 1, Anna Hedstrom 1, Ravi D'Cruz 1, Sarah Kolnik 1, Thomas Strandjord 1, Ulrike Mietzsch 1, Christine Cooper 1, Jami M Moore 1, Zeenia Billimoria 1, Taylor Sawyer 1, Rachel Umoren 1	Journal Article	Liebert Pubs
5	Pubmed	2021	https://www.liebertpub.com/doi/10.1089/tmj.2019.0287?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed	Lack of Telemedicine Training in Academic Medicine: Are We Preparing the Next Generation?	Telemedicine and e-Health	Ali Pourmand 1, Mateen Ghassemi 1, Kazi Sumon 1, Saeid B Amini 1, Colton Hood 1, Neal Sikka 1	Journal Article	Liebert Pubs
6	Pubmed	2021	https://onlinecjc.ca/article/S0828-282X(21)00130-6/abstract	The Need for Telemedicine Integration Into Adult Cardiology Training Curricula in Canada	Canadian Journal of Cardiology	Aws Almufleh, MBBS, MPH, FRCPC Christopher Lee, MD, FRCPC Michael Yc Tsang, MD, FRCPC Kenneth Gin, MD, FRCPC, FCCS Teresa S.M. Tsang, MD, FRCPC Parvathy Nair, MD, FRCPC	Journal Article	Elsevier
7	Pubmed	2020	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7098082/	Health workers' perceptions and experiences of using mHealth technologies to deliver primary healthcare services: a qualitative evidence synthesis	Cochrane Database Syst Rev	Willem A Odendaal,corresponding author Jocelyn Anstey Watkins, Natalie Leon, Jane Goudge, Frances Griffiths, Mark Tomlinson, Karen Daniels,	Meta-Analysis	Cochrane Library
8	ScienceDirect	2022	https://www.sciencedirect.com/science/article/pii/S0095454322000239?via%3Dihub	The State of Telehealth Before and After the COVID-19 Pandemic	Primary Care: Clinics in Office Practice	Julia Shaver 1	Review Article	Elsevier
9	ScienceDirect	2020	https://www.sciencedirect.com/science/article/pii/S1526054220300944?via%3Dihub	COVID-19 and telehealth, education, and research adaptations	Paediatric Respiratory Reviews	N. Romesh Wijesooriya a, Vimal Mishra b, Paul L.P. Brand c, Bruce K Rubin	Review Article	Elsevier
10	Pubmed	2022	https://link.springer.com/article/10.1007/s11912-021-01176-x	Tele-neuro-oncology: Current Practices and Future Directions	Neuro-oncology	Andrea Wasilewski & Nimish Mohile	Review Article	Springer
11	Wiley Library	2022	https://asmepublications.onlinelibrary.wiley.com/doi/10.1111/tct.13519	Teleconsultation in health and social care professions education: A systematic review	The Clinical Teacher	Lisa-Christin Wetzlmair, Veronica O'Carroll, Andrew S. O'Malley, Stuart Murray	Review Article	ASME Publications

12	Pubmed	2017	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5324778/	Telehealth Applications to Enhance CKD Knowledge and Awareness Among Patients and Providers	Telehealth in Nephrology	Delphine S Tuot 1, L Ebony Boulware 2	Review Article	Elsevier
13	Wiley Library	2020	https://onlinelibrary.wiley.com/doi/10.1111/ajd.13301	Practice guidelines for teledermatology in Australia	Australasian Journal of Dermatology	Lisa M Abbott 1 2, Robert Miller 1, Monika Janda 3, Haley Bennett 1, Monica Taylor 4, Chris Arnold 1, Stephen Shumack 1, H Peter Soyer 5, Liam J Caffery 5	Review Article	Wiley
14	ScienceDirect	2020	https://www.sciencedirect.com/science/article/pii/S1871402120301764?via%3Dihub	Pitfalls in telemedicine consultations in the era of COVID 19 and how to avoid them	Diabetes and COVID-19 Infection: Basic and Clinical Research	Karthikeyan Iyengar a, Vijay K. Jain b, Raju Vaishya c	Review Article	Elsevier
15	Pubmed	2021	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7667401/	Telemedicine and current clinical practice trends in the COVID-19 pandemic	Best Pract Res Clin Anaesthesiol.	Sayed E. Wahezi, MD, Associate Professor,a Lynn R. Kohan, MD, Associate Professor,b Boris Spektor, MD, Assistant Professor,c Scott Brancolini, MD, MPH, Associate Professor,d Trent Emerick, MD, MBA, Assistant Professor,e Jean M. Fronterhouse, MS, LAC, Clinical Instructor Specialist,f Markus M. Luedi, MD, Consultant Anaesthetist,g Marc A. Colon, MD, Associate Professor,f Paul M. Kitei, MD, Clinical Instructor,h Magdalena Anitescu, MD, PhD, Professor,i Nicholas E. Goeders, PhD, Professor and Head,j Shilpavedi Patil, MD, Associate Professor,k Harish Siddaiah, MD, Assistant Professor,k Elyse M. Cornett, PhD, Assistant Professor,k Richard D. Urman, MD, Associate Professor,l,* and Alan D. Kaye, MD, PhD, Pain Fellowship Program Director, Professor, Provost, and Vice Chancellorm	Review Article	Elsevier
16	ScienceDirect	2021	https://www.sciencedirect.com/science/article/pii/S1386505621000964?via%3Dihub	From telehealth to virtual primary care in Australia? A Rapid scoping review	International Journal of Medical Informatics	Jitendra Jonnagaddala, Myron Anthony Godinho, Siaw-Teng Liaw	Review Article	Elsevier
17	Pubmed	2023	https://www.thepermanentejournal.org/doi/10.7812/TPP/23.022?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed	Benefits and Challenges of Remote Patient Monitoring as Perceived by Health Care Practitioners: A Systematic Review	The Permanente Journal	Luiza Palmieri Serrano, MS, Karla C Maita, MD, Francisco R Avila, MD, Ricardo A Torres-Guzman, MD, John P Garcia, MD, Abdullah S Eldaly, MD, Clifton R Haider, PhD, Christopher L Felton, MS, Margaret R Paulson, DO, Michael J Maniaci, MD https://orcid.org/0000-0002-2731- 1787, and Antonio J Forte, MD, PhD	Review Article	The Permanente Journal
18	Pubmed	2023	https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2023.1060961/full	Tele-psychotherapy during the COVID-19 pandemic: a mini-review	Frontiers in Psychiatry	Nicolas Tajan 1 * Maud Devs,Maud Devès 2,3 Rmy PotierRémy Potier 4	Review Article	Frontiers
19	WileY Library	2023	https://onlinelibrary.wiley.com/doi/10.1002/jclp.23477	Adjusting to a new reality: Consensual qualitative research on therapists' experiences with teletherapy	Journal of Clinical Psychology	Vera Békés, Katie Aafjes-van Doorn, Kailey E. Roberts, Karl Stukenberg, Tracy Prout, Leon Hoffman	Review Article	Wiley
20	Pubmed	2021	https://www.mayoclinicproceedings.org/article/S0025-6196(20)31379-3/fulltext	Telemedicine and Team-Based Care: The Perils and the Promise	Mayo Clinic Proccedings	Christine A. Sinsky, MD James T. Jerzak, MD Kevin D. Hopkins, MD	Review Article	Elsevier

21	Pubmed	2020	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7283108/	Psychiatrist experience of remote consultations by telephone in an outpatient psychiatric department during the COVID-19 pandemic	Irish Journal of Psychological Medicine	C. Olwill,* D. Mc Nally, and L. Douglas	Review Article	Cambridge University Press
22	Pubmed	2023	https://www.jmir.org/2023/1/e4342_9	Health Care Professionals' Experiences and Perspectives on Using Telehealth for Home-based Palliative Care: Scoping Review	Journal of Medical Internet Research	Elias David Lundereng 1 2, Andréa Aparecida Gonçalves Nes # 1, Heidi Holmen # 3 4, Anette Winger 3, Hilde Thygesen 5 6, Nina Jøranson 5, Christine Råheim Borge 7 8, Olav Dajani 2, Kari L Mariussen 1, Simen A Steindal 1 5	Review Article	JMIR Publications
23	Pubmed	2020	https://journals.lww.com/jaaos/fulltext/2020/06010/departmental_experience_and_lessons_learned_with.6.aspx	Departmental Experience and Lessons Learned With Accelerated Introduction of Telemedicine During the COVID-19 Crisis	Journal of the American Academy of Orthopaedic Surgeons	Alexander E Loeb 1, Sandesh S Rao, James R Ficke, Carol D Morris, Lee H Riley 3rd, Adam S Levin	Review Article	Journal of the American Academy of Orthopaedic Surgeons
24	Pubmed	2023	https://www.jmir.org/2023/1/e4420_9	Usability of Telehealth Systems for Noncommunicable Diseases in Primary Care From the COVID-19 Pandemic Onward: Systematic Review	Journal of Medical Internet Research	Roberta Lins Gonçalves # 1 2, Adriana Silvina Pagano # 3, Zilma Silveira Nogueira Reis # 3, Ken Brackstone # 4, Tainá Costa Pereira Lopes # 2, Sarah Almeida Cordeiro # 2, Julia Macedo Nunes # 3, Seth Kwaku Afagbedzi # 5, Michael Head # 4, Wagner Meira Jr # 3, James Batchelor # 4, Antônio Luiz Pinho Ribeiro # 3	Review Article	JMIR Publications
25	Pubmed	2023	https://mhealth.jmir.org/2023/1/e5_0419	Factors Influencing the Acceptance and Adoption of Mobile Health Apps by Physicians During the COVID-19 Pandemic: Systematic Review	Journal of Medical Internet Research	Sultan Alsahli 1 2, Su-Yin Hor 1, Mary Lam 3	Review Article	JMIR Publications
26	Pubmed	2023	https://www.jmir.org/2023/1/e4800_0	Mapping Factors That Affect the Uptake of Digital Therapeutics Within Health Systems: Scoping Review	Journal of Medical Internet Research	Robin van Kessel # 1 2, Andres Roman-Urrestarazu # 3 4, Michael Anderson 1, Ilias Kyriopoulos 1, Samantha Field 5, Giovanni Monti 1, Shelby D Reed 6, Milena Pavlova 7, George Wharton 1, Elias Mossialos 1 8	Review Article	JMIR Publications
27	Pubmed	2023	https://www.sciencedirect.com/science/article/pii/S0168851023000647?via%3Dihub	Telemonitoring in Portugal: where do we stand and which way forward?	Health Policy	Rafael Miranda a b, Mónica Duarte Oliveira a c, Filipa Matos Baptista b, Isabel Albuquerque d	Review Article	Elsevier
28	Pubmed	2019	https://mededu.jmir.org/2019/1/e12_515/	Telemedicine Training in Undergraduate Medical Education: Mixed-Methods Review	JMIR Medical Education	Shayan Waseh # 1, Adam P Dicker # 2 3	Review Article	JMIR Publications
29	Pubmed	2021	https://link.springer.com/article/10.1007/s10620-021-06874-x	Successful Distancing: Telemedicine in Gastroenterology and Hepatology During the COVID-19 Pandemic	Digestive Diseases and Sciences	Abhilash Perisetti 1, Hemant Goyal 2 3	Review Article	Springer
30	Pubmed	2022	https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-08235-4	Implementations and strategies of telehealth during COVID-19 outbreak: a systematic review	BMC Health Services Research	Stefania De Simone, Massimo Franco, Giuseppe Servillo & Maria Vargas	Review Article	Springer
31	Pubmed	2022	https://www.rrh.org.au/journal/article/6467	Telehealth use in rural and remote health practitioner education: an integrative review	Rural and Remote Health	Pauline Calleja 1, Susan Wilkes 2, Melinda Spencer 3, Steven Woodbridge 4	Review Article	RRH

32	Pubmed	2022	https://www.frontiersin.org/articles/10.3389/fsurg.2022.911206/full	Telemedicine and Telehealth in Urology: Uptake, Impact and Barriers to Clinical Adoption	Frontiers in Surgery	Nithesh Naik 1 2, Shreyas Raghavan Nandyal 3, Sanjana Ganesh Nayak 4, Milap Shah 2 5, Sufyan Ibrahim 2 6, B M Zeeshan Hameed 2 7, Ananth Patil 8, Gopika Suresh 6, Pritam A Shetty 6, Bhavan Prasad Rai 2 9, Rajeev Tp 10, Patrick Rice 11, Suraj Jayadeva Reddy 12, Nandakishore Bhat 7, Deepesh Garg 13, Piotr Chlosta 14, Bhaskar K Somani 2 11	Review Article	Frontiers
33	Pubmed	2017	https://www.dovepress.com/telehealth-and-ehealth-in-nurse-practitioner-training-current-perspect-peer-reviewed-fulltext-article-AMEP	Telehealth and eHealth in nurse practitioner training: current perspectives	Advances in Medical Education and Practice	Carolyn M Rutledge,1 Karen Kott,2 Patty A Schweickert,3 Rebecca Poston,1 Christianne Fowler,1 Tina S Haney1	Review Article	DOVEpress

7.2 ANNEX II – List of papers for scoping review (Patients, Caregivers)

RN	DB	YR	UI	TI	SO	FA	PT	PU (publisher)
1	Pubmed	2022	https://academic.oup.com/fampra/article/39/1/168/6323555?login=false	The effectiveness of teleconsultations in primary care: systematic review	Family Practice	Sara Carrillo de Albornoz, Kah-Ling Sia, Anthony Harris	Journal Article	Oxford Academic
2	Pubmed	2017	https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-017-2257-5	A qualitative study of Telehealth patient information leaflets (TILs): are we giving patients enough information?	BMC Health Services Research	Reem Kayyali, Iman Hesso, Evelyn Ejiko & Shereen Nabhani Gebara	Journal Article	Springer
3	Pubmed	2022	https://www.jmir.org/2022/8/e37728/	Effects of Video-Based Patient Education and Consultation on Unplanned Health Care Utilization and Early Recovery After Coronary Artery Bypass Surgery (IMPROV-ED): Randomized Controlled Trial	Journal of Medical Internet Research	Gijs van Steenbergen 1, Dennis van Veghel 1, Dideke van Lieshout 2, Merel Sperwer 2, Joost Ter Woorst 1, Lukas Dekker 1 3	Journal Article	JMIR Publications
4	Pubmed	2020	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7300847/	Telemedicine for head and neck ambulatory visits during COVID-19: Evaluating usability and patient satisfaction	Head Neck	Eleanor Layfield, BA, 1 Vasiliki Triantafillou, MD, 2 Aman Prasad, BS, 1 Jie Deng, PhD, RN, OCN, FAAN, 3 Rabie M. Shanti, DMD, MD, 2 Jason G. Newman, MD, 2 and Karthik Rajasekaran, MDcorresponding author 2	Journal Article	Wiley Online Library
5	Pubmed	2021	https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006440.pub3/full	Remotely delivered information, training and support for informal caregivers of people with dementia	Cochrane Database of Systematic Reviews	Eduardo González-Fraile 1, Javier Ballesteros 2, José-Ramón Rueda 3, Borja Santos-Zorrozúa 4, Ivan Solà 5, Jenny McCleery 6	Journal Article	Cochrane Library
6	Pubmed	2019	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6660987/	New technologies, new disparities: the intersection of electronic health and digital health literacy	International Journal of Cardiology	Benjamin Smith, MD1 and Jared W. Magnani, MD, MSc2	Review Article	Elsevier
7	Pubmed	2022	https://ascopubs.org/doi/10.1200/CCI.22.00005?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed	Health Literacy and eHealth: Challenges and Strategies	JCO Clinical Cancer Informatics	Hajar Hasannejadasl 1, Cheryl Roumen 1, Yolba Smit 2, Andre Dekker 1, Rianne Fijten 1	Review Article	ASCO Publications

8	Pubmed	2016	https://journals.sagepub.com/doi/full/10.1177/1357633X16674087?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org	Evaluating barriers to adopting telemedicine worldwide: A systematic review	Journal of Telemedicine and Telecare	Clemens Scott Kruse 1, Priyanka Karem 1, Kelli Shifflett 1, Lokesh Vegi 1, Karuna Ravi 1, Matthew Brooks	Review Article	Sage Journals
9	Pubmed	2015	https://pubmed.ncbi.nlm.nih.gov/26343551/	Interactive telemedicine: effects on professional practice and health care outcomes	Cochrane Database of Systematic Reviews	Gerd Flodgren 1, Antoine Rachas, Andrew J Farmer, Marco Inzitari, Sasha Shepperd	Review Article	Cochrane Library
10	Pubmed	2019	https://onlinelibrary.wiley.com/doi/10.1002/nop2.382	Promoting self-efficacy in patients with chronic disease beyond traditional education: A literature review	Nursing Open	Holly Farley	Review Article	Wiley Online Library
11	Pubmed	2021	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8430850/	Telehealth Interventions and Outcomes Across Rural Communities in the United States: Narrative Review	Journal of Medical Internet Research	Michael Butzner # 1, Yendelela Cuffee	Review Article	JMIR Publications
12	Pubmed	2020	https://www.fertstert.org/article/S0015-0282(20)32622-4/fulltext	Where will telemedicine go from here?	Fertility and Sterility	Katherine Rotker, M.D. Danielle Velez, M.D.	Review Article	Elsevier
13	Science Direct	2022	https://www.sciencedirect.com/science/article/pii/S0095454322000239?via%3Dihub	The State of Telehealth Before and After the COVID-19 Pandemic	Primary Care: Clinics in Office Practice	Julia Shaver 1	Review Article	Elsevier
14	Pubmed	2023	https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2023.1129793/full	Telemedicine for diabetes management during COVID-19: what we have learnt, what and how to implement	Frontiers in Endocrinology	Laszlo Rosta 1, Adrienn Menyhart 2, Wael Al Mahmeed 3, Khalid Al-Rasadi 4, Kamila Al-Alawi 5, Maciej Banach 6 7 8, Yajnavalka Banerjee 9, Antonio Ceriello 10, Mustafa Cesur 11, Francesco Cosentino 12, Alberto Firenze 13, Massimo Galia 14, Su-Yen Goh 15, Andrej Janez 16, Sanjay Kalra 17, Nitin Kapoor 18 19, Nader Lessan 20, Paulo Lotufo 21, Nikolaos Papanas 22, Ali A Rizvi 23, Amirhossein Sahebkar 24 25 26, Raul D Santos 27 28, Anca Pantea Stoian 29, Peter P Toth 30, Vijay Viswanathan 31, Peter Kempler 2, Manfredi Rizzo 9 29 32	Review Article	Frontiers
15	Pubmed	2022	https://link.springer.com/article/10.1007/s11912-021-01176-x	Tele-neuro-oncology: Current Practices and Future Directions	Neuro-oncology	Andrea Wasilewski & Nimish Mohile	Review Article	Springer
16	Pubmed	2017	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5324778/	Telehealth Applications to Enhance CKD Knowledge and Awareness Among Patients and Providers	Telehealth in Nephrology	Delphine S Tuot 1, L Ebony Boulware 2	Review Article	Elsevier
17	Pubmed	2022	https://www.mdpi.com/1660-4601/19/14/8296	Barriers and Supports in eHealth Implementation among People with Chronic Cardiovascular Ailments: Integrative Review	International Journal of Environmental Research and Public Health	Sophia Herrera 1ORCID,Alide Salazar 2,*ORCID andGabriela Nazar 3ORCID	Review Article	MDPI
18	Pubmed	2022	https://mhealth.jmir.org/2022/5/e36284/	Sociotechnical Factors Affecting Patients' Adoption of Mobile Health Tools: Systematic Literature Review and Narrative Synthesis	JMIR Mhealth Uhealth	Christine Jacob 1 Author Orcid Image ; Emre Sezgin 2, 3 Author Orcid Image ; Antonio Sanchez-Vazquez 4 Author Orcid Image ; Chris Ivory 4	Review Article	JMIR Publications
19	Pubmed	2021	https://www.sciencedirect.com/science/article/pii/S1386505621000964?via%3Dihub	From telehealth to virtual primary care in Australia? A Rapid scoping review	International Journal of Medical Informatics	Jitendra Jonnagaddala, Myron Anthony Godinho, Siaw-Teng Liaw	Review Article	Elsevier

20	Pubmed	2022	https://www.jmir.org/2022/2/e32946/	Posthospitalization Follow-Up of Patients With Heart Failure Using eHealth Solutions: Restricted Systematic Review	Journal of Medical Internet Research	Ingvild Margreta Morken # 1 2, Marianne Storm # 3 4, Jon Arne Søreide # 5 6, Kristin Hjorthaug Urstad # 1 7, Bjørg Karlsen # 3, Anne Marie Lunde Husebø # 2 3	Review Article	JMIR Publications
21	Pubmed	2023	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10461888/	Towards A Framework for Implementing Remote Patient Monitoring From an Integrated Care Perspective: A Scoping Review	International Journal of Health Policy and Management (IJHPM)	Rafael Miranda,corresponding author 1 , 2 ,* Mónica Duarte Oliveira, 1 , 3 Paulo Nicola, 4 Filipa Matos Baptista, 2 and Isabel Albuquerque 5	Review Article	Kerman University of Medical Sciences
22	Pubmed	2015	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4486048/	A systematic review of telehealth tools and interventions to support family caregivers	Journal of Telemedicine and Telecare	Nai-Ching Chi 1, George Demiris 2	Review Article	Sage Journals
23	Pubmed	2023	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9847535/	A systematic review of the effectiveness of patient education through patient portals	JAMIA Open	Adam M Johnson,corresponding author Andrew S Brimhall, Erica T Johnson, Jennifer Hodgson, Katharine Diderichsen, Joseph Pye, G J Corey Harmon, and Kerry B Sewell	Review Article	Oxford University Press
24	Pubmed	2021	https://www.mdpi.com/2075-1729/11/12/1317	Using Telemedicine to Provide Education for the Symptomatic Patient with Chronic Respiratory Disease	Life	Felicity C. Blackstock 1,2,*ORCID andNicola J. Roberts 3ORCID	Review Article	MDPI
25	Pubmed	2022	https://link.springer.com/article/10.1007/s11912-022-01332-x	Telemedicine in Cancer Care Beyond the COVID-19 Pandemic: Oncology 2.0?	Current Oncology Reports	Howard (Jack) West, Afsaneh Barzi & Debra Wong	Review Article	Springer
26	Pubmed	2021	https://formative.jmir.org/2021/4/e23233/	Recommendations for Health Equity and Virtual Care Arising From the COVID-19 Pandemic: Narrative Review	JMIR Formative Research	James Shaw 1 2, LaPrincess C Brewer 3, Tiffany Veinot 4	Review Article	JMIR Publications
27	Pubmed	2021	https://www.mdpi.com/2076-3425/11/2/237	Telehealth in Neurodegenerative Diseases: Opportunities and Challenges for Patients and Physicians	Brain Sciences	Fabiola De Marchi 1,2,*ORCID,Elena Contaldi 2,3,Luca Magistrelli 3,4ORCID,Roberto Cantello 1,3ORCID,Cristoforo Comi 3ORCID andLetizia Mazzini 1	Review Article	MDPI
28	Pubmed	2022	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9719751/	Patient Experience from an eHealth Perspective: A Scoping Review of Approaches and Recent Trends	Yearbook Medical Informatics	Johanna Viitanen , Paula Valkonen , Kaisa Savolainen , Nina Karisalmi , Sini Hölsä , Sari Kujala	Review Article	Thieme
29	Pubmed	2022	https://link.springer.com/article/10.1007/s11899-021-00642-4	Use of Telemedicine in Care of Hematologic Malignancy Patients: Challenges and Opportunities	Current Hematologic Malignancy Reports	Jennifer Lloyd & Catherine J. Lee	Review Article	Springer
30	Pubmed	2022	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9741928/	Patient satisfaction with telemedicine in acute care setting: A systematic review	Journal of Clinical & Translational Research	Abdullah S. Eldaly, 1 Michael J. Maniaci, 2 Margaret R. Paulson, 3 Francisco R. Avila, 1 Ricardo A. Torres-Guzman, 1 Karla Maita, 1 John P. Garcia, 1 and Antonio J. Forte 1 , *	Review Article	AccScience Publishing
31	Pubmed	2022	https://journals.sagepub.com/doi/10.1177/11795735221109745?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed	Implementing Virtual Care in Neurology - Challenges and Pitfalls	Journal of Central Nervous System Disease	Filzah Faheem 1, Zaitoon Zafar 1, Aisha Razzak 2, Junaid Siddiq Kalia 3 4 5	Review Article	Sage Journals
32	Pubmed	2021	https://www.gastrojournal.org/article/S0016-5085(21)03320-5/fulltext?referrer=https%3A%2F%2Fpubmed.ncbi.nlm.nih.gov%2F	A Review of the Evidence and Recommendations on Communication Skills and the Patient-Provider Relationship: A Rome Foundation Working Team Report	Gastroenterology Journal	Douglas A Drossman 1, Lin Chang 2, Jill K Deutsch 3, Alexander C Ford 4, Albena Halpert 5, Kurt Kroenke 6, Samuel Nurko 7, Johannah Ruddy 8, Julie Snyder 9, Ami Sperber 10	Review Article	Elsevier

33	Pubmed	2020	https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0237585	Telemedicine in the OECD: An umbrella review of clinical and cost-effectiveness, patient experience and implementation	PLOS One	Nkiruka D Eze 1, Céu Mateus 1, Tiago Cravo Oliveira Hashiguchi 2	Review Article	PLOS ONE
34	Pubmed	2020	https://journals.sagepub.com/doi/full/10.1177/2150132720980612#supplemen tary-materials	Implementation and Usefulness of Telemedicine During the COVID-19 Pandemic: A Scoping Review	Journal of Primary Care & Community Health	María Alejandra Hincapié,1 Juan Carlos Gallego,1,2 Andrés Gempeler,2 Jorge Arturo Piñeros,1,2 Daniela Nasner,2 and María Fernanda Escobar2	Review Article	Sage Journals
35	Pubmed	2022	https://ascopubs.org/doi/10.1200/JCO.21.01171?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed	Electronic Health Interventions for Patients With Breast Cancer: Systematic Review and Meta-Analyses	Journal of Clinical Oncology	Anna C Singleton 1, Rebecca Raeside 1, Karice K Hyun 1 2, Stephanie R Partridge 1 3, Gian Luca Di Tanna 4, Nashid Hafiz 1, Qiang Tu 1, Justin Tat- Ko 1, Stephanie Che Mun Sum 1, Kerry A Sherman 5, Elisabeth Elder 6, Julie Redfern 1 4	Review Article	ASCO Publications
36	Pubmed	2023	https://www.jmir.org/2023/1/e42507	Patient Perspectives and Preferences for Consent in the Digital Health Context: State-of-the-art Literature Review	Journal of Medical Internet Research	Iman Kassam 1 2, Daria Ilkina 3, Jessica Kemp 1 2, Heba Roble 1 2, Abigail Carter-Langford 3, Nelson Shen 1 2	Review Article	JMIR Publications
37	Pubmed	2022	https://www.jmir.org/2022/3/e28724/	Telemedicine Acceptance Among Older Adult Patients With Cancer: Scoping Review	Journal of Medical Internet Research	Ning-Qi Pang # 1, Jerrald Lau # 2 3, Si-Ying Fong 2, Celine Yu-Hui Wong 2, Ker-Kan Tan 2 4	Review Article	JMIR Publications
38	Pubmed	2023	https://bmccardiovascdisord.biomedcentral.com/articles/10.1186/s12872-023-03486-3	Use of telemonitoring in patient self-management of chronic disease: a qualitative meta-synthesis	BMC Cardiovascular Disorders	Anna Creber, Donato Giuseppe Leo, Benjamin J. R. Buckley, Mahin Chowdhury, Stephanie L. Harrison, Masoud Isanejad & Deirdre A. Lane on behalf of the TAILOR investigators	Review Article	BMJ Journals
39	Pubmed	2022	https://www.hindawi.com/journals/bmri/2022/7366063/	Rehabilitation Professional and Patient Satisfaction with Telerehabilitation of Musculoskeletal Disorders: A Systematic Review	BioMed Research International	Junaid Amin 1, Basaruddin Ahmad 1, Salman Amin 2, Ammar Ahmed Siddiqui 3 4, Mohammad Khursheed Alam 5	Review Article	Hindawi
40	Pubmed	2023	https://www.jmir.org/2023/1/e43684	Advantages and Challenges of Using Telehealth for Home-Based Palliative Care: Systematic Mixed Studies Review	Journal of Medical Internet Research	Simen A Steindal 1 2, Andréa Aparecida Gonçalves Nes 1, Tove E Godskesen 3 4, Heidi Holmen 5 6, Anette Winger 5, Jane Österlind 3, Alfhild Dihle 5, Anna Klarare 3 7	Review Article	JMIR Publications
41	Pubmed	2020	https://www.fertstert.org/article/S0015-0282(20)32620-0/fulltext	Clinical implications of telemedicine for providers and patients	Fertility and Sterility	William T Berg 1, Marc Goldstein 2, Alexis P Melnick 3, Zev Rosenwaks 3	Review Article	Elsevier
42	Pubmed	2017	https://www.jmir.org/2017/1/e11/	Cancer Survivors' Experience With Telehealth: A Systematic Review and Thematic Synthesis	Journal of Medical Internet Research	Anna Cox 1, Grace Lucas 1, Afrodita Marcu 1, Marianne Piano 1, Wendy Grosvenor 1, Freda Mold 1, Roma Maguire 1, Emma Ream 1	Review Article	JMIR Publications
43	Wiley Library	2022	https://onlinelibrary.wiley.com/doi/10.1111/jorc.12419	Patient perspectives and experiences of remote consultations in people receiving kidney care: A scoping review	Journal of Renal Care	Catriona Ewart 1, Jyoti Baharani 2, Martin Wilkie 3, Nicola Thomas 1	Review Article	Wiley
44	Pubmed	2024	https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-023-10372-3	What are the determinants of older people adopting communicative e-health services: a meta-ethnography	BMC Health Services Research	Ayse Aslan, Freda Mold, Harm van Marwijk & Jo Armes	Review Article	Springer

45	Pubmed	2024	https://medscimonit.com/abstract/full/idArt/943383	A Systematic Review of Publications on Perceptions and Management of Chronic Medical Conditions Using Telemedicine Remote Consultations by Primary Healthcare Professionals April 2020 to December 2021 During the COVID-19 Pandemic	Medical Science Monitor	Arzaq Ahmed1ABCDEF, Mahdi Mutahar2ADF*, Arwa A. Daghrery3EFG, Nassreen H. Albar3EFG, Ismail Qasem I. Alhadidi4BG, Ali Mohammed Asiri5DG, Nezar Boreak3BFG, Ahmed Audah S. Alshahrani6DG, Mansoor Shariff7CG, Mosa A. Shubayr8CFG, Mohammed M. Al Moaleem ORCID logo9EF	Review Article	International Scientific Information, Inc.
46	Pubmed	2023	https://www.jmir.org/2023/1/e44188	Facilitators of and Barriers to Accessing Hospital Medical Specialty Telemedicine Consultations During the COVID- 19 Pandemic: Systematic Review	Journal of Medical Internet Research	Ana Soraia Cunha 1, Ana Rita Pedro 2, João V Cordeiro 2 3	Review Article	JMIR Publications
47	Pubmed	2024	https://journals.lww.com/transplantjournal/fulltext/2024/02000/telemedicine_for_kidney_transplant_recipients_20.asp x	Telemedicine for Kidney Transplant Recipients: Current State, Advantages, and Barriers	ournal of The Transplantation Society	Bartu Hezer 1, Emma K Massey, Marlies E J Reinders, Mirjam Tielen, Jacqueline van de Wetering, Dennis A Hesselink, Martijn W F van den Hoogen	Review Article	LWW
48	Pubmed	2023	https://bmcmedinformdecismak.biomedcentral.com/articles/10.1186/s12911-023-02194-4	The tragic paradoxical effect of telemedicine on healthcare disparities- a time for redemption: a narrative review	BMC Medical Informatics and Decision Making	Motti Haimi 1 2 3 4	Review Article	Springer
49	Pubmed	2016	https://bmcmedinformdecismak.biomedcentral.com/articles/10.1186/s12911-016-0359-3	Understanding factors affecting patient and public engagement and recruitment to digital health interventions: a systematic review of qualitative studies	BMC Medical Informatics and Decision Making	Siobhan O'Connor 1 2, Peter Hanlon 1, Catherine A O'Donnell 1, Sonia Garcia 3, Julie Glanville 3, Frances S Mair 4	Review Article	Springer
50	Pubmed	2023	https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2023.1109323/full	The role of digital literacy in achieving health equity in the third millennium society: A literature review	Frontiers in Public Health	Laura Leondina Campanozzi 1, Filippo Gibelli 2, Paolo Bailo 2, Giulio Nittari 3, Ascanio Sirignano 2, Giovanna Ricci 2	Review Article	Frontiers
51	Pubmed	2023	https://www.frontiersin.org/journals/digital-health/articles/10.3389/fdgth.2023.1264780/full	Improving health literacy using the power of digital communications to achieve better health outcomes for patients and practitioners	Frontiers in Digital Health	Patrick J Fitzpatrick 1	Review Article	Frontiers
52	Pubmed	2021	https://www.jmir.org/2021/6/e23473/	Application of the eHealth Literacy Model in Digital Health Interventions: Scoping Review	Journal of Medical Internet Research	Mariam El Benny 1, Tamar Kabakian-Khasholian 1, Fadi El-Jardali 2, Marco Bardus 1	Review Article	JMIR Publications
53	Pubmed	2022	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9013222/	Telehealth in Primary Health Care: A Scoping Review of the Literature	Perspectives in Health Information Management (PHIM)	Leila Beheshti, Leila R Kalankesh, Leila Doshmangir, Mostafa Farahbakhsh	Review Article	AHIMA
54	Pubmed	2018	https://www.mdpi.com/1660-4601/15/8/1643	Media Health Literacy, eHealth Literacy, and the Role of the Social Environment in Context	International Journal of Environmental Research and Public Health	Diane Levin-Zamir 1 2, Isabella Bertschi 3	Review Article	MDP

55	Google Scholar	2022	https://link.springer.com/article/10.1186/s12877-021-02702-z	Patients' and healthcare providers' perceptions and experiences of telehealth use and online health information use in chronic disease management for older patients with chronic obstructive pulmonary disease: a qualitative study	BMC Geriatrics	Yuyu Jiang, Pingping Sun, Zhongyi Chen, Jianlan Guo, Shanshan Wang, Fenglan Liu & Jinping Li	Review Article	Springer
56	Science Direct	2023	https://www.sciencedirect.com/science/article/pii/S0146280623001536?via%3Dihub	Remote consultations: review of guiding themes for equitable and effective delivery	Current Problems in Cardiology	Mohammed Y. Khanji MBBCh, PhD a b c d *, Angela M. Gallagher a b d *, Nirandeep Rehill d e, R. Andrew Archbold a b d	Review Article	Elsevier
57	Google Scholar	2020	https://www.jmir.org/2020/2/e16407/	Barriers and Facilitators That Influence Telemedicine-Based, Real-Time, Online Consultation at Patients' Homes: Systematic Literature Review	Journal of Medical Internet Research	Hassan Khader Y Almathami 1, 2 Author Orcid Image ; Khin Than Win 1 Author Orcid Image ; Elena Vlahu-Gjorgievska 1 Author Orcid Image	Review Article	JMIR Publications
58	Pubmed	2023	https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2023.1074364/full	Transformation of chronic disease management: Before and after the COVID-19 outbreak	Frontiers in Public Health	Steven Yu 1 2 3 4 5, Bongjun Wan 1 2 3 4 5, Lu Bai 1 2 3 4 5, Bingrong Zhao 1 2 3 4 5, Qiaoling Jiang 1 2 3 4 5, Juan Jiang 1 2 3 4 5, Yuanyuan Li 1 2 3 4 5	Review Article	Frontiers
59	Pubmed	2021	https://karger.com/crd/article/146/2/263/80565/Review-of-Digitalized-Patient-Education-in	Review of Digitalized Patient Education in Cardiology: A Future Ahead?	Cardiology	Marinka D Oudkerk Pool 1 2, Jean-Luc Q Hooglugt 3, Marlies P Schijven 4, Barbara J M Mulder 3, Berto J Bouma 3, Robbert J de Winter 3, Yigal Pinto 3, Michiel M Winter 3	Review Article	Karger
60	Pubmed	2021	https://www.mdpi.com/1660-4601/18/15/7728	Effects of e-Health Training and Social Support Interventions for Informal Caregivers of People with Dementia-A Narrative Review	International Journal of Environmental Research and Public Health	Esther Sitges-Maciá 1, Beatriz Bonete-López 1, Antonio Sánchez-Cabaco 2, Javier Oltra-Cucarella 1	Review Article	MDPI
61	Pubmed	2022	https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-08235-4	Implementations and strategies of telehealth during COVID-19 outbreak: a systematic review	BMC Health Services Research	Stefania De Simone, Massimo Franco, Giuseppe Servillo & Maria Vargas	Review Article	Springer
62	Pubmed	2021	https://www.mdpi.com/1660-4601/18/5/2247	Enablers of Patient Knowledge Empowerment for Self-Management of Chronic Disease: An Integrative Review	International Journal of Environmental Research and Public Health	by Vestina Vainauskienė * andRimgailė Vaitkienė	Review Article	MDPI
63	Pubmed	2023	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10623772/	The impact of eHealth on relationships and trust in primary care: a review of reviews	BMC Primary Care	Meena Ramachandran,corresponding author1,2 Christopher Brinton,1,3 David Wiljer,4,5,6,7 Ross Upshur,1,8 and Carolyn Steele Gray1,6	Review Article	Springer
64	Pubmed	2022	https://www.frontiersin.org/articles/10.3389/fsurg.2022.863576/full	Telemedicine and Telehealth in Urology-What Do the 'Patients' Think About It?	Frontiers in Surgery	Nithesh Naik 1 2, B M Zeeshan Hameed 2 3, Sanjana Ganesh Nayak 4, Anshita Gera 4, Shreyas Raghavan Nandyal 5, Dasharathraj K Shetty 6, Milap Shah 2 7, Sufyan Ibrahim 2 8, Aniket Naik 8, Nagaraj Kamath 8, Delaram Mahdaviamiri 9, Kenisha Kevin D'costa 10, Bhavan Prasad Rai 2 11, Piotr Chlosta 12, Bhaskar K Somani 2 13	Review Article	Frontiers

65	Pubmed	2017	https://www.jmir.org/2017/9/e329/	Evaluating Patient Empowerment in Association With eHealth Technology: Scoping Review	Journal of Medical Internet Research	Tracie Risling # 1, Juan Martinez # 1, Jeremy Young # 1, Nancy Thorp-Froslie # 1	Review Article	JMIR Publications
66	Pubmed	2022	https://link.springer.com/article/10.1007/s11916-022-01096-w	Behavioral Health, Telemedicine, and Opportunities for Improving Access	Current Pain and Headache Reports	Daniel G Rogers 1 2, Katie Santamaria 3, Elizabeth K Seng 3 4 5, Amy S Grinberg 6 4 7	Review Article	Springer
67	Pubmed	2021	https://www.jmir.org/2021/9/e28869/	Effect of Digital Care Platforms on Quality of Care for Oncological Patients and Barriers and Facilitators for Their Implementation: Systematic Review	Journal of Medical Internet Research	Jana S Hopstaken # 1, Lynn Verweij # 2, Cees J H M van Laarhoven 1, Nicole M A Blijlevens 2, Martijn W J Stommel 1, Rosella P M G Hermens 3	Review Article	JMIR Publications
						Jiang 1 2 3 4 5, Yuanyuan Li 1 2 3 4 5		
59	Pubmed	2021	https://karger.com/crd/article/146/2/263/80565/Review-of-Digitalized-Patient-Education-in	Review of Digitalized Patient Education in Cardiology: A Future Ahead?	Cardiology	Marinka D Oudkerk Pool 1 2, Jean-Luc Q Hooglugt 3, Marlies P Schijven 4, Barbara J M Mulder 3, Berto J Bouma 3, Robbert J de Winter 3, Yigal Pinto 3, Michiel M Winter 3	Review Article	Karger
60	Pubmed	2021	https://www.mdpi.com/1660-4601/18/15/7728	Effects of e-Health Training and Social Support Interventions for Informal Caregivers of People with Dementia-A Narrative Review	International Journal of Environmental Research and Public Health	Esther Sitges-Maciá 1, Beatriz Bonete-López 1, Antonio Sánchez-Cabaco 2, Javier Oltra-Cucarella 1	Review Article	MDPI
61	Pubmed	2022	https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-08235-4	Implementations and strategies of telehealth during COVID-19 outbreak: a systematic review	BMC Health Services Research	Stefania De Simone, Massimo Franco, Giuseppe Servillo & Maria Vargas	Review Article	Springer
62	Pubmed	2021	https://www.mdpi.com/1660-4601/18/5/2247	Enablers of Patient Knowledge Empowerment for Self-Management of Chronic Disease: An Integrative Review	International Journal of Environmental Research and Public Health	by Vestina Vainauskienė * andRimgailė Vaitkienė	Review Article	MDPI
63	Pubmed	2023	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10623772/	The impact of eHealth on relationships and trust in primary care: a review of reviews	BMC Primary Care	Meena Ramachandran,corresponding author1,2 Christopher Brinton,1,3 David Wiljer,4,5,6,7 Ross Upshur,1,8 and Carolyn Steele Gray1,6	Review Article	Springer
64	Pubmed	2022	https://www.frontiersin.org/articles/10.3389/fsurg.2022.863576/full	Telemedicine and Telehealth in Urology-What Do the 'Patients' Think About It?	Frontiers in Surgery	Nithesh Naik 1 2, B M Zeeshan Hameed 2 3, Sanjana Ganesh Nayak 4, Anshita Gera 4, Shreyas Raghavan Nandyal 5, Dasharathraj K Shetty 6, Milap Shah 2 7, Sufyan Ibrahim 2 8, Aniket Naik 8, Nagaraj Kamath 8, Delaram Mahdaviamiri 9, Kenisha Kevin D'costa 10, Bhavan Prasad Rai 2 11, Piotr Chlosta 12, Bhaskar K Somani 2 13	Review Article	Frontiers
65	Pubmed	2017	https://www.jmir.org/2017/9/e329/	Evaluating Patient Empowerment in Association With eHealth Technology: Scoping Review	Journal of Medical Internet Research	Tracie Risling # 1, Juan Martinez # 1, Jeremy Young # 1, Nancy Thorp-Froslie # 1	Review Article	JMIR Publications
66	Pubmed	2022	https://link.springer.com/article/10.1007/s11916-022-01096-w	Behavioral Health, Telemedicine, and Opportunities for Improving Access	Current Pain and Headache Reports	Daniel G Rogers 1 2, Katie Santamaria 3, Elizabeth K Seng 3 4 5, Amy S Grinberg	Review Article	Springer
67	Pubmed	2021	https://www.jmir.org/2021/9/e28869/	Effect of Digital Care Platforms on Quality of Care for Oncological Patients and Barriers and Facilitators for Their Implementation: Systematic Rev.	Journal of Medical Internet Research	Jana S Hopstaken # 1, Lynn Verweij # 2, Cees J H M van Laarhoven 1, Nicole M A Blijlevens 2, Martijn W J Stommel 1, Rosella P M G Hermens 3	Review Article	JMIR Publications

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