TRIO

Adult education on digital, health and data literacy for citizen empowerment

SPANISH NATIONAL REPORT

SUMMARY

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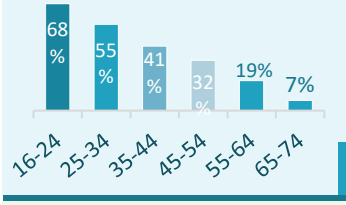
DIGITAL, HEALTH, AND DATA LITERACY

DIGITAL LITERACY

Digital proficiency **drops** significantly **with age**



In the last 3 months...

...have **used a smartphone**
-99% aged 16-54
-97% aged >55

... have **used internet on a daily basis**:
-97% aged 16-34
-90% aged 35-54
-50% aged >55

... have **shopped online**
- 68% aged 16 - 34
- 62% aged 35 - 54
- 30% aged >55

Preferred activities

16-34 group: Social networks, Messaging, Music

35-54 group: Messaging, Video/audio calls, Search info

>55 group: Messaging, Search info, Read news & magazines

HEALTH LITERACY

Most **difficulties** are perceived in:

- Identify **health´s political determinants**
- Judging media-based **health information**

Spanish citizens between the ages of 35 and 54 make **the most use of digital tools for health-related matters**

Health literacy is most **influenced by**:

- **Education**
- **Income**

DATA LITERACY

80% of Spanish citizens aged 16-74 believe that they possess **advanced data skills**

Most data literacy resources are geared towards the workforce

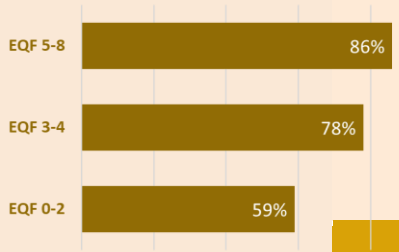
- 86% of Spanish workers believe that data is instrumental in helping them perform their job duties
- 83% of the Spanish workers have expressed interest in enhancing their proficiency in Data Literacy
- Only half of the Spanish workers report having access to the necessary datasets to enhance their job performance

Most important data literacy skills for Spanish citizens

- Use data appropriately for specific purposes
- Interpret data visualizations
- Apply critical thinking
- Use analytical tools and methods
- Identify manipulated data

SOCIOECONOMIC IMPACTS

Self-perceived health status and wellbeing of Spanish citizens increases with **educational level**



Unemployment is linked to...

- Economic crisis
- Lack of specific training & skills
- International competence
- Technological changes
- High dependance on seasonal tourism

1 out of 3 social media posts about health topics contains whether **fake, inaccurate, or misleading information**

Results of the desk research

Digital literacy

While digital literacy rates in Spain have increased significantly over the years, reaching up to 60%, it still falls short of the 80% target set in the 2025 Digital Agenda. The digital literacy gap is particularly evident among citizens aged 65 and above, who tend to use the internet less frequently, engage in online shopping and other transactions at a lower rate, and are often hindered by a lack of internet access, digital skills, equipment, and infrastructure. This is mainly due to the fact that the average age of municipalities with a population of less than 5,000 inhabitants is higher (50 years old) than the national average age (43.6). As a result, this group is at serious risk of being left behind, and various social movements have emerged to prevent the digital society from abandoning the older population. For instance, the "Soy mayor, pero no idiota" (I'm old, but I'm not an idiot) campaign demands personal attention for older adults and those who are digitally illiterate when conducting transactions in bank offices.

At the educational level, there is a digital literacy gap that disproportionately affects citizens with an EQF level 3 or lower, including migrants from outside of Europe and the unemployed. This underscores the urgent need for equal access to learning tools and programs that can help individuals acquire the skills necessary to thrive in our increasingly digital society. Addressing this gap is essential for ensuring that all members of society can participate fully in the economic and social benefits that come with technological advancement.

Health literacy

In 2011, a survey called HLS-EU revealed that Spain has problematic levels of general health literacy. The country scored 32.88 out of 50, with a staggering 58.3% of Spanish participants displaying limited or inadequate health literacy. Health literacy is significantly influenced by various factors such as age, education, self-rated health, social status, income level, chronic illnesses, visits to the doctor, and frequency of physical exercise. The most vulnerable population segments for inadequate health literacy are those with low education, negative self-esteem, no exercise, and weak social support. Cultural reasons explain why women have better health literacy than men. Citizens in small population centers also have lower health literacy than those in larger cities, perhaps because of the limited health services available and the higher average age of their citizens. The Spanish population struggles the most with the dimension of health promotion and the ability to evaluate or judge health-related information, particularly within the scope of healthcare. On the other hand, the population appears to fare better in the area of disease prevention and the ability to apply or use health-related information.

Data literacy

While there have been many studies on data literacy in the business world, there is a dearth of information regarding data literacy for daily use by citizens in Spain. According to available data, citizens between the ages of 16 and 34 perceive themselves as having high levels of data literacy skills. However, there is a marked increase in the rate of data illiteracy among citizens aged 55 or older. Additionally, data reveals that the living environment is a significant factor in determining data literacy, while no notable differences exist between genders.

Based on the findings of this desk research, it is evident that while access to the internet, digital devices, and information has increased in recent years, there are still significant disparities in digital, health, and data literacy among various groups within the Spanish population. These imbalances persist across age groups, educational levels, incomes, and types of living arrangements. It is therefore crucial to provide improved access to information and tools that can enhance individuals' literacy levels

in these areas. This can help bridge the gap and promote equitable distribution of digital, health, and data literacy in the Spanish society.

Results of the interviews

Mixed views on the usefulness of the internet for healthcare information and concerns about access for certain groups.

The majority of the interviewed individuals from the three different health groups believe that basic healthcare in Spain is equally accessible for everyone, both in terms of financial sense and physical and mental capability. However, some obstacles were highlighted regarding older and illiterate individuals' access to some health services and the collapse of some health services. All interviewees confirm they know how to search for health information on the internet, but some of them do not trust the results they can get. To ensure the accuracy of the information, some interviewees contrast it in different sources, use common sense or official and trustful websites, while others can't make sure about the accuracy of the information and do not use the internet for such purposes. The usefulness of the internet in helping individuals make decisions about their health varies among the interviewees, with some finding it helpful for checking common and mild symptoms, but not as a replacement for a health professional's opinion, while others do not find it useful at all. Some interviewees use online medical portals, particularly the ones provided by the Murcia Health Service in Spain.

Unclear on Medical Data Storage and Access

Most of the interviewees do not know where their medical data is stored and who has access to it. None of the interviewees have trouble understanding their medical file. Some of the interviewees are unsure if they can make changes in their medical history or do not know how to proceed if they want to restrict access to their medical file.

High digital tool usage for medical appointments and medication management, but lower adoption of health monitoring apps

Based on the responses from the 7 interviewees, it can be concluded that a significant proportion of the population already use digital tools to manage their medical appointments and medication schedule. Some of the commonly used tools include the phone calendar and "Cita Previa" from the Murcia Health service. In terms of using applications to monitor health, a smaller proportion of the interviewees used apps such as Zapp life (Xiaomi), Yuka, Garmin connect, Polar Flow, and Strava.

Furthermore, the majority of the interviewees expressed interest in using online platforms or manuals to improve their digital health skills. Short videos in social media, clear information without technical terms, images, exercises and use cases were highlighted as the most helpful forms of information.

Gamification and short courses to improve digital health and data literacy skills

To encourage participation in training for improving digital health and data literacy, interviewees suggested the use of gamification, short videos, short courses, social media, workshops with reduced groups, and focusing on health centers. Additionally, convincing people that certain skills can ease health procedures and save time was also deemed as an effective way to encourage participation.

Stakeholders perception: prevalence of poor digital and health literacy skills among patients and healthcare professionals

Regarding interviews with stakeholders, the majority of the interviwees agreed that they come across individuals with poor digital-, health-, or data-literacy skills in their line of work, particularly among patients. They also acknowledge the potential benefits of digitalization in healthcare for this group of individuals. One of the stakeholders highlighted that even some healthcare professionals have limited

digital skills, often related to age and resistance to change. Other interviwee provided further insight by indicating that there is a significant digital gap, particularly among the elderly and those with a low cultural level. The only stakeholder who does not encounter individuals with poor digital skills teaches medical and pharmacy students. Overall, the responses suggest that poor digital-, health-, or data-literacy skills are prevalent in healthcare, particularly among certain groups of patients, and that addressing this issue is critical to ensuring equitable access to healthcare services.

Socio-economic and demographic factors as contributors to digital divide in healthcare

Based on the responses of the stakeholders, it can be concluded that there is a clear link between socio-economic and demographic variables and the digital divide. Socioeconomic factors such as educational level and age, as well as geographic factors such as rural environments, were identified as contributing to the digital gap. In addition, older populations with limited digital skills and limited access to training were also identified as a demographic group that is more likely to be affected by the digital divide. The stakeholders suggest that this gap can lead to inequality in access, use, and impact of technology, and that further research is needed to better understand the causes and potential solutions to this issue.

Digitalisation of the Healthcare: Benefits and challenges

Overall, the digitalisation of the healthcare system has many potential benefits and challenges, as identified by the different stakeholders. Some of the benefits include:

- Increased efficiency and agility in healthcare processes, such as consultations, waiting times, and record-keeping
- Better access to health information and data for patients and healthcare professionals
- Improved patient medical interaction, with faster access to consultations and proactive care for chronic conditions
- Greater convenience and personalisation for patients through remote monitoring and telemedicine
- Reduction in administrative tasks and paper waste, allowing healthcare personnel to focus on providing medical care
- Strengthening of medication supply processes through electronic prescriptions

However, there are also several challenges that arise from digitalisation, such as:

- The digital divide, which can limit access to healthcare for those without internet access or training
- Cultural and demographic limitations that may affect patient and healthcare professional acceptance of new technologies
- Interoperability challenges, particularly in countries with multiple healthcare systems
- Privacy and security concerns around the use and storage of sensitive health data
- Age-related challenges, such as the digital gap for older citizens

To fully realise the benefits of digitalisation in healthcare, it is important to address these challenges through targeted interventions and policies that promote access, equity, and security.

Interviewees reveal mixed use of online health tools and identify gaps in availability and quality

Interviewees' use of online health tools varies depending on factors such as their health status, job requirements, and the quality and availability of the tools. While some online health tools, like the "Cita Previa" app and "Portal del Paciente," are being used by the Murcia Health Service, there is room

for improvement in the user experience of these tools. The responses indicate that there is still work to be done to increase the adoption and enhance the quality of online health tools.
The stakeholders have identified a range of important digital health tools. Like big data platforms for health professionals and IoT devices for patients to monitor aspects such as a sedentary lifestyle and sleep. They also see medical alerts, medical posts for monitoring, and access to medical prescriptions as important tools. While there are some concerns around the economic viability and potential pressure created by certain tools, stakeholders generally agree that digital health tools can help empower patients and improve their health outcomes.

Interviewees identified several online health tools that are missing or not made properly available to everyone. These include a platform for health professionals to access all patient data, an eye-catching app for patients to learn about health issues, and digital access to first consultation with specialists and online follow-up of open processes with specialists for public health. In addition, stakeholders mentioned the need for automatic reminders via online/SMS for periodic appointments for prevention, personalized online promotions and campaigns on available services, and a methodology for users to know that certain digital tools have been approved by professionals and/or user associations and are transparent and independent. Some of the challenges mentioned by stakeholders include limitations regarding technology access and digital skills, as well as the economic viability of implementing certain digital tools. It is clear that there is a need for a comprehensive approach to digital health that takes into account the needs and preferences of both patients and health professionals, and addresses the gaps and challenges identified by stakeholders in this questionnaire.

Regarding barriers that prevent people from using digital health tools. These include digital gap, educational, social, and economic barriers, as well as cognitive problems that make voice interfaces more useful. Other include age, cultural limitations, resources, reluctance to change routines, lack of continuity and interoperability of such technologies, adhesion, ignorance of tools, fear of the unknown, uncertainty and rejection of the use of tools on health data, lack of training in health centers, lack of promotion and support from competent authorities, and lack of skills and competencies in digital technologies/tools.

Policy Measures to Promote Universal Access to Digital Health and Bridge the Rural-Urban Health Divide

To help a wider range of people access online health information, the stakeholders suggest several policy measures, including positive discrimination to promote internet access in rural environments, universal access to digital health as a political objective, connectivity and training so that people know how to use technologies, and activities to improve digital capabilities. Other measures include focusing on primary care, training health professionals, workshops and training sessions for both patients and professionals, making people aware of the evolution and strategies in digital health, and using primary care for leading the change of paradigm through a massive knowledge campaign for the acceptance and use of health digital tools.

Transparent data storage to boost patient trust in digital health platforms

Stakeholders also suggest that patients do not know where their data is stored, which creates fears and reluctance to the use of digital media in terms of health data. While the stakeholders agree that it is important for people to have insight into their own medical history by using an online, and easy to use platform.

Gamification and accessibility for successful health literacy e-learning platform

Overall, the stakeholders agree that a successful online learning platform for health literacy should contain a variety of information and learning tools, such as tutorials, images with texts, videos, and

exercises. Gamification and interactive videos are also suggested as attractive learning tools, and a reward system based on points or rankings can serve as a motivational tool. Accessibility is emphasized as an important factor, with 24/7 assistance and chatbots suggested as a way to easily and quickly solve doubts.

To make e-learning platforms more attractive to people with fewer opportunities, stakeholders suggest showing the benefits of digital tools and providing easily accessible, understandable, and adapted information. To motivate people with poor eHealth skills to participate, stakeholders recommend adapting to their needs, making the benefits clear, offering interesting content, and carrying out workshops in health centers and neighborhood associations.

Stakeholders also highlight inspiring examples, such as the Pro-Empower project for diabetes management, the Jade-Care project for online rehabilitation, and patient organizations' initiatives to help members understand and use new technologies and tools. Overall, the stakeholders agree that adapting to the target audience and involving them in the co-creation process can help improve access and understanding of digital health data.

Suggested learning needs target groups

Based on the findings of this desk research, the following learning needs can be identified:

On digital literacy, there is a need to provide training programs and tools to basick digital skills for accessing health information and services, particularly among oler citizens.

Regarding health literacy, the focus should be put on health promotion and the ability to evaluate or judge health-related information, understand medic al data storage and access, including how to make changes or restrict access ot medical files, and increase adoption of health monitoring apps and other digital tools for managing medical appointments and medication schedules.

When it comes to data literacy, programs should focus on providing practical skills for daily use.

Such programmes should be based on gamification, short videos, short courses and workshops, considering the links between the socio-economic and demographic factors and the digital divide in healthcare, that will help citizens to understand the benefits and challenges of digitalisation in healthcare, including increased efficiency, better access, and concerns around privacy and security.

The success of these programmes are directly conditioned by need of an equitable access to information and tools that can enhance individuals' literacy levels in such fields. Programs should target individuals across age groups, educational levels, incomes, and types of living arrangements.

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