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AICOMM: Communication and Activation Skills

Training Programme for Relatives of Individuals with Dementia

Review for Mapping Local Resources for Informal Carers' Online Training

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Executive Summary

This grey literature review, conducted under Work Package 2 (WP2) of the AICOMM project, maps and analyses online educational resources for informal caregivers of people with dementia (Pwd) across five countries and languages: North Macedonia, Czech Republic, Romania, Spain and Slovenia. Its purpose is to identify existing materials, assess their thematic coverage and pedagogical quality, and provide an evidence base for the design of the multilingual, AI-supported AICOMM e-learning platform.

Using an exploratory mapping methodology adapted for grey literature, the review examined resources produced by public institutions, NGOs, private providers and community initiatives. A four-channel search strategy (institutional, NGO, private sector, open online/media sources) and standardised inclusion criteria ensured consistency across countries. Data were extracted using a shared template and analysed thematically and comparatively.

A total of 132 resources were identified. The Czech Republic (62 resources; 47%) and Slovenia (39; 29.5%) dominate in quantity, while Spain (12), North Macedonia (11) and Romania (8) contribute fewer but in some cases high-quality materials. Across all countries, static formats: PDFs, brochures, leaflets and written guides account for about 65% of all resources, while videos, webinars and e-learning courses represent 35%. NGOs are the main producers of caregiver materials (68.4%), with public institutions contributing 19.5% and private providers 12%.

Thematically, most resources address basic dementia knowledge (40.1%), principles of care (15.3%) and communication strategies (15.8%). Content on activation and engagement (10.8%) and caregiver wellbeing (8.1%) is present but limited. Legal and ethical guidance (5.9%) and digital tools in care (4.1%) are consistently underrepresented, revealing significant gaps relevant to modern caregiving.

Country comparisons show strong but varied profiles. The Czech Republic and Slovenia have the largest number of resources, with broad coverage of basic dementia knowledge and communication; Czech materials in particular include well-developed content on caregiver psychological support and activation. Spain and Romania contribute fewer resources in absolute numbers but offer some of the most pedagogically diverse and multi-format materials, especially in communication, activation and caregiver support, with Spain also more advanced in integrating digital components and legal guidance. North Macedonia has the smallest and most fragmented resource base, largely limited to introductory, text-based materials with notable gaps in activation, legal issues, caregiver mental health and digital tools.



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Across all countries, grey literature remains largely descriptive and didactic, with minimal interactivity, scenario-based learning or personalisation. Digital, legal and psychological support content is scarce.

These findings highlight clear priorities for AICOMM:

- develop new content on legal literacy, digital care tools, caregiver wellbeing and advanced communication;
- transform static materials into interactive, scenario-based and micro-learning modules;
- ensure strong localisation to reflect country-specific legal frameworks and cultural contexts;
- leverage AI for personalised learning pathways, guidance and adaptive support.

By addressing the identified gaps and building on existing strengths, AICOMM can become a central, multilingual, AI-enabled platform that enhances caregiver skills, supports resilience, and contributes to more equitable and effective dementia care across Europe.

Methodological Framework

Objectives and Scope

The present review was conducted as part of Work Package 2 (WP2) of the AICOMM project, which focuses on the development of a multilingual, AI-supported e-learning platform for informal caregivers of people with dementia (PwD). Its main objective was to identify, map, and analyze existing educational materials available online as grey literature across five European countries: North Macedonia, Czech Republic, Romania, Spain, and Slovenia – and in five corresponding languages. The review aimed to capture the diversity of resources created by public institutions, NGOs, private providers, and community-based initiatives, and to synthesize their thematic content, accessibility, and relevance. By doing so, the review provides an evidence base that will guide the design, localization, and content structure of the AICOMM platform and inform the development of future training modules where gaps are identified.

Conceptual Approach

Unlike systematic literature reviews focusing on peer-reviewed academic sources, this review followed an exploratory, structured mapping methodology designed specifically for identifying grey literature – materials not formally published in scientific journals but widely used in practice. This approach was chosen because the majority of educational materials for informal caregivers are produced by health and social services, NGOs,



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caregiver associations, and local care providers, often in native languages and distributed through non-academic channels. Capturing these resources is essential for understanding the real-world educational landscape available to caregivers who have no formal education, skills and training to care for their loved ones living with dementia.

Search Strategy

The review followed a four-step search strategy adapted from previously agreed AICOMM methodology for grey literature in 5 languages.

1. Institutional sources: Ministries of Health and Social Policy, national dementia strategies, public health agencies, and professional associations of nurses, social workers, and caregivers.
2. NGOs and civil society: Alzheimer's associations, dementia-focused NGOs, caregiver support groups, and community organizations providing psychosocial support and education.
3. Private sector: Private training providers, consultancy services, e-learning platforms, and private or non-profit nursing homes or long term care facilities.
4. Open online and media resources: Digital brochures, e-books, self-learning websites, webinars, video series, podcasts, and recorded lectures.

Search terms were defined in English and translated into Macedonian, Czech, Romanian, Spanish, and Slovenian, focusing on key concepts such as *training for caregivers of people with dementia*, *support for family carers*, *dementia communication training*, *education for Alzheimer's relatives*, and *activation methods for informal carers*. Each national partner team adapted the keywords and conducted searches using local search engines, institutional websites, and relevant directories.

Inclusion Criteria and Data Extraction

- Resources were included if they met the following criteria:
- Focused on informal caregivers or family members of people with dementia.
- Provided educational or training content related to caregiving skills, communication, activation, or psychosocial support.
- Were available as grey literature (i.e., publicly available but not peer-reviewed).
- Were produced in one of the five target languages and accessible online.

Each partner used a standardized data extraction template to collect information on the title, publisher, year, format, target audience, description, language, and relevance. This ensured consistency across countries and facilitated cross-national comparison.



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In the initial search, some pay per view resources were identified as potential educational resources, but those resources were not analyzed in this review since they are not freely available for wider audience.

Analytical Approach

Data were synthesized using a combined thematic and comparative framework. First, resources were coded and analyzed thematically according to their content focus (e.g., communication, activation, caregiver well-being, legal information). Second, they were examined by country to capture national variations in quantity, type, and accessibility. Thematic and geographical findings were then integrated to identify shared trends, innovative practices, and significant gaps in existing resources.

Overview of Identified Resources across Five Languages

Scope and Distribution of Resources

The mapping exercise identified a total of 132 grey literature resources focused on the education and support of informal caregivers of people with dementia across five languages. These materials were produced by a wide range of actors, including public institutions, NGOs, private providers, and community organizations, and vary significantly in format, accessibility, and thematic scope.

The table below presents the overall distribution of resources by country and language:

Country	Language	Total Resources	% of Total
Czech Republic	Czech	62	47.0 %
Spain	Spanish	12	9.1 %
North Macedonia	Macedonian	11	8.3 %
Romania	Romanian	8	6.1 %
Slovenia	Slovenian	39	29.5 %



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Country	Language	Total Resources	% of Total
Total		132	100%

Resources published in Czech and Slovenian language are dominant which may reflect stronger institutional engagement and a longer tradition of public communication on dementia care. Spain and Romania offer fewer resources but the quality of those resources is very strong. North Macedonia has fragmented resources that are more informational rather than targeted, underscoring the need for capacity-building and targeted content development in languages of smaller populations.

Types and Formats of Resources

The identified materials span a variety of formats, ranging from traditional printed brochures to interactive digital courses. The table below summarizes their distribution:

Format	Number of Resources	% of Total
PDF, e-brochures and leaflets	36	26.3 %
Online guides, manuals and toolkits	28	20.4 %
Video materials and webinars	34	24.8 %
E-learning modules / online courses	12	8.8 %
Podcasts and recorded lectures	2	1.5 %
Short articles, reports, community materials	25	18.2 %
Total	137	100%



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Most resources remain text-based (brochures, guides, manuals), with 65 % of all materials delivered in static formats. Interactive and digital resources (e-learning modules, webinars, video series) represent 35 %, showing that while digitalization is progressing, there is still substantial room for growth. Notably, podcasts and recorded materials remain underdeveloped (1.5 %), even though they represent an accessible format for caregivers with limited time or literacy skills.

Type of Source and Publisher

The resources originate from a diverse range of publishers, reflecting the multisectoral nature of caregiver support. The distribution is shown below:

Type of Source	Number of Resources	% of Total
Public institutions (ministries, agencies, health services)	26	19.5 %
NGOs and civil society organisations	91	68.4 %
Private sector and care providers	16	12 %
Total	133	100%

The dominance of NGO's resources with 2/3 of the resources, underscores the role of civil society sector in producing caregiver education materials. However, the relatively small share of public institutions, mainly Ministries or public hospitals with little less than 20% and private care providers with 12 %, suggests underutilized potential for public sector and care providers to complement NGOs efforts, especially with innovative and user-friendly content. In most of the countries except North Macedonia a branch of Alzheimer Association or equivalent NGO is operating, and the most valuable digital resources come from those institutions.

Target Audiences

Our search criteria were resources targeting informal caregivers, but 2 resources aimed for professionals were also included in the analysis because of their content significance for AICOMM goals. The vast majority of resources are designed for informal caregivers and family members of people with dementia. A smaller share targets mixed audiences or professional caregivers:



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Target Audience	Number of Resources	% of Total
Informal caregivers / family members	108	81.8 %
Mixed audiences (formal + informal)	22	16.7 %
Professional caregivers	2	1.5 %
Total	132	100%

The predominance of materials for informal caregivers (81.8 %) confirms the relevance of grey literature as a vital source of practical information and emotional support for families. The rest is targeted for mixed audience and general public. There are plenty of materials for professionals, but our goal was not to access experts' training resources.

Thematic Coverage

The content of identified materials spans a broad thematic range. The most frequent themes include basic dementia knowledge, communication skills, and activation methods, while legal guidance and digital tools are underrepresented:

Thematic Area	Number of Resources	% of Total
Basic dementia knowledge and disease progression	89	40.1 %
Principles of care	34	15.3 %
Communication strategies and interaction	35	15.8 %
Activation and daily engagement techniques	24	10.8 %
Caregiver psychological support and well-being	18	8.1 %



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Thematic Area	Number of Resources	% of Total
Legal and ethical guidance	13	5.9 %
Digital tools and technology in care	9	4.1 %

Thematic analysis indicates that while most existing materials cover foundational knowledge and practical skills, legal and ethical aspects, caregiver psychological support and digital caregiving tools are insufficiently addressed. These gaps represent significant opportunities for the AICOMM platform to offer added value through new modules focused on legal literacy, rights and entitlements, and the use of technology in dementia care.

Key Observations

- The quantity and diversity of resources vary widely across countries, where in all 5 languages resources are available with different quantity and quality. Resources in Macedonian language show more limited availability.
- Most resources remain text-based and static, with fewer interactive and AI-ready materials.
- A strong focus on basic knowledge and communication exists, but there are notable gaps in legal, ethical, technological, and activation-focused materials.
- The biggest collection of resources comes from the NGOs sector, while the potential of the public sector and care providers is underutilized.

Thematic Analysis of Educational Materials

The grey literature resources identified across the five participating countries address a broad range of themes relevant to informal dementia care. While all share the common aim of improving caregivers' knowledge and competencies, their thematic focus, depth, and pedagogical approaches vary significantly. This section synthesises the main thematic areas emerging from the review and illustrates them with country-level examples, highlighting both good practices and existing gaps.

Basic dementia knowledge and disease progression and awareness and Principles of care

Dominant target in the resources in all countries and languages are basic information about dementia disorder and its progression 40.1%, as well as principles of caring for person with



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dementia 15.3%. In all 5 languages, there are diverse sources where an informal caregiver can understand different types of dementia, how to get diagnosed in the respective country, what are available treatments and how to address basic needs of a person with dementia.

However, the way the information is presented remains static in a form of written article, guideline, brochure. These resources are valuable, can reach to the wider public, but can be transformed in a more visual and interactive way.

Communication and Interaction Skills

Communication is one of the most consistently addressed themes across all languages, with approximately 16 % of all resources covering strategies for more effective interaction with people with dementia (PwD). Materials in this category typically aim to improve caregivers' understanding of cognitive and emotional changes in dementia and to provide practical communication techniques adapted to different stages of the disease.

In Spain, several resources created by Alzheimer associations and regional health services emphasise empathetic communication, the use of non-verbal cues, and strategies to reduce agitation and confusion. They often combine written guides with short video tutorials demonstrating real-life scenarios. Similarly, Romanian materials produced by national NGOs include caregiver handbooks explaining how to recognise behavioral triggers and de-escalate conflicts through tone of voice, body language, and environmental adjustments.

Resources in Slovenian and Czech focus more on the psychological underpinnings of communication, incorporating elements of validation therapy and person-centered care approaches. For instance, some Czech-language manuals guide caregivers on how to sustain conversation despite memory loss, encouraging reminiscence and meaningful engagement. In North Macedonia, resources are fewer and more general, often embedded within broader dementia care brochures, but they still provide essential tips for maintaining respectful communication and supporting emotional well-being.

Despite their prevalence, many communication-related materials remain introductory in scope, with limited attention to more complex communication challenges such as managing resistance to care, addressing aggressive behavior, or navigating late-stage dementia. This points to an opportunity for AICOMM to offer deeper, scenario-based communication modules that build on existing materials but expand their practical applicability.

Activation and Daily Engagement

Approximately 11% of identified resources include guidance on activation techniques and daily engagement, reflecting the growing emphasis on meaningful activity as a cornerstone of dementia care. These materials aim to help caregivers maintain cognitive function,



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preserve dignity, and enhance quality of life for PwD through structured routines, sensory stimulation, and participation in everyday tasks.

In all the countries, resources aiming to achieve activation and engagement of people with dementia in everyday life, are insufficient. The offer includes activity handbooks, printable calendars, and video demonstrations showing how to adapt tasks such as cooking, gardening, or art projects to different stages of dementia. Many also provide guidance on how to use reminiscence therapy or music-based interventions to promote engagement and reduce apathy.

Czech and Slovenian materials incorporate activation within broader caregiving manuals. For example, Czech resources produced by Alzheimer associations present structured activity plans and encourage joint caregiver–patient participation as a means to strengthen emotional bonds. In North Macedonia, activation content is more limited and tends to focus on general stimulation strategies, indicating a significant gap in locally tailored resources for daily engagement.

A recurring limitation across all languages is the lack of culturally adapted examples and the minimal integration of digital activation tools. This gap suggests a potential area where the AICOMM platform could innovate by providing interactive, language-specific activity libraries and AI-driven suggestions tailored to individual patient profiles.

Psychoeducation and Caregiver Well-being

The emotional and psychological burden of caregiving is widely acknowledged, but few resources 8.1% directly address caregiver mental health, stress management, and self-care. These materials aim to improve resilience, reduce burnout, and encourage caregivers to seek support.

In Romania and Spain, resources include dedicated chapters on caregiver well-being, outlining strategies for managing stress, maintaining social connections, and balancing caregiving with personal life. Spanish-language video series often feature testimonials from caregivers, offering both emotional validation and practical coping strategies.

Slovenian and Czech resources are also integrating psychological aspects into broader caregiver manuals, presenting self-care tips alongside communication and daily care techniques. For example, Czech Alzheimer association provides downloadable guides with relaxation techniques and information about caregiver support groups.

North Macedonian resources are scarcer and tend to treat caregiver well-being as a secondary topic within broader educational materials. Few resources address the importance of formal psychosocial support services or provide structured guidance for managing caregiver stress.



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Across all countries, psychoeducational content is typically descriptive rather than interactive, and very few resources offer structured self-assessment tools or guided exercises. This presents an opportunity for AICOMM to enrich this thematic area by integrating digital self-care modules, peer-support components, and AI-driven recommendations tailored to caregiver needs.

Legal and Ethical Aspects

Only 5.9 % of resources address legal and ethical issues, making this one of the least developed thematic areas across all five languages. Yet these topics including patient rights, caregiver responsibilities, guardianship, financial management, and access to services are essential to informed caregiving.

Some Spanish and Romanian resources stand out for providing comprehensive overviews of national legal frameworks, patient rights, and available social services. Spanish guides, for example, explain step-by-step how families can apply for disability benefits, legal guardianship, or respite services. Romanian NGOs offer brochures outlining the caregiver's legal status and duties under national law.

In Czech and Slovenian, legal content is more fragmented and often embedded within broader dementia care manuals rather than presented as standalone resources. North Macedonian materials rarely address legal topics beyond basic references to social services, highlighting a major gap in this area.

Given the complexity of legal frameworks and their frequent updates, grey literature often becomes outdated quickly. This gap creates a strong case for AICOMM to include up-to-date legal guidance modules, potentially linked to official government portals or automatically refreshed through AI-assisted updates.

Digital Tools and Technology in Care

Digital tools such as mobile apps, online platforms, and assistive technologies are addressed in only 4.1% of identified resources, representing a significant underdeveloped area despite the rapid digitalisation of dementia care. Most references are brief mentions within broader materials rather than comprehensive guides.

Some Spanish and Romanian resources highlight apps for cognitive stimulation or remote support platforms for caregivers, but these are often listed rather than explained in detail. Czech and Slovenian materials also mention telecare solutions and online caregiver networks, though few provide practical instructions on their use. North Macedonian resources generally lack content on digital support entirely.



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This thematic gap is particularly relevant for the AICOMM project, whose core innovation lies in developing an AI-supported e-learning platform. The current landscape indicates a clear need for resources that demystify technology, provide hands-on guidance for digital tool use, and explore the ethical and privacy considerations associated with technology in dementia care.

Summary of Thematic Findings

The thematic analysis reveals that while a substantial number of resources address foundational knowledge, communication, and activation, legal and ethical issues, caregiver mental health, and technology remain underrepresented. Materials vary in depth and sophistication, with EU countries generally offering more comprehensive coverage across all themes, while North Macedonia lags behind in both quantity and thematic diversity.

These findings highlight several priority areas for the AICOMM platform:

- Develop advanced communication training using scenario-based, interactive modules in 5 languages.
- Expand activation content with culturally tailored and AI-personalised activities.
- Strengthen focus on caregiver well-being with self-assessment tools and peer-support options.
- Provide up-to-date legal and ethical guidance adapted to each national context.
- Integrate practical training on digital tools and technologies to support informal care.

Country-Specific Findings and Examples

The following section presents a deeper exploration of the grey literature landscape in each of the five participating countries. While all partners followed the same methodological framework, the volume, thematic coverage, accessibility, and maturity of resources vary significantly across national contexts. These differences reflect variations in national dementia policies, institutional priorities, civil society engagement, and digital infrastructure – all of which have direct implications for the design and localisation of the AICOMM platform.

North Macedonia – Limited Resources and Fragmented Coverage

The search identified 11 resources in Macedonian. Most are printed brochures, brief online guides, and general information leaflets produced by public health institutions, NGO's, or social service providers. A few short video resources exist, but comprehensive digital or e-learning materials remain rare, especially recourses that are free of charge.



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Thematically, Macedonian resources predominantly cover basic knowledge about dementia: symptoms, disease progression, and caregiving principles. Communication strategies are usually embedded within broader caregiving guides, offering essential but surface-level advice such as speaking slowly, maintaining eye contact, and creating a calm environment. Activation techniques are addressed only in general terms, often limited to advice on maintaining routines or encouraging participation in daily tasks, without structured activity plans or culturally tailored examples.

Psychoeducation and caregiver support receive relatively little attention, with few materials addressing caregiver stress, burnout, or coping strategies. Legal and ethical aspects are also largely absent, beyond brief references to social services or disability benefits. There is a near-total lack of content on digital tools, reflecting a gap in the integration of technology into dementia care discourse in the country.

The main strength of Macedonian resources is their practical orientation – most are written in accessible language for family caregivers with limited prior knowledge. However, their limited depth, narrow thematic range, and outdated formats underscore the need for significant development. For AICOMM, this context presents both a challenge and an opportunity: the platform can become a primary national hub for dementia caregiver education, offering content that does not currently exist in Macedonian.

The most valuable resources in Macedonian language come from: NGO Red Cross Macedonian Branch and the website demencija.mk, but this website represents a platform that is not free of charge for users.

Czech Republic – Solid Foundations and Emerging Digital Resources

A total of 62 resources were identified in Czech language. These resources show a good balance between public institutional output (e.g., ministries, public health services) and NGO-produced materials, such as those from Alzheimer associations and caregiver networks. Most resources are printed guides, online brochures, and video-based materials, with some early examples of structured e-learning modules.

The Czech-language materials stand out for their focus on communication and person-centered care. Many guides introduce caregivers to the principles of validation therapy, emotional attunement, and memory-based conversation techniques, illustrating how these approaches can improve interactions and reduce behavioral symptoms. Some resources go beyond basic communication tips by addressing challenging behaviors such as agitation, refusal of care, or repetitive questioning, offering practical response strategies.

Activation and engagement are moderately represented, with manuals providing structured daily activity plans and practical suggestions for involving PwD in household tasks, creative



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activities, and social interaction. Several resources also touch on psychological support for caregivers, offering advice on self-care, stress reduction, and peer support networks.

Legal and ethical content is more fragmented, often appearing as short sections in larger caregiving manuals. Digital tools are mentioned in some resources primarily in the context of cognitive stimulation apps or online support groups but detailed guidance on their use remains limited.

Overall, the Czech grey literature landscape shows a balanced and moderately mature profile, with strengths in communication, activation, and caregiver well-being. However, the fragmentation of legal content and the underdeveloped digital training materials present opportunities for AICOMM to provide added value. The platform could, for example, expand existing communication resources into interactive modules or develop step-by-step guides for using technology in home-based care.

The most valuable resources for AICOMM from the Czech literature come from:

- Czech Alzheimer's Society
- Association of Social Services Providers of the Czech Republic (APSSČR)
- Ministry of Labour and Social Affairs (MPSV ČR)
- Opora Diakonie / pecujdoma.cz
- Elpida o.p.s.
- Dementia.cz

Romania – Diverse Resources and Holistic Approaches

Romania produced 8 resources but the quality of materials is one of the most comprehensive national outputs in the review. A diverse set of publishers is represented, including ministries, national Alzheimer associations, NGOs, and local care providers. Formats include printed brochures, online toolkits, video tutorials, webinars, and structured online training courses, reflecting a relatively advanced digitalisation of caregiver education.

Romanian grey literature exhibits strong coverage of all major thematic areas. Basic dementia knowledge and communication strategies are well developed, with several handbooks providing nuanced guidance on adapting communication to disease stages, managing behavioral changes, and supporting emotional expression. Activation techniques are presented in detail, often with ready-to-use activity plans, seasonal calendars, and advice on adapting household tasks to maintain autonomy and cognitive stimulation.

One of Romania's notable strengths is its emphasis on caregiver psychological support. Many resources include dedicated sections on managing stress, maintaining personal well-



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being, and balancing caregiving responsibilities with other life roles. Some offer checklists and reflective exercises for self-assessment, indicating a higher level of pedagogical sophistication compared to other countries. However, similar to other contexts, the integration of digital tools and technology remains limited, with only a few materials referencing available apps or telecare platforms.

The Romanian landscape demonstrates a strong foundation for AICOMM integration. The abundance of structured, multi-format resources provides a rich base for localisation, while existing gaps in digital literacy training and technology use create opportunities for the platform to complement and expand current offerings.

The most valuable resources for AICOMM from the Romanian literature come from:

- Romanian Alzheimer Society
- Webinar: Dementia Explained for Everyone – How to Face Everyday Challenges - YouTube (presentation in Romanian)
- Story2Remember (Erasmus+ project) – Dementia Care: Drama and Storytelling (Booklets in Romanian)
- INDEED Project (EU-funded, SE Europe) – Online Learning Platform for Dementia Care (Romanian Version)

Spain – Rich and Varied Resource Landscape

With 12 identified resources, Spain has the most abundant and diversified grey literature landscape among the five countries. The materials originate from a broad mix of public health agencies, Alzheimer associations, NGOs, and private providers, and they include printed guides, brochures, online toolkits, videos, podcasts, webinars, and e-learning courses.

Spanish-language resources excel in their comprehensiveness and pedagogical variety. Communication is a central focus, with materials ranging from basic caregiver handbooks to advanced guides on non-verbal communication, managing resistance, and supporting decision-making capacity. Many resources incorporate case studies, real-life scenarios, and caregiver testimonies, which enhance practical relevance.

Spain also offers some of the most detailed content on activation and engagement, including activity libraries, thematic calendars, and multimedia resources for music, art, and reminiscence therapy. These materials are often culturally tailored and include advice on integrating activation into daily routines.

Psychoeducation and caregiver support are addressed extensively, often supported by video series, podcasts, and peer-to-peer networks. Several resources explicitly discuss the



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emotional impact of caregiving and promote self-care as a critical competency. Legal and ethical guidance is more comprehensive than in most other countries, with detailed manuals explaining rights, entitlements, and administrative procedures.

Spain is also the most advanced in integrating digital components into caregiver education. Several materials present step-by-step guidance on using mobile apps, remote support platforms, and assistive devices, although the overall number of such resources remains modest.

Spain's well-developed landscape positions it as a valuable content model for AICOMM, providing examples of innovative pedagogical approaches and multimedia integration. However, even here, the lack of AI-based personalization and limited use of adaptive technologies suggest areas where AICOMM can lead.

The most valuable resources for AICOMM from the Spanish literature come from:

- Alzheimer Spain Foundation
- Clinic Barcelona
- CRE Alzheimer – Imserso
- Spanish Society of Geriatrics and Gerontology
- CEAFA Alzheimer

Slovenia – Small but Emerging Resource Base

Slovenia contributed 39 resources most of which are printed manuals, online brochures, and basic caregiver guides as well as video materials produced by public institutions and Alzheimer associations. Structured e-learning courses are not available.

Thematically, Slovenian resources focus on basic dementia knowledge, communication, and caregiver well-being. Several materials incorporate elements of validation therapy and person-centered care, reflecting alignment with contemporary dementia care principles. Activation content is present but typically limited to general advice on maintaining routines and encouraging social interaction.

Resources addressing legal aspects and digital tools are sparse and often superficial. Few materials explain caregivers' rights or available services, and those that mention technology do so only briefly, without practical guidance.

Despite these limitations, Slovenian resources demonstrate a growing interest in holistic caregiver education. There is also evidence of increasing collaboration between public institutions and NGOs, which could support future resource development. AICOMM can play a catalytic role in Slovenia by introducing more structured, interactive content and expanding coverage of underrepresented topics such as legal literacy and technology use.



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The most valuable resources for AICOMM from the Slovenian literature come from:

- Spominčica, Alzheimer Slovenia
- eDementia Portal

Cross-Country Observations

The country-level findings reveal a diverse but uneven landscape of dementia caregiver education in grey literature form. Spain and Romania stand out for their richness, variety, and thematic breadth, while Czech and Slovenian materials show balanced coverage with strong communication components. North Macedonia, by contrast, presents smaller and more fragmented resource bases, with significant thematic and digital gaps.

Across all countries, legal content and digital literacy remain the least developed areas, while communication and basic dementia knowledge are the most consistently addressed. A recurring pattern is the dominance of static, text-based resources, with fewer interactive or technology-enhanced materials a gap that AICOMM is uniquely positioned to address

Comparative Analysis across Countries

The cross-country analysis reveals a heterogeneous landscape of dementia-related educational materials for informal caregivers, shaped by differences in national policy frameworks, institutional capacity, civil society engagement, and digital maturity. Although all five countries share common thematic priorities, their depth, diversity, and approach vary significantly. These variations have important implications for the design and localisation of the AICOMM platform, which aims to build on existing strengths while addressing shared and country-specific gaps.

Thematic Coverage Comparison

The table below summarises the approximate level of thematic coverage by country across the six main domains identified in the review. Coverage is rated as High (✓✓✓), Moderate (✓✓), or Low (✓) based on the number, depth, and diversity of resources identified.

Thematic Area	North Macedonia	Czech Republic	Romania	Spain	Slovenia
Basic dementia knowledge	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓



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Thematic Area	North Macedonia	Czech Republic	Romania	Spain	Slovenia
Communication and interaction	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Activation and daily engagement	✓	✓✓	✓✓✓	✓✓✓	✓✓✓
Caregiver psychological support	✓	✓✓✓	✓	✓✓✓	✓✓
Legal and ethical guidance	✓	✓✓	✓	✓✓✓	✓
Digital tools and technology	-	✓	✓	✓✓	-

Legend: ✓✓✓ High coverage ✓✓ Moderate coverage ✓ Low coverage - No coverage

This comparative snapshot highlights several important trends:

- Spain, Romania and Czech Republic consistently score high across all thematic areas, reflecting the breadth and depth of their grey literature ecosystems.
- Slovenia shows strong coverage of communication and knowledge, but lower emphasis on legal issues and digital tools.
- North Macedonia demonstrates more limited and uneven coverage, particularly in activation, legal, and digital areas.
- Digital tools remain underrepresented across all countries, even where other areas are well covered.

Similarities across Countries

Despite significant variations, several commonalities emerge:

- All countries prioritise basic knowledge and communication strategies, underscoring their foundational importance in dementia caregiving.
- Most resources target informal caregivers and family members, confirming the central role of families in dementia care in all five contexts.
- Across the board, grey literature remains dominated by text-based, static formats such as brochures and manuals, with limited use of interactive or multimedia tools.



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- Legal and technological content is consistently underdeveloped, indicating widespread unmet needs in these domains.

These shared patterns point to structural challenges such as the absence of coordinated national training frameworks and limited investment in caregiver education that AICOMM can directly address through its cross-border, technology-enabled approach.

Differences and Country-Specific Contrasts

While the overarching trends are similar, the extent and quality of materials vary considerably:

- Spain leads in both quantity and innovation, with the most extensive range of formats (brochures, e-learning, podcasts, activity libraries) and the most advanced integration of digital elements.
- Czech resources excel in caregiver psychological support and legal information, providing structured exercises, detailed guides, and practical tools.
- Romania and Slovenia stand out for their emphasis on communication and activation strategies.
- North Macedonia lags in the availability and diversity of resources, with most materials remaining basic and descriptive.

Another key contrast is in pedagogical approach. Spanish and Romanian resources often include interactive features, case studies, or reflective exercises, while materials from North Macedonia tend to remain didactic and information-focused. Similarly, Spain, Slovenia and Romania show stronger efforts to integrate caregiver voices through testimonials and peer-support narratives than the other two countries.

Format and Accessibility Differences

The format of resources is another major point of divergence. Spain and Romania have significantly more multimedia and e-learning materials, reflecting greater investment in digital caregiver education. The Czech Republic and Slovenia have begun to integrate digital formats, while North Macedonia remain reliant on printed materials and static PDFs.

Language accessibility is also uneven. Spanish and Romanian materials are more likely to be written in plain, caregiver-friendly language, while some Czech and Slovenian materials use more technical terminology, potentially limiting accessibility for lay audiences. Macedonian materials are generally simple and easy to understand but often lack depth.



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Implications for AICOMM

This comparative analysis has several key implications for the design and implementation of the AICOMM e-learning platform:

1. Leverage existing strengths: From each country there are materials that offer models for comprehensive, multimedia-rich, and caregiver-oriented content that can inform AICOMM's pedagogical design.
2. Prioritise underdeveloped areas: Across all countries, there is a clear need for more robust content on legal literacy and digital tool use, areas where AICOMM can provide high added value.
3. Address inequalities in resource availability: In North Macedonia, where grey literature is sparse, AICOMM can serve as a primary national repository and fill critical content gaps.
4. Enhance interactivity and personalization: Across all contexts, there is a need to move beyond static materials towards interactive, scenario-based, and AI-driven learning modules.
5. Support language and cultural adaptation: Differences in language accessibility and cultural references highlight the importance of localized content and context-sensitive examples in platform design.

Implications for the AICOMM Platform Design

The findings from the grey literature review provide a rich evidence base to inform the design, structure, and implementation strategy of the AICOMM multilingual AI-supported e-learning platform. The cross-country analysis highlights both the strengths of existing resources and significant gaps that AICOMM can address to create a more impactful, innovative, and inclusive educational tool for informal caregivers of people with dementia (PwD). This section synthesises those insights into strategic recommendations across five key dimensions: content, pedagogy, technology, localisation, and sustainability.

Strategic Orientation and Added Value of AICOMM

The AICOMM platform should position itself as a next-generation caregiver education tool that goes beyond existing grey literature in three fundamental ways:

1. Integration and consolidation: Serve as a centralised, multilingual hub that brings together diverse educational materials, bridging gaps between fragmented national resources and creating a unified caregiver learning environment.



2. Innovation and interactivity: Transform largely static content into interactive, scenario-based learning experiences enhanced by AI-driven personalisation, feedback, and adaptive learning pathways.
3. Localization and inclusivity: Provide content tailored to different cultural, linguistic, and care contexts, ensuring relevance and accessibility across all five partner countries and beyond.

By doing so, AICOMM can become not only a repository of knowledge but also a transformative educational ecosystem that empowers informal caregivers and strengthens dementia care capacity at the community level.

Content Priorities and Thematic Recommendations

The thematic gaps identified in the review point to clear priorities for AICOMM content development:

- **Legal and ethical literacy:** Develop comprehensive, regularly updated modules explaining caregiver rights, patient rights, guardianship procedures, financial support, and access to services in each country. These should include interactive decision trees and links to official national resources.
- **Digital literacy and assistive technologies:** Introduce training on digital caregiving tools from cognitive stimulation apps to remote monitoring devices and address issues of privacy, data security, and ethical use.
- **Advanced communication skills:** Expand beyond basic tips to include scenario-based training for managing challenging behaviors, late-stage dementia communication, and culturally sensitive interaction.
- **Caregiver mental health and resilience:** Create structured self-care pathways, stress-management exercises, and peer-support tools, responding to the underrepresentation of psychoeducation in current resources.
- **Activation and engagement:** Provide culturally adapted activity libraries, downloadable materials, and interactive planning tools that help caregivers integrate activation techniques into daily life.

Where existing materials are strong such as basic dementia knowledge and introductory communication AICOMM should curate and integrate them. Where gaps exist particularly in legal, technological, and psychological domains the platform should develop new content to fill those voids.



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Pedagogical and Learning Design Recommendations

Most current resources are text-based and didactic, highlighting the need for a more dynamic and engaging learning approach. AICOMM should adopt a modern, learner-centred pedagogical model that includes:

- **Scenario-based modules:** Realistic caregiving situations where learners make decisions and receive AI-generated feedback.
- **Micro-learning units:** Short, focused lessons that caregivers can complete flexibly, recognising their limited time and high stress.
- **Reflective exercises and self-assessments:** Tools that help caregivers evaluate their skills, identify learning needs, and track progress.
- **Peer learning components:** Discussion forums, testimonial videos, or virtual communities that encourage knowledge exchange and social support.
- **Accessibility by design:** Clear, simple language, audio-visual content, and design adaptations for caregivers with varying literacy levels and digital skills.

These elements will not only make learning more engaging but also increase retention and practical application, leading to measurable improvements in caregiver competence and confidence.

Technology and AI Integration Opportunities

The review shows that grey literature rarely addresses digital tools and AI-based support, leaving significant room for AICOMM to lead in this area. Key opportunities include:

- **AI-driven personalisation:** Tailor learning paths to individual caregiver needs, caregiving stage, and preferred learning style.
- **Adaptive content delivery:** Use AI to recommend relevant modules, resources, or exercises based on user interactions and progress.
- **Conversational agents and chatbots:** Provide real-time guidance, answer common caregiving questions, and support communication skill practice through simulated dialogues.
- **Data-driven insights:** Aggregate anonymised user data to identify common challenges, track learning outcomes, and continuously improve platform content.
- **Integration with external tools:** Offer links to relevant apps, legal information portals, and online support networks, making AICOMM a one-stop gateway for caregivers.

These innovations will differentiate AICOMM from existing training materials and position it as a pioneering digital solution in dementia caregiver education.



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Localisation and Cultural Adaptation Strategies

The wide disparities in available resources and thematic emphases across countries underline the importance of localisation. AICOMM's success will depend on its ability to adapt content to national legal frameworks, cultural practices, and language nuances. Key strategies include:

- **Language-specific modules:** Ensure all materials are not just translated but culturally adapted, using terminology, examples, and case studies relevant to each context.
- **Country-specific legal sections:** Embed national legislation, social service structures, and benefit systems directly into the platform content.
- **Culturally sensitive communication content:** Reflect differences in family dynamics, caregiving expectations, and social norms in training modules.
- **Flexible modular structure:** Allow countries with fewer existing resources (e.g., North Macedonia, Slovenia) to develop foundational content, while countries with richer landscapes (e.g., Spain, Romania) focus on advanced modules.

Localisation will enhance both relevance and adoption, ensuring that caregivers see AICOMM as a trusted, context-appropriate resource rather than a generic training tool.

Sustainability and Ecosystem Integration

For AICOMM to have lasting impact, it must be embedded within the broader dementia care ecosystem. The following strategies will support long-term relevance and scalability:

- **Partnerships with public institutions:** Collaborate with ministries, Alzheimer associations, and care organisations to ensure content accuracy, policy alignment, and visibility.
- **Continuous content updates:** Use AI-enabled monitoring to identify new grey literature and legal changes, automatically suggesting updates to the platform.
- **Community feedback loops:** Integrate caregiver feedback mechanisms to refine and expand platform content continuously.
- **Certification and recognition:** Explore partnerships for formal accreditation of completed modules, increasing the platform's value to caregivers and professionals alike.



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Summary of Strategic Priorities

Priority Area	Key AICOMM Actions	Expected Impact
Legal & Ethical Guidance	Develop updated, country-specific modules	Improved caregiver confidence and rights awareness
Digital Tools & Literacy	Introduce practical guides and AI-driven recommendations	Increased use of technology in home care
Advanced Communication	Scenario-based training and chatbot simulations	Enhanced caregiver skills and reduced behavioral crises
Caregiver Well-being	Self-care modules, peer networks, stress tools	Reduced caregiver burnout and improved mental health
Activation Techniques	Activity libraries and personalised suggestions	Greater engagement and quality of life for PwD
Localisation	Cultural adaptation and legal contextualisation	Higher adoption and learning relevance
AI Integration	Adaptive content, feedback, and virtual support	Personalised learning and continuous improvement

AICOMM has the opportunity to bridge critical gaps, transform caregiver education, and set new standards for digital support in dementia care. By aligning platform development with the insights from this review prioritising content gaps, leveraging AI and interactivity and embedding localisation AICOMM can create a sustainable, scalable solution that meets the real needs of informal caregivers across Europe.

Conclusions and Future Directions

The review identified a total of 132 resources, representing a heterogeneous landscape shaped by differences in national policies, institutional capacity, civil society engagement, and digital readiness. The materials span a range of formats — from printed brochures and



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online guides to video tutorials and e-learning courses — but remain predominantly text-based and static. Approximately two thirds of all materials are delivered as PDFs, brochures, leaflets, and written guides, while about one third take the form of videos, webinars, or online courses. This pattern reflects traditional modes of knowledge transfer rather than contemporary approaches to adult learning. Most resources are produced by NGOs and civil society organisations (around 68.4 %), underscoring their central role in caregiver education, while public institutions contribute about one fifth of the materials (19.5 %) and private sector and care providers around 12 %.

From a thematic perspective, the review reveals a clear hierarchy of focus areas. The majority of resources address basic knowledge about dementia (40.1%) and communication skills (15.8 %), confirming their foundational role in supporting caregivers. Content on principles of care (15.3 %), activation and engagement techniques (10.8 %) and caregiver well-being (8.1 %) is also relatively well represented, though often lacking depth and practical application. However, resources covering legal and ethical aspects (5.9 %) and digital tools and technologies in care (4.1 %) are scarce, exposing significant knowledge gaps in areas that are increasingly critical to effective caregiving and navigation of health and social care systems.

The cross-country comparison highlights clear but varying levels of maturity in dementia-related grey literature. The Czech Republic and Slovenia demonstrate the most extensive resource bases in terms of quantity, with strong coverage of basic dementia knowledge and communication strategies. Czech materials further distinguish themselves through well-developed content on caregiver psychological support and person-centred communication, although legal and digital topics remain only moderately covered. Spain and Romania, while producing fewer resources in absolute numbers, offer high-quality, pedagogically diverse materials. Spanish resources integrate multimedia formats, structured activation content, and practical communication guidance, while Romanian materials stand out for their holistic focus, including caregiver well-being, practical activity planning, and clear legal guidance. In contrast, North Macedonia presents the most limited and fragmented collection, largely consisting of basic, text-based materials with minimal coverage of activation strategies, caregiver psychological support, legal issues, or digital tools. These disparities reflect broader systemic differences such as the strength of national dementia policies, the role of Alzheimer associations, and the degree of investment in caregiver support underscoring the need for a coordinated, cross-border approach like AICOMM to ensure equitable access to high-quality educational resources across Europe.

Across all contexts, several shared challenges and limitations emerge. Grey literature resources are frequently static, descriptive, and didactic, offering information but limited opportunities for active learning, skill development, or personalised guidance. They rarely address the evolving digital landscape of dementia care, leaving caregivers without adequate support in navigating new technologies and digital tools. Legal and policy



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information, when present, is often fragmented or outdated, creating barriers to caregivers' access to services and entitlements. Moreover, existing materials seldom incorporate interactive features, reflective exercises, or scenario-based learning opportunities all of which are essential for building practical caregiving competencies and supporting caregivers' psychological resilience.

Against this backdrop, the AICOMM project has a unique opportunity to bridge critical gaps and redefine dementia caregiver education. The findings of this review point to several strategic directions for the platform's development:

- **Expanding thematic scope:** AICOMM should prioritise the creation of comprehensive modules on legal literacy, digital tools, and advanced communication, complementing existing strengths in basic knowledge, principles of care, and introductory communication skills.
- **Transforming pedagogy:** The platform can move beyond static materials by incorporating interactive, scenario-based modules, microlearning units, self-assessments, and peer-support components that reflect modern adult education practices and respond to caregivers' time constraints.
- **Harnessing AI and technology:** AICOMM's AI-driven features — such as adaptive learning pathways, personalised recommendations, and conversational agents — can provide caregivers with tailored, on-demand support that existing materials lack, especially in managing challenging situations and complex decision-making.
- **Enhancing localisation:** The diversity of national contexts requires a modular, culturally sensitive approach that respects language nuances, legal frameworks, and caregiving practices while maintaining a shared core of evidence-based content.
- **Building sustainability:** Partnerships with public institutions, NGOs, and professional associations will be essential for ensuring the platform's credibility, scalability, and long-term relevance. Continuous content updates, supported by AI-based monitoring of new grey literature and policy changes, will help keep the platform current as policies and practices evolve.

Beyond content and technology, AICOMM also offers an opportunity to reframe the role of informal caregivers. Rather than passive recipients of information, caregivers can become active learners, empowered decision-makers, and vital partners in the dementia care continuum. By integrating educational resources, psychosocial support, and practical tools in a single, user-friendly digital environment, AICOMM can help caregivers not only acquire skills but also build confidence, resilience, and a stronger sense of agency.

The implications of this review extend beyond the AICOMM project itself. They highlight the urgent need for systematic investment in caregiver education at national and European levels, the importance of cross-sectoral collaboration, and the transformative potential of digital and AI-enabled approaches in dementia care. As populations age and the prevalence



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of dementia rises, the demand for informal caregiving will continue to grow. Supporting caregivers with high-quality, accessible, and culturally relevant education is not just a policy priority it is a social imperative.

In conclusion, this review establishes a critical evidence base for the next phases of AICOMM. It identifies where existing grey literature provides a solid foundation to build upon and where new, innovative content is urgently needed. Most importantly, it affirms the strategic vision of AICOMM: to create a multilingual, adaptive, AI-powered learning platform that empowers caregivers, enhances quality of life for people with dementia, and contributes to more inclusive, responsive, and resilient care systems across Europe. The insights gained here will guide the development of AICOMM's content architecture, pedagogical approach, and technological features ensuring that the platform is not just a repository of knowledge but a transformative tool for dementia care in the 21st century.