TRIO

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

National report for the Netherlands

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1. Introduction

Despite the steady rise in literacy rates over the past 50 years, there are still 773 million illiterate adults around the world, most of whom are women. These numbers, published by the UNESCO Institute for Statistics (UIS), are a stark reminder of the work ahead to meet the Sustainable Development Goals (SDGs), especially Target 4.6 to ensure that all youth and most adults achieve general literacy and numeracy by 2030. While middle- and low-income countries are struggling with these general literacy aspects, the European countries have a large percentage of their adult population classified above the target levels of literacy proficiency (e.g. International Assessment of Adult Competencies Level 1). However, in Europe, more than 90% of EU professional roles require at least a basic level of digital knowledge and skills, just as they require basic literacy and numeracy skills [1]. Yet, around 42% of Europeans lack basic digital skills, including 37% of those in the workforce [2]. Thus, digital literacy has become an important aspect in the continuous education of the EU work force, and not only.

The COVID-19 pandemic has accelerated the growth and usage of the digital technologies in the health domain, on one side bringing significant advances in health and wellbeing promotion through self-monitoring and faster/easier provision of digital health services, but on the other side exacerbating health inequalities and negatively impacting on the health literacy, in particular in the case of digitally illiterate adults. Health literacy [3] is a complex construct, covering three broad elements: (1) knowledge of health, healthcare and health systems; (2) processing and using information in various formats in relation to health and healthcare; and (3) ability to maintain health through self-management and working in partnership with health providers.

Digital and Health come hand in hand with Data, as the current digital transformation of the healthcare systems in Europe (and worldwide) is aiming at delivering person-centric data driven prevention and healthcare through new models, where medical experts are collaborating with health informaticians, data analysts, health data scientists and clinical information officers. Digital, Health and Data are becoming even more important in prevention and social and community care. Citizen-centred self-management of health, care and healthy behaviour provides an adequate answer to the expanding health care sector, thus supporting the sustainability of it. Citizens' enhanced digital and data skills enables them to take advantage of the further development of artificial intelligence for prevention and environmental measures. Thus, citizens must be able to understand data concepts, data handling (e.g. collection, monitoring, transfer, storage), and security and privacy aspects related to their personal and health data.

Digital, health and data literacy represent a basic combination of elements needed by the European citizens in order to better track, manage and improve their health and well-being through the use of digital tools. Because of the rapid digitalization of the healthcare system in Europe, citizens need to be proficient with their eHealth literacy skills and be sufficiently knowledgeable on the collection and sharing of digital data, as well as data privacy

regulations. Digital and data literacy of citizens is also important to assess what is happening with their data and which data protection measures they can take.

TRIO aims to empower citizens through the development of a modular approach of the trio of literacies (digital, health and data), creating and designing a manual, a toolkit and a Green Paper along with a platform that will ensure customization of content to different needs. The Manual, the first deliverable of the modular approach, will start by making a definition of the average levels of digital, health and data literacy of the three age groups in the partner countries; define the criteria and necessary skills for each group and level and understand the existing gaps. This will allow to direct the learners in a bottom-up approach to look at the world with different eyes towards being in charge of their own health and well-being. Awareness will be given to contexts beyond the well-researched theoretical practices or general population approaches, to explore instead the personal perspectives of citizens, including them in the outputs, as well as the ones of policy makers.

Definitions:

- Digital literacy: refers to the skills required to achieve digital competence, the confident and critical use of information and communication technology (ICT) for work, leisure, learning and communication [4].
- Health literacy: empowers people to make positive choices. It implies the achievement of a level of knowledge, personal skills and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions [5].
- Data literacy: is the ability to read, write and communicate data in context, with an understanding of the data sources and constructs, analytical methods and techniques applied [6].

The TRIO project will focus on the overlapping areas, in particular the digital data and digital health (eHealth) categories. See figure 1.

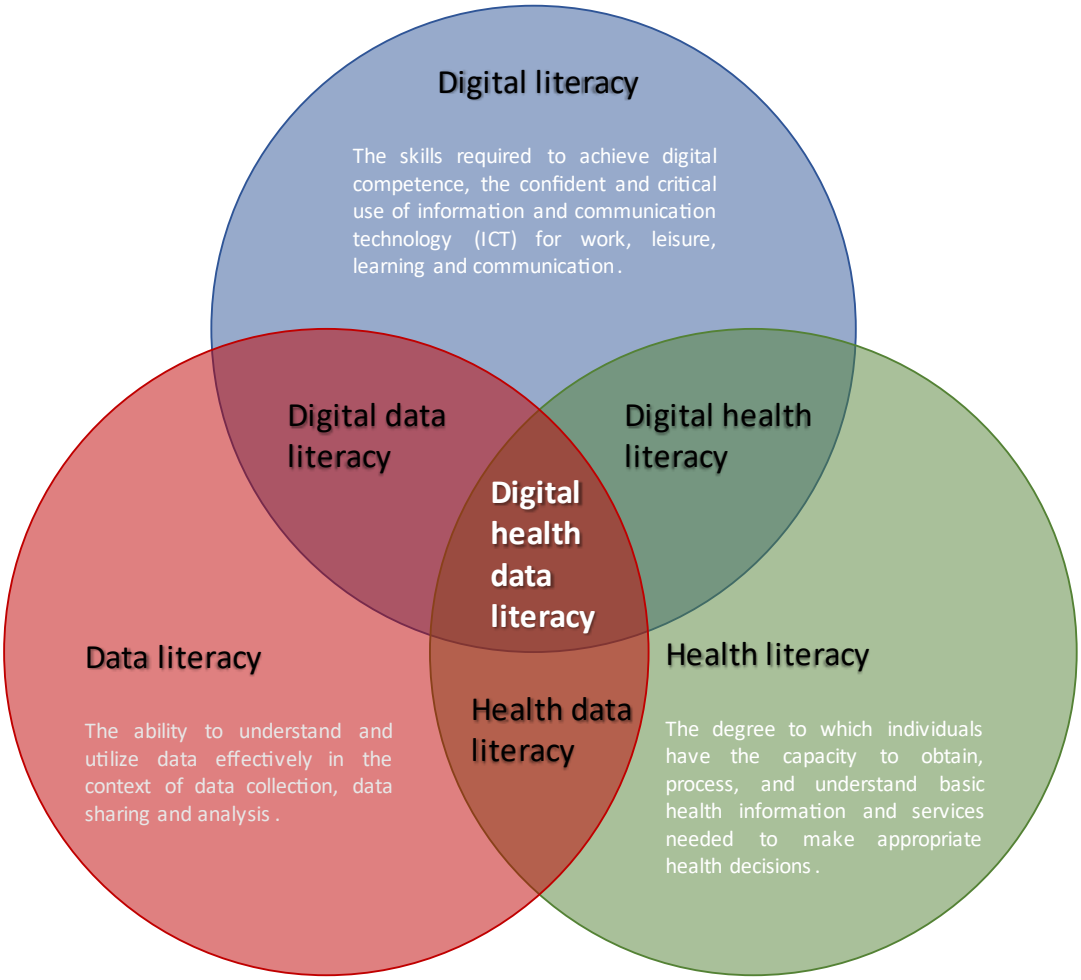

Figure 1: Venn diagram of the TRIO literacies.

1.1 Aim of the national report

The national report will be the basis for the TRIO Manual that will be released in March 2023. Target groups of the TRIO Manual are:

- Citizens of different ages and levels of education (18-35, 36-50 and 51+) by providing an integrated approach of the competences and skills on health, digital and data, empowering them to navigate in the eHealth world.
- Formal and informal educators by providing them with organised content to share with the citizens.
- Policy makers who will benefit from them to support improved person-centred health pathways.

The manual will act as a stand-alone output, but its contents will also be integrated in the TRIO educational platform with 3 main purposes:

- As preparatory material it will sensitise the learners to digital health and data sharing practices and impacts.
- As a publication disseminated at EU, national and local level, it will be a tool for eHealth-related stakeholders, and general public.
- With its underlying data collection, it will serve to refine the educational features.

1.2 Methodology

In order to achieve the above-mentioned aims, the following methods will be applied:

- Desk research in each country concerning status (including quantitative data), main challenges and existing approaches to digital, health and data sharing literacy, best-practice examples as well as training settings and contents
- Interviews in each partner country with stakeholders, experts and representatives of the target group for the training. For the interview questions see the annex.

2. Overview of the national health system in the Netherlands

2.1 Dutch healthcare regulations and financing

Everyone that lives or works in the Netherlands has an equal right to basic healthcare, as is stated in the Dutch Health Insurance Act (Zvw) dating from 2006. The Zvw describes which healthcare treatments, services and products must be made available to people by the various private health insurance companies and health providers. This so-called 'basic care' is financed by tax- and insurance premium payments. Citizens are required to take out health insurance but are free to choose their own healthcare insurer and any additional coverage. Reversely, health insurers are not allowed to decline anyone for any reason and are obliged to offer everyone the same basic healthcare packages for the same costs, regardless of their age, economic background, or current health status. For individuals with a sub-nominal income the government provides a healthcare allowance, covering (part of) the costs of their health insurance premium. Children under the age of 18 need to be insured, but do not pay a premium [7, 8, 9].

The basic healthcare plan only covers care that is considered to be effective, in accordance with the latest scientific research and practice results. The assessment of this effectiveness is done by the Dutch Health Institute (*Het Zorginstituut*). In most cases a certain amount of 'own risk' contribution is required for these services and treatments. Whether or not a medicine is covered by insurance is determined by its inclusion in the 'Medicine Inclusion System' (GVS),

which in turn is based on a certain medicine's efficiency and its therapeutic value relative to the Dutch standard treatment [10, 11].

Apart from the Zvw, there are three other major laws arranging healthcare in the Netherlands: the Act for Long-term Care (Wlz), the Act for Social Support (Wmo), and the Youth Act, all of which have been in effect in its current state since 2015. As the names suggest these laws arrange care and financing for people in need of fulltime long-term care, domestic or social support, or help with physical, mental or behavioural problems in children [8, 9, 12].

2.2 Accessing the Dutch medical system

Excluding emergency care, the Dutch acute and outpatient hospital and mental care can only be accessed by first going to a GP (general practitioner), who functions as a gatekeeper. When more specialistic care or further treatment is needed the general practitioner will, in consultation with the patient, arrange a reference to a specialist [8]. Dutch citizens are not obliged to be registered at a GP, but registration is highly recommended, since it will assure fast access to a physician in times of (non-emergency) need and access to a general practice centre during evenings, nights and weekends without any 'own risk' costs. Citizens are free to choose a (new) general practitioner at any time, but the GP is allowed to refuse new patients, for instance if they live too far away or the GP practice is fully booked [13].

Certain medicines can be bought without prescription. The Medicines Evaluation Board (CBG) decides which medicines should be made available and where. For instance, only at apothecaries and pharmacies, or also at supermarkets and gas stations. Medicines for long-term use, that can have severe side effects, need an injection, or are relatively new on the market need a prescription from a GP or specialist and can only be picked up at the apothecary [14].

2.3 Personal medical data

Medical information is (digitally) stored in a personal electronic health record at the concerning person's GP practice and apothecary. Everyone has the right to view their own health record, correct errors, and request information to be deleted. Medical data can exclusively be accessed by other healthcare practitioners and only if this is needed for a treatment. Any other medical information can only be shared after explicit permission from the person concerned. Insurance companies cannot access personal medical data [15]. Patients can access their own medical data via MijnGezondheid (see §2.4).

The Netherlands has a healthcare infrastructure called '*het landelijke schakelpunt*' (LSP). The LSP is a secure network that healthcare providers can connect with to share medical information. The LSP however is not a database; medical data is not stored there. The GP can sign up a patient's citizen service number (BSN) at the LSP, which will then be stored in a

referral index. By searching a patient's BSN a healthcare practitioner can access the medical information that has been made available to them [16].

2.4 The digitalisation of the Dutch healthcare system

Due to the corona pandemic and a growing shortage of healthcare professionals and staff, the Dutch healthcare system is being rapidly digitalised. Many forms of eHealth are being developed or are already in use. Current digital healthcare includes specialised care for specific medical needs, such as personal hearth monitors, online coaching, and apps to track habits or measurements [17]. Apart from specific needs, all patients have the possibility to request access to the online medical portal "MijnGezondheid.net". Here people can view their own medical record, make appointments with their GP, order medicine, receive medical results, and ask questions to a medical professional. The portal is also available as an app (MedGemak) [18].

For researching health information on the internet the website www.thuisarts.nl is available. This website was created by medical professionals and contains reliable and clear information on medical symptoms and which actions to take [19].

3. Overview of digital, health and data literacy in the Netherlands

3.1 Statistics on digital, health and data literacy

Digital literacy

The Netherlands is one of the highest ranking European countries in regard to digital literacy, with only Iceland ranking higher and both Norway and Finland at the same level (see figure 2). According to data gathered by the European statistical office Eurostat, 79% of the Dutch population between the ages of 16 to 74 was determined to have basic or above basic digital skills in the year 2021 [20]. This percentage has remained constant over the last five years with data from 2017 and 2019 indicating the same percentage [21]. The Netherlands are therefore very close to achieving the European target in digital proficiency which is set at 80% by 2030 [22, 23].

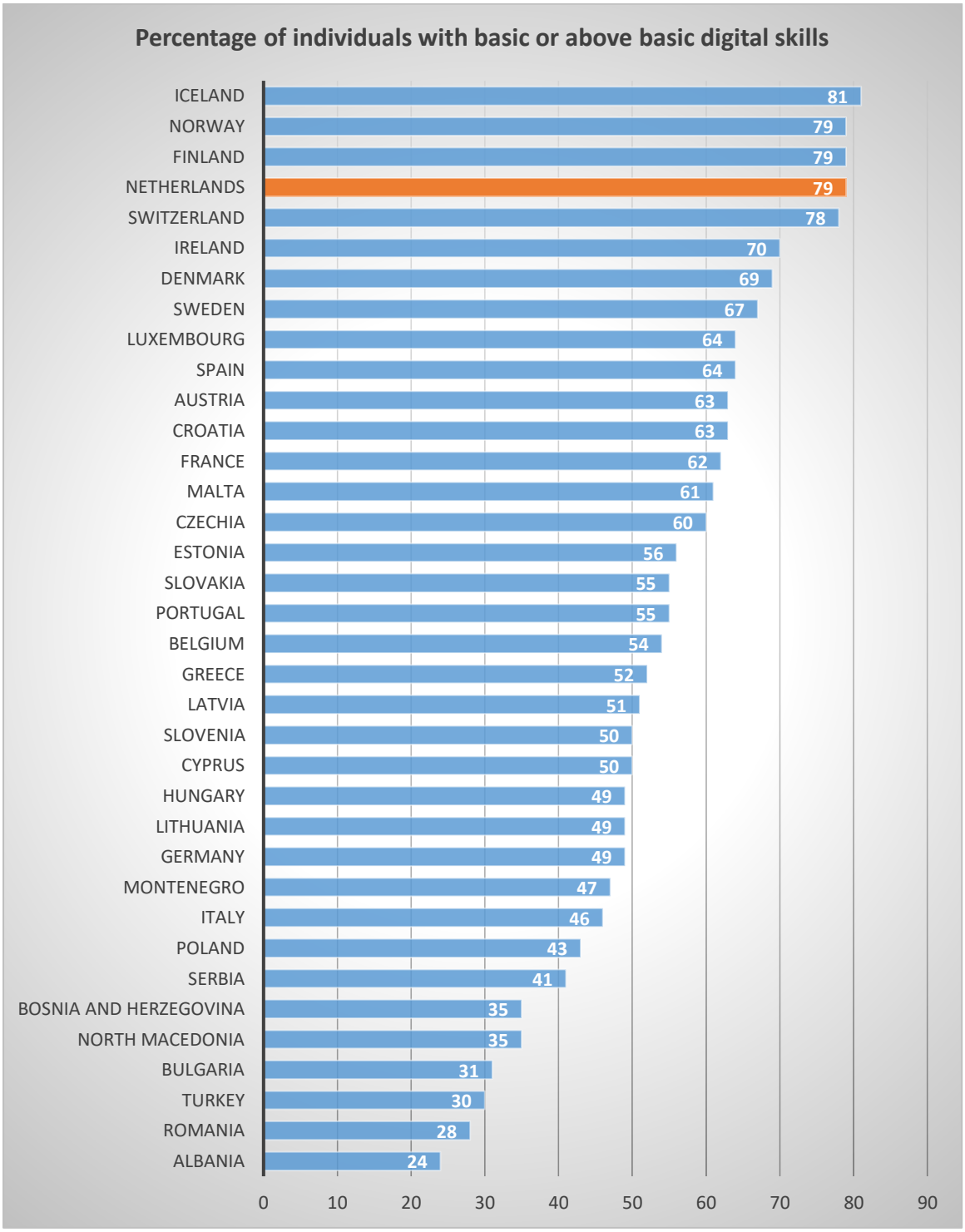

Figure 2. The percentage of individuals with basic or above basic digital skills in every European country in 2021 [20].

When dividing the population into separate age groups however, a clear disparity becomes visible. Statistics from both Eurostat and the Dutch Central Bureau of Statistics (CBS) show that digital literacy tends to drop with age (figure 3). Where the amount of individuals with digital skills in the age groups 18 to 55 is still above the European target of 80%, a significant amount of individuals in older age groups (mainly 65 years and above) have less than basic digital skills. Results show that in 2019 only 28% of individuals in the age group of 75+ have

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basic or above basic digital skills. Figure 4 shows that this difference is even bigger among women than it is among men, although data for gender specific digital skills for the ages of 75 and above is missing.

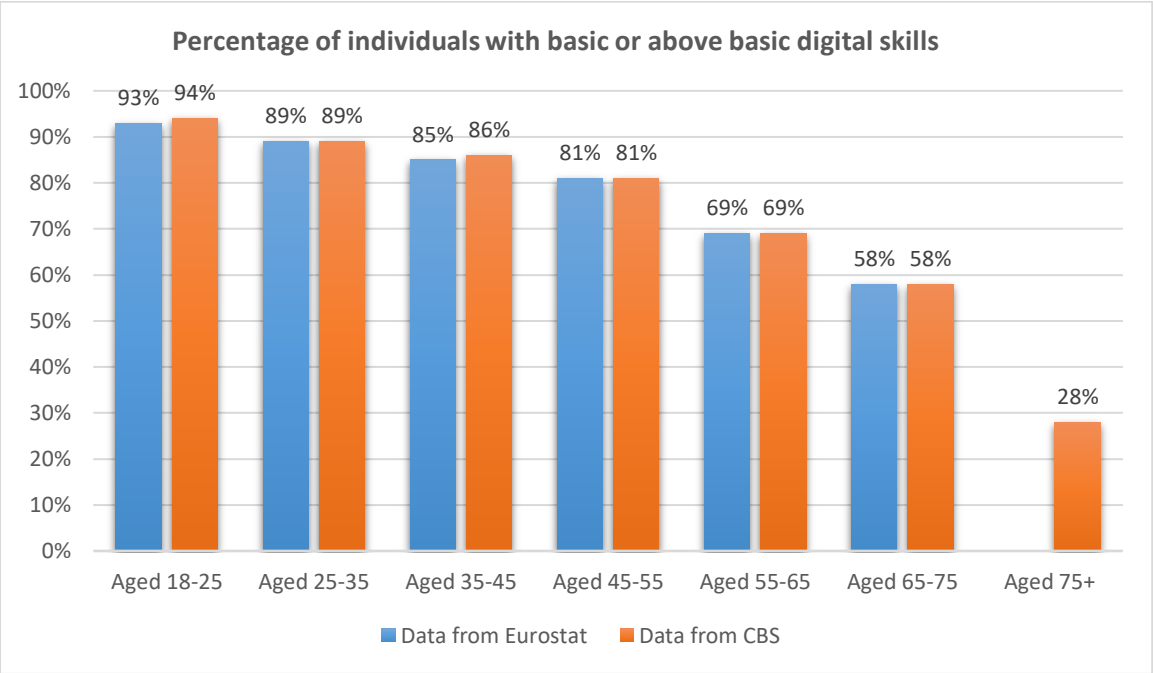

Figure 3. Comparative results from Eurostat and CBS on digital skills per age group in the year 2019 [20, 24].

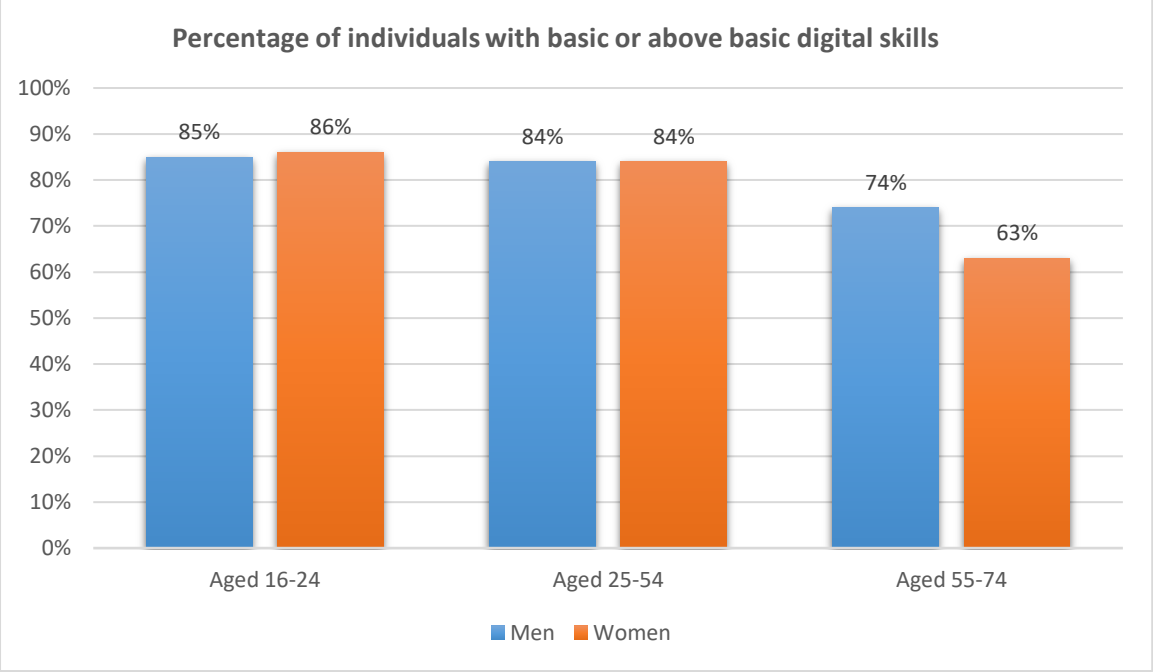

Figure 4. Digital skills of men and women in separate age groups in the year 2021 [20].

Even though older citizens are less apt in their digital abilities, the accessibility of digital data in the Netherlands seems to be more than adequate. A very large number of Dutch individuals (97%) have internet access at home. This percentage remains high (above 96%) in almost all of the age groups (see figure 5). Only among the 75-plussers this percentage drops to 80%, which is still much higher than the percentage of individuals with digital skills in the same age group. More than 90% of individuals in the ages of 12 to 65 years record to use their internet connection daily, compared to 79% of people in the age of 65 to 75 and 52% of people above the age of 75.

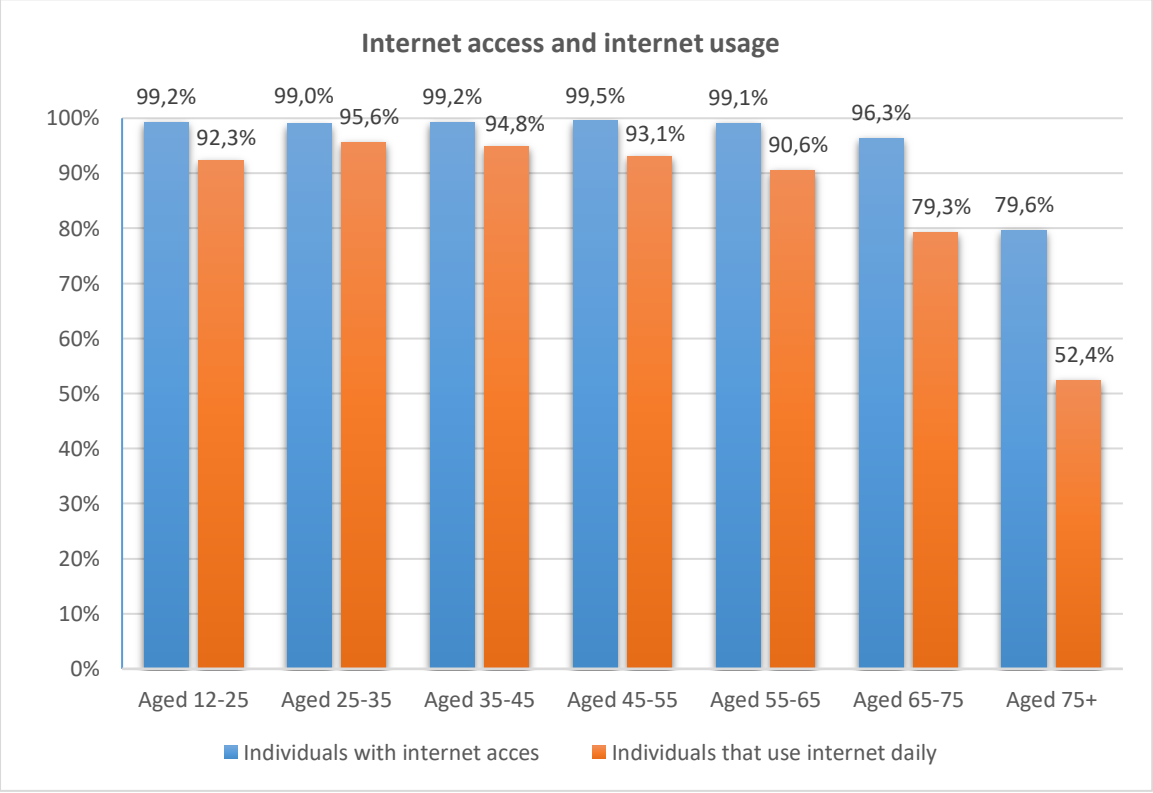

Figure 5. Percentage of individuals with internet access at home and daily use of internet per age group in 2021 [25].

More inequalities become visible when looking at socio-economic status. There is a clear correlation between digital ability and education, employment, residential setting and place of birth (see figure 6). The biggest disparity is in education level, where only 60% of people with a low formal education have basic or above basic digital skills, compared to 93% of individuals with a high formal education. The difference between individuals living in rural areas (76%), towns and suburbs (77%), and cities (81%) is minor and does not appear to be statistically relevant.

Internet access among the various socio-economic variables remains very high; above 92% (figure 7). Education level and income does seem to have a minor impact on accessibility, with an approximate 6% difference between individuals with a low versus high education and a

low versus high income. No significant correlation was found between internet access and residential setting. Figures on employment level or place of birth were not found.

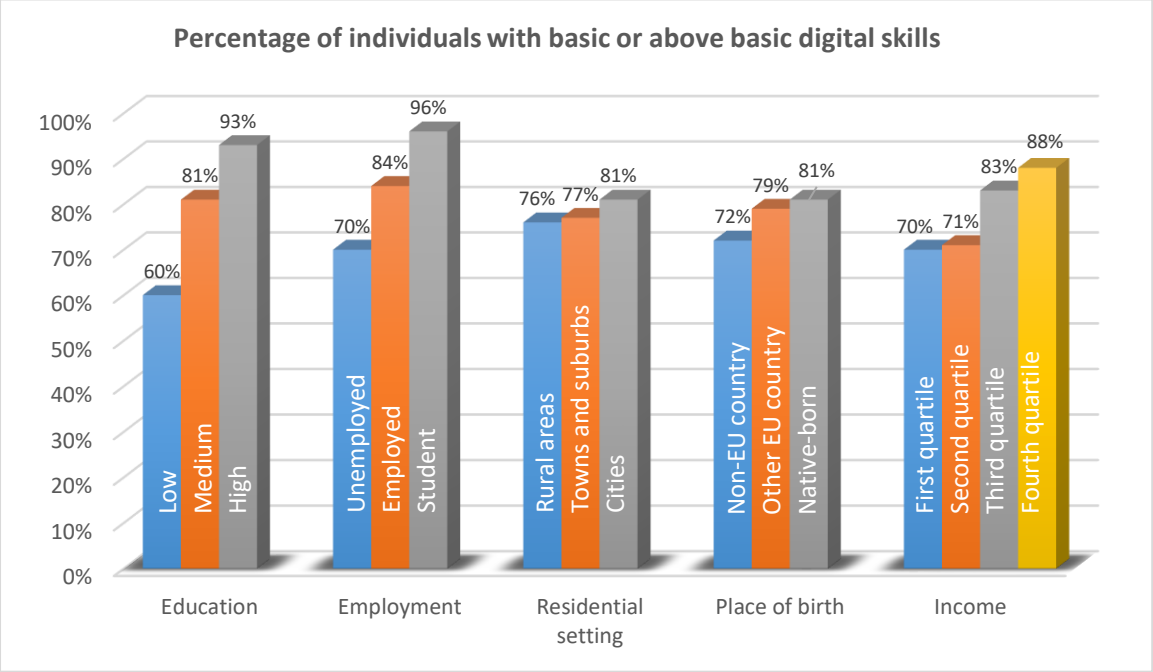

Figure 6. Digital skills per socio-economic variable in 2021 (education, employment, residential setting, place of birth) [20] and 2019 (income) [21].

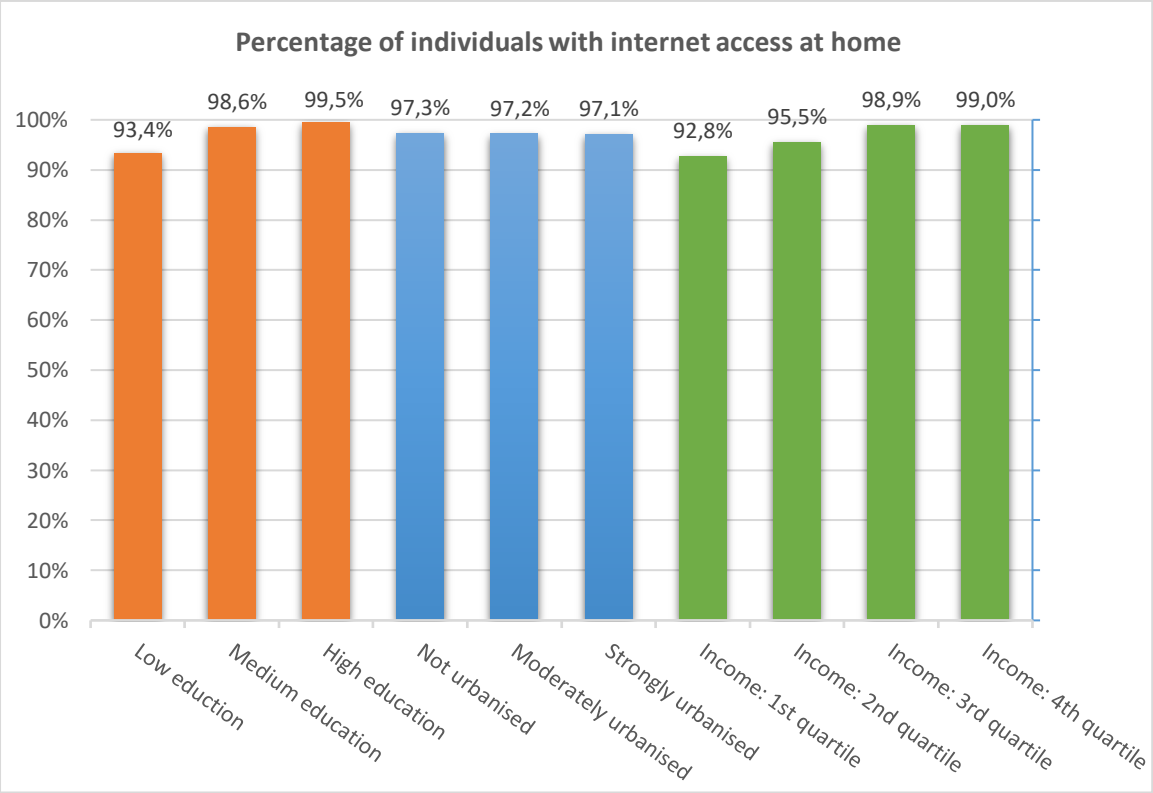

Figure 7. Percentage of individuals with internet access at home per socio-economic variable in 2021 [25].

Health literacy

There have been few recent studies about health literacy rates in the Netherlands. The most extensive health literacy study is the European Health Literacy Project (HLS-EU-Q) conducted in July and August 2011. The HLS-EU-Q measured health literacy levels in eight European countries [26]. The survey covered three domains; healthcare, disease prevention, and health promotion. For each domain four competences where investigated: Accessing (the ability to seek and find health information), Understanding (the ability to comprehend health information), Appraising (the ability to interpret and evaluate health information), and Applying (the ability to communicate and use health information). From the Netherlands 925 adults were interviewed, aged 25 years or older. All participants answered health literacy questions on a 4-point scale ranging from: 1 (very difficult), 2 (fairly difficult), 3 (fairly easy), to 4 (very easy). A 'don't know' answer was coded as a missing value. Table 1 shows the results of a factor analysis of the Dutch participants of the HLS-EU-Q [27].

Table 1. Results HLS-EU-Q for the Netherlands [27].

Competence Domain	*Items*	*Missings (n)* [b]	*Mean (SD)*	*Mean per item (SD)*	*Mean per item per quartile*		
					25	*50*	*75*
Accessing	11	231	35.2 (5.2)	3.2 (0.5)	2.6	3.2	3.7
Healthcare	3	82	9.7 (1.8)	3.2 (0.6)	2.7	3.3	3.4
Disease prevention	6	122	20.3 (3.1)	3.4 (0.5)	2.8	3.4	4.0
Health promotion	2	118	5.1 (1.7)	2.6 (0.8)	1.7	2.5	3.9
Understanding	11	157	36.8 (4.9)	3.3 (0.5)	2.8	3.4	3.9
Healthcare	4	58	13.5 (2.1)	3.4 (0.5)	2.8	3.4	3.9
Disease prevention	3	29	10.8 (1.5)	3.6 (0.5)	3.0	3.7	4.0
Health promotion	4	108	12.5 (2.6)	3.1 (0.7)	2.4	3.2	3.9
Appraising	12	219	36.7 (5.9)	3.1 (0.5)	2.5	3.1	3.7
Healthcare and prevention	9	201	27.0 (4.8)	3.0 (0.5)	2.4	3.0	3.6
Health promotion	3	47	9.8 (1.9)	3.3 (0.6)	2.7	3.5	4.0
Applying	9	196	28.9 (4.2)	3.2 (0.5)	2.7	3.2	3.8
Healthcare	3	16	10.8 (1.5)	3.6 (0.5)	3.0	3.7	4.0
Disease prevention	2	64	5.7 (1.7)	2.9 (0.8)	1.8	2.8	3.8
Health promotion	4	155	12.4 (2.7)	3.1 (0.7)	2.3	3.1	3.8

[a] Scores ranged from 'very difficult' (lowest score) to 'very easy' (highest score).

[b] Number of missing values per competence and domain before multiple imputation.

The 'Mean' is where answers were combined to sum scores. 'Mean per item' indicates the average difficulty of the item on the 4-point scale as described above. A distinction was made

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between those who perceived numerous difficulties and those who perceived few difficulties. Those respondents with the lowest scores on all four competences (scores below the first quartile) were categorized as perceiving numerous difficulties; those with the highest scores were considered to perceive few difficulties (scores above the third quartile; not tabulated). The mean per item for these separate groups is indicated in the last column of table 1. The results shows that among the Dutch interviewees most difficulties were perceived in accessing information on health promotion and the application of information on disease prevention. These difficulties are mainly present for people with scores below the first and second quartile. People with scores in the third quartile perceived more difficulties in accessing information on healthcare. Fewest difficulties were recorded in understanding information on disease prevention and the application of healthcare information [27].

In the same study the relation between health literacy and educational level, income, social status, age, and gender was investigated by using a multiple regression analysis. Figures 8 to 10 show the results per domain (healthcare, disease prevention, and health promotion) and for each competence (accessing, understanding, appraising, and applying). Scores above 0 have a positive correlation, while scores below 0 indicate a negative correlation. Age is given in 10 year intervals (≥25) and gender indicates how well women scored compared to men.

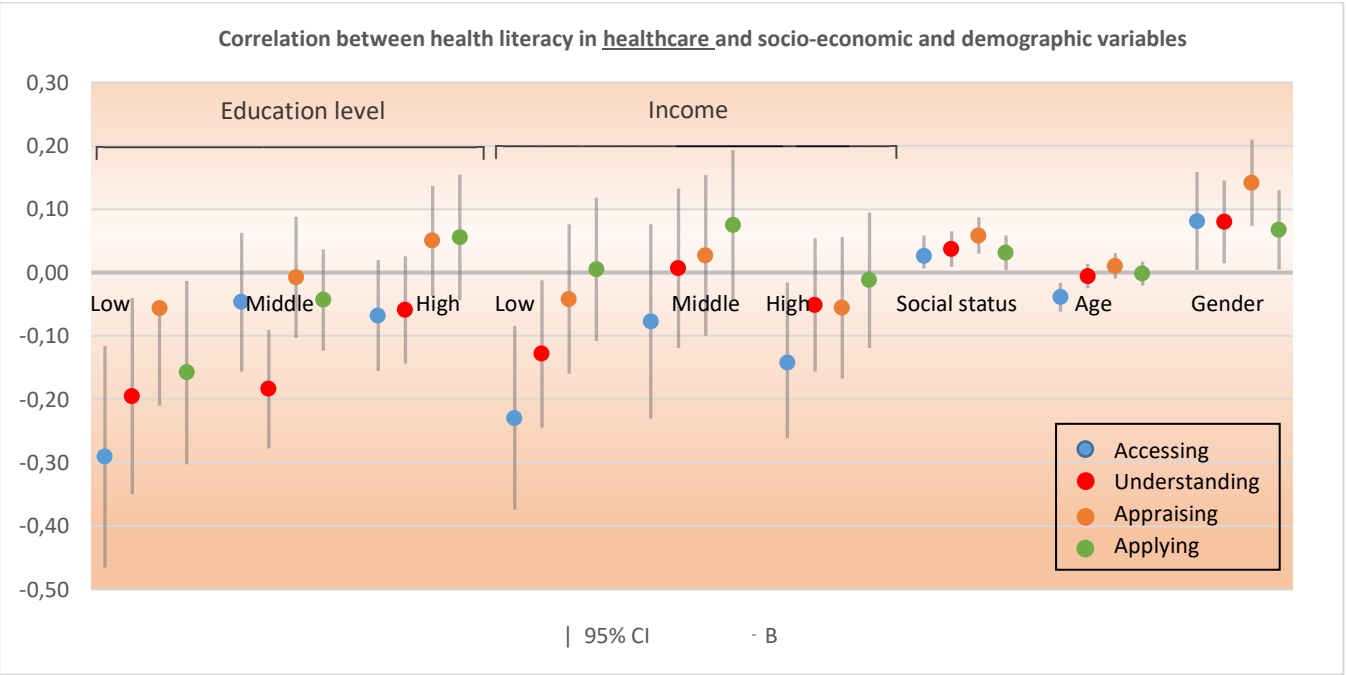

Figure 8. Results from a multiple regression analysis on health literacy levels of Dutch participants of the HLS-EU-Q in the domain of healthcare, comparing different socio-economic and demographic variables [27].

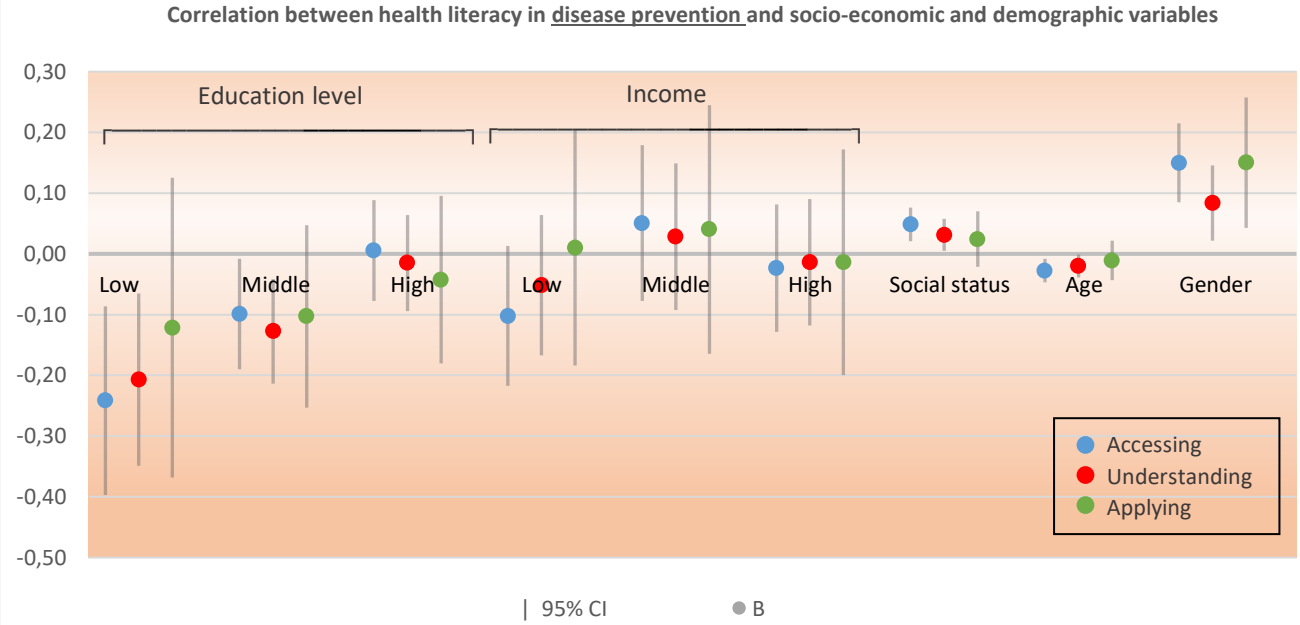

Figure 9. Results from a multiple regression analysis on health literacy levels of Dutch participants of the HLS-EU-Q in the domain of disease prevention, comparing different socio-economic and demographic variables [27].

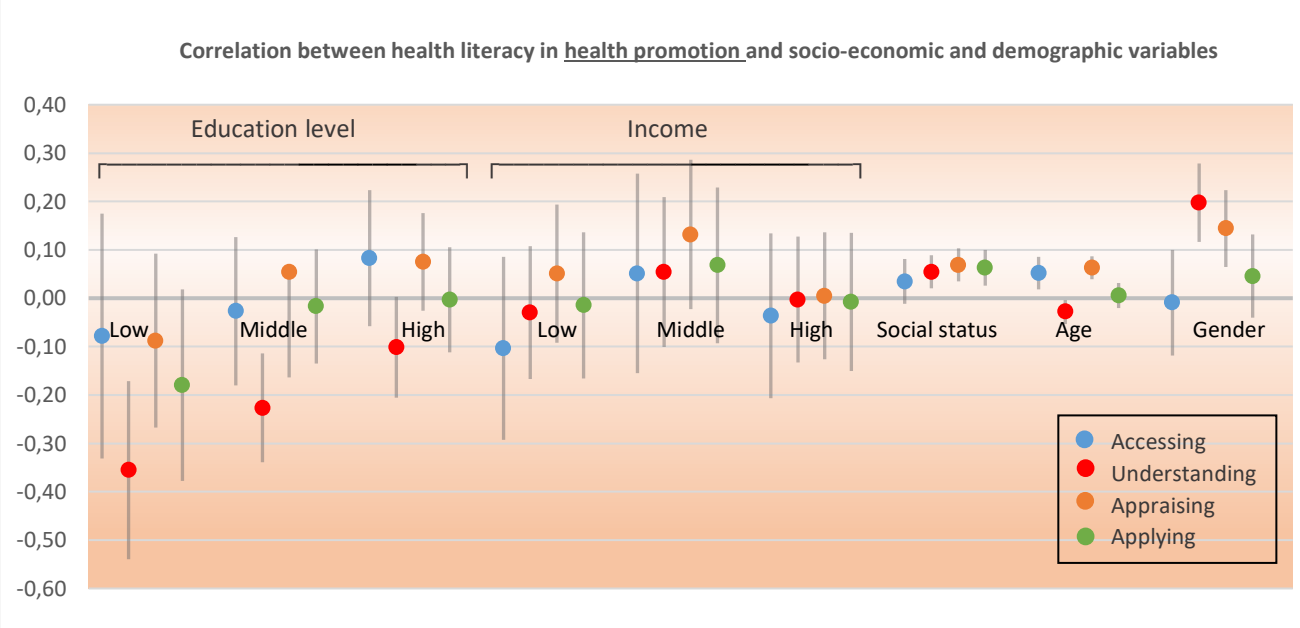

Figure 10. Results from a multiple regression analysis on health literacy levels of Dutch participants of the HLS-EU-Q in the domain of health promotion, comparing different socio-economic and demographic variables [27].

A clear association could be found between health literacy and socio-economic or demographic variables, throughout varying domains and competences. Most difficulties were perceived among people with a low education level, a low income, or a low self-perceived social status. This difference in education and income was higher in the competences accessing and understanding health information. Age seemed to give varying results, where

older individuals have more difficulty in accessing and understanding information on disease prevention, accessing information on healthcare, and understanding information on health promotion. On the other hand, the same age group perceived fewer difficulty in accessing and appraising information on health promotion. It must be stated however that people over the age of 65 were overrepresented, while individuals between the ages of 25 and 39 were underrepresented. Lastly, women seem to have better health literacy scores, especially in healthcare, disease prevention, and understanding and appraising health promotion [27].

In a study from 2021 [28] the self-perceived food literacy (SPFL) and the health promotion literacy (HPL) among employees with a low and medium level of education was investigated. The study included 222 participants. Scoring for SPFL ranged from 0 (never) to 5 (always). Scoring for HPL ranged from 1 (very poorly) to 4 (very well), where options 1 and 2 gave 0 points and options 3 and 4 gave 1 point (with a total of nine questions). In order to interpret mean SPFL levels, mean SPFL was divided into the two categories: low (1.00–3.49) and high (3.50–5.00). HPL was divided into inadequate (0-5), problematic (6-7), and sufficient (8-9). The results of the research showed that 63.1% of the investigated Dutch employees have low self-perceived food literacy and 34.5% have inadequate or problematic health promotion literacy. The mean results per gender, age, education level and BMI are shown in table 2. Women scored higher than men, and older people (aged 41-66) scored higher than younger people (aged 18-40), but education level or BMI did not show any significant correlation. Most difficulties were perceived in examining food labels and stockpiling healthy food. Moreover, the study showed a small positive correlation between food literacy and health promotion literacy.

Table 2. Results from a cross-sectional study on food and health promotion literacy among Dutch employees with a low and medium level of education [28].

	Mean total	Gender (n = 221)		Age (n = 216)		Education (n = 222)		BMI (n = 211)		
		Men	Women	< 40 years	≥ 40 years	Low	Medium	Healthy	Overweight	Obese
1. SPFL (scoring 0-5)	**3.37**	3.26	3.57	3.25	3.47	3.37	3.38	3.36	3.34	3.46
Examining Food Labels	**2.27**	2.16	2.45	2.19	2.34	2.20	2.33	2.17	2.33	2.55
Food Preparation Skills	**3.70**	3.57	3.91	3.61	3.80	3.60	3.78	3.82	3.57	3.65
Healthy Food Stockpiling	**2.97**	2.85	3.21	2.80	3.11	2.94	3.00	2.90	2.98	3.19
Daily Food Planning	**3.01**	2.89	3.23	2.80	3.16	3.06	2.96	2.89	3.15	3.09
Healthy Budgeting	**3.96**	3.85	4.14	3.85	4.04	3.93	3.98	3.94	3.92	4.12
Social and Conscious Eating	**3.85**	3.72	4.04	3.54	4.03	3.88	3.82	3.70	3.93	4.02
Resilience and Resistance	**3.60**	3.52	3.72	3.43	3.70	3.64	3.56	3.60	3.59	3.58
Healthy Snack Styles	**3.14**	3.04	3.33	3.16	3.16	3.11	3.18	3.14	3.06	3.24
2. HPL (scoring 0-4)	**3.11**	3.08	3.15	3.02	3.17	3.12	3.10	3.14	3.06	3.19
Health Promotion	**3.10**	3.10	3.10	3.05	3.14	3.08	3.13	3.16	3.07	3.08
Disease Prevention	**3.12**	3.07	3.20	3.01	3.19	3.16	3.08	3.12	3.05	3.29

When looking at eHealth (digital health literacy) in particular, the Netherlands is doing moderately well. In a study from 2017 individuals were asked to assess their own eHealth skills. Participants answered five questions about their ability to find, understand, evaluate, and apply online health information. 54% of Dutch participants reported to be completely able to perform the tasks as posed in the questions, 40% could do most of the tasks, and 6% estimated their skills to be poor or non-existent [29].

Figures from CBS give a more nuanced representation of eHealth skills by including the varying socio-economic and demographic variables (figure 11) [30]. Individuals with a low education, no employment and those of older age engage far less in online health services, like seeking health information or making appointments. Individuals in the age group of 12-25 also engage less in these activities, but this could be explained by the fact that this age group has less health problems. Women report to use these services slightly more, as well as individuals with a higher income.

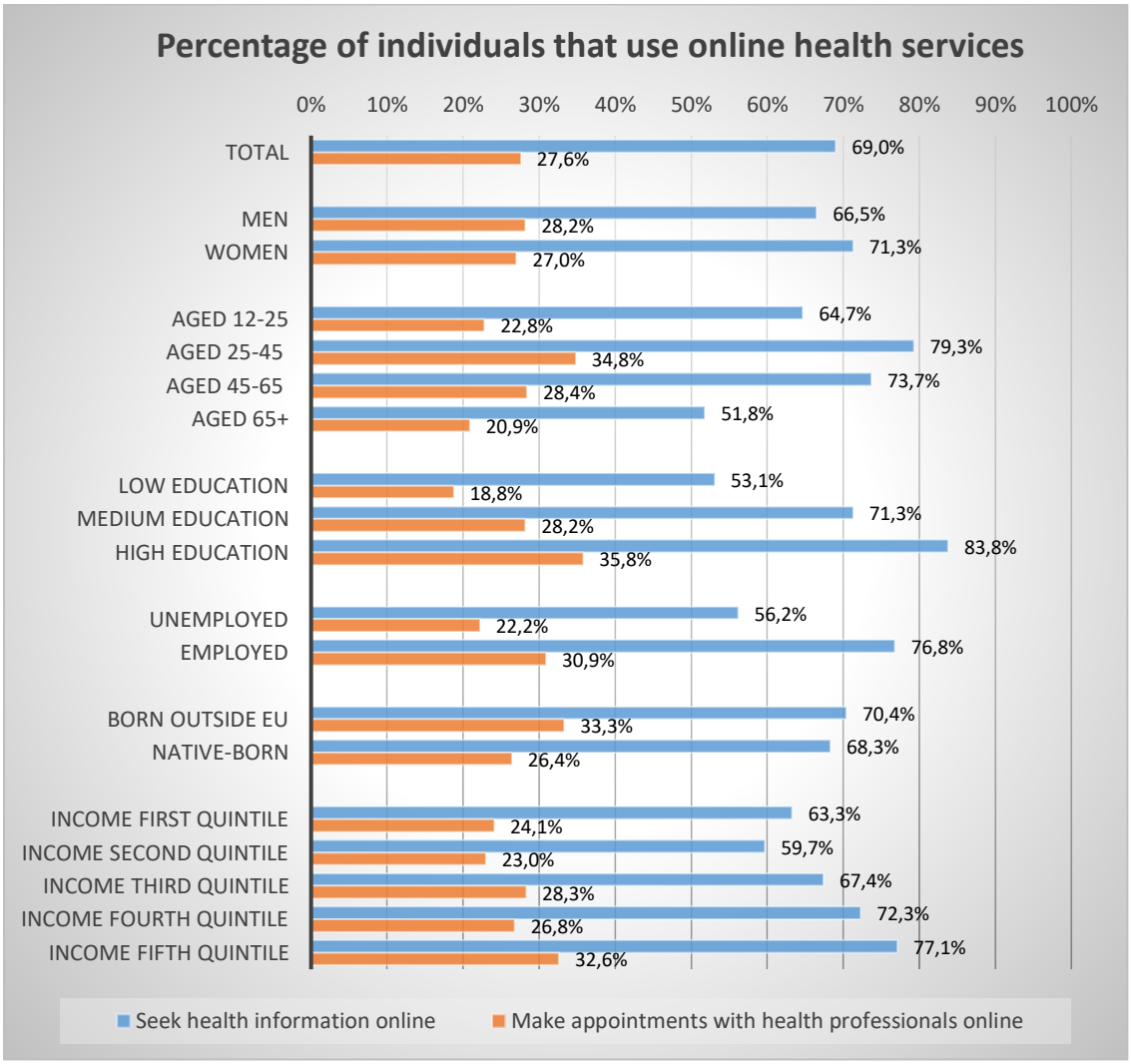

Figure 11. eHealth literacy skills for different socio-economic and demographic variables in 2019 [30].

Data literacy

Information and data literacy rates in the Netherlands are very high (93%), though still lower than Iceland (98%), Norway (98%), Denmark (96%), Ireland (96%), Finland (96%), and Switzerland (94%). Gender and age seem to have little effect on data literacy skills (see figure 12), although figures on data literacy for the age group of 75+ is missing [31].

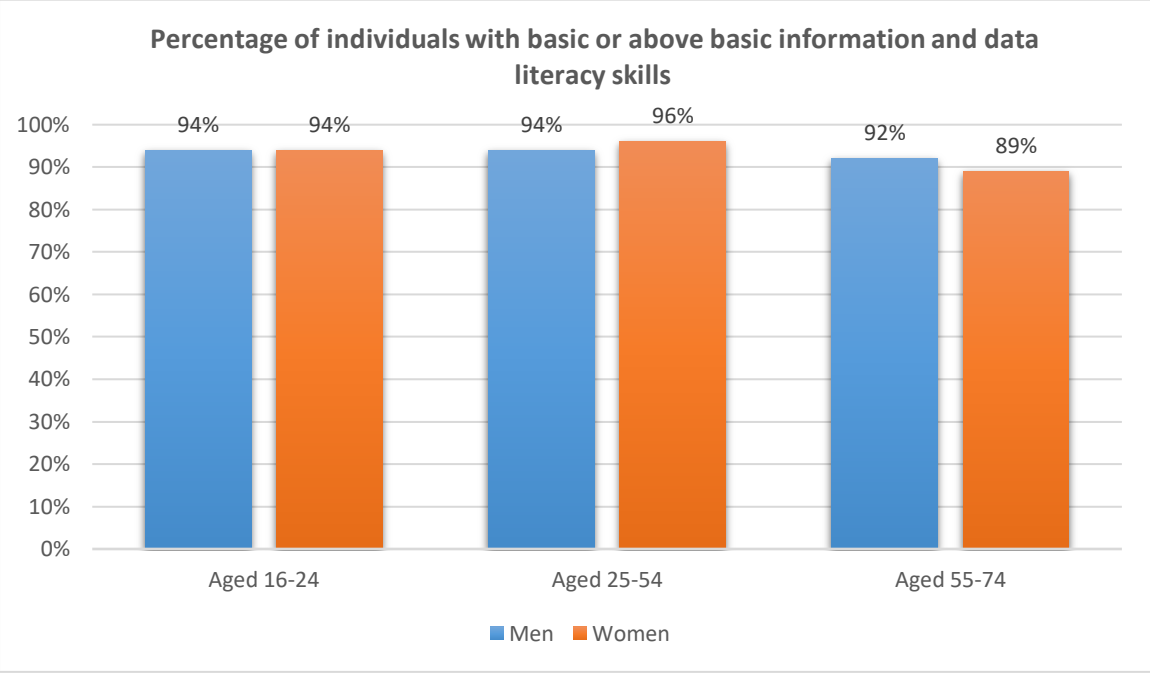

Figure 12. Information and data literacy rates in the Netherlands per age and gender in 2021 [31].

When comparing data literacy figures with various socio-economic factors, some imbalances are visible. Individuals with a low education or low income, immigrants from outside of Europe, and people who are unemployed have lower information and data literacy rates (figure 13). Residential setting appears to have no impact on data literacy and also the difference between medium versus high education, and working people versus students seems to be statistically irrelevant [31, 32].

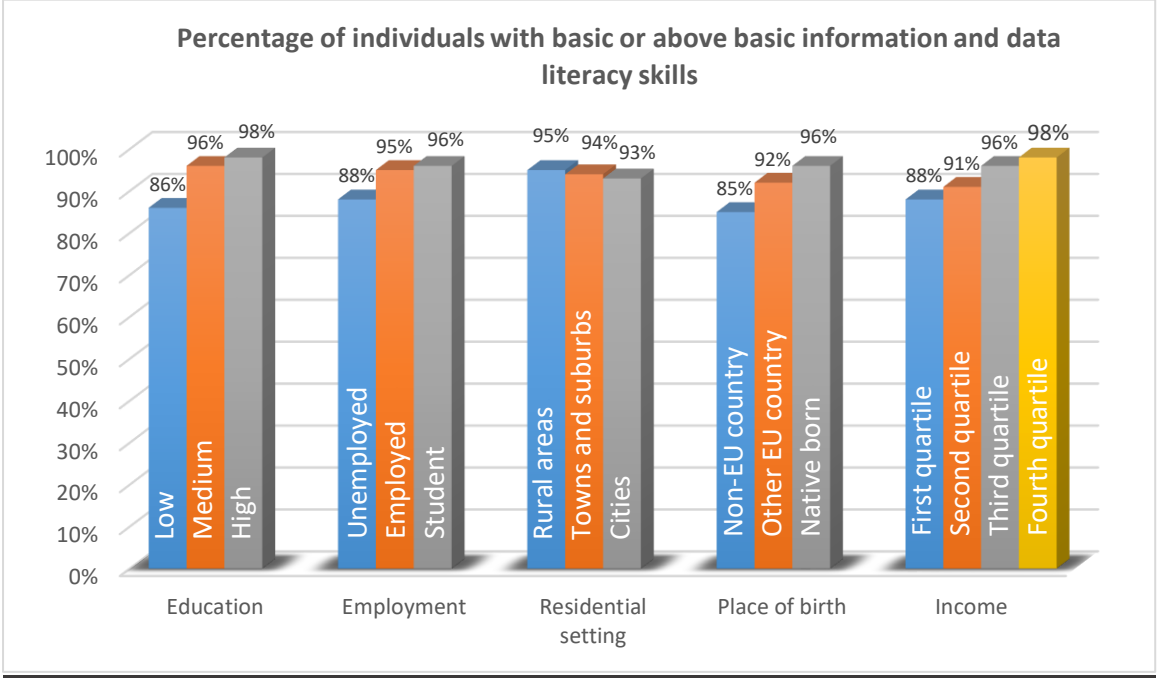

Figure 13. Information and data literacy per socio-economic factor in 2019 (income) [32] and 2021 (education, employment, residential setting, place of birth) [31].

Statistics for digital data use per age group shows a significantly larger gap than information and data literacy in general. Only 34.9% of individuals over the age of 75 uses websites from public authorities to find information, and similar figures can be found for other digital services, like social media, e-mail, e-commerce, and online banking (see table 3) [30]. Age differences are not so prominent in digital data security. In fact, individuals in the youngest age group (16-25 years) seem to be less apt than older individuals (aged 65-75) when it comes to securing personal data online (table 4) [33]. It can be speculated however, that this is more due to carelessness than it is to inability.

Table 3. Percentage of individuals that use online data tools by age group in 2019 [30].

Age	Internet activities by percentage of individuals (2019)				
	Participate in social media	Use E-mail	Find information about goods and services online	Use websites of public authorities	Do online banking
18-25 years	99%	98%	90%	82%	98%
25-35 years	96%	96%	94%	82%	96%
35-45 years	96%	95%	93%	80%	94%
45-55 years	95%	95%	92%	79%	92%
55-65 years	89%	91%	89%	72%	89%
65-75 years	76%	83%	79%	64%	78%
75+ years	40%	56%	48%	35%	47%
Total	**87%**	**89%**	**84%**	**70%**	**84%**

Table 4. Percentage of individuals that secure their personal data online by age group in 2021 [33].

Age	Digital data security by percentage of individuals (2021)			
	Individuals that know cookies can be used to trace movement of people on the internet	Individuals that ever changed the settings in their internet browser to prevent or limit cookies on any of their devices	Individuals that checked that the website where they provided personal data was secure	Individuals that refused allowing the use of personal data for advertising purposes
16-25 years	93%	44%	58%	70%
25-35 years	96%	58%	63%	77%
35-45 years	93%	54%	64%	83%
45-55 years	96%	54%	65%	80%
55-65 years	94%	49%	65%	74%
65-75 years	92%	46%	60%	68%
Total	**94%**	**51%**	**63%**	**76%**

3.2 Statistics on societal and economic impacts

Health and wellbeing

The Central Bureau of Statistics (CBS) has investigated the life-expectancy of the Dutch population, as well as the self-perceived healthy life expectancy of individuals, their physical and mental health, and the presence of chronic conditions. Participants of this survey were regarded to have a healthy life when they considered both their health and their health condition to be either 'good' or 'excellent'. Physical health is defined by restrictions in an individual's hearing, sight or movement. For determining someone's mental health, the Mental Health Inventory (MHI-5) was used. Chronic conditions are considered to be: asthma, heart disease, stroke, high blood pressure, gastrointestinal disorders, diabetes, back problems, joint conditions, migraines, and cancer [34].

The average life expectancy of new-borns born in the Netherlands in 2021 is 81 years, where boys are expected to reach 80 years, and girls 83 years on average. The healthy life expectancy among new-borns, however, is much lower, though mostly equal among men and women, the only exception being that women have a higher change of developing chronic conditions earlier in life (see figure 14). The Dutch life expectancy without any chronic condition is very low compared to the overall life expectancy; 44 years on average, meaning that most people will spend almost half their life with at least one condition that will impact their wellbeing [34].

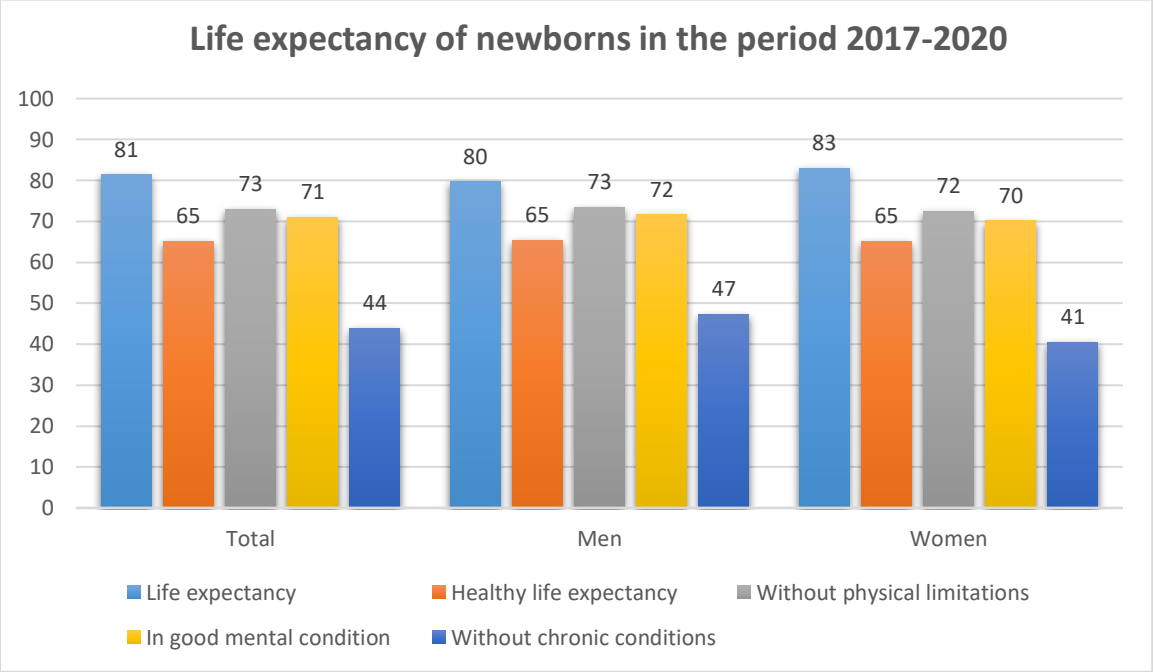

Figure 14. Average life expectancy and average healthy life expectancy in years for new-borns born between 2017 and 2020 per sex https://opendata.cbs.nl/statline).

Education has a clear influence on life expectancy, especially on healthy life expectancy. Figures from CBS of individuals born in the period 2017-2020 show that people with a low education are expected to have 66 years of good physical health and 68 years of good mental health, compared to consecutively 78 and 76 years for highly educated individuals (figure 15) [35].

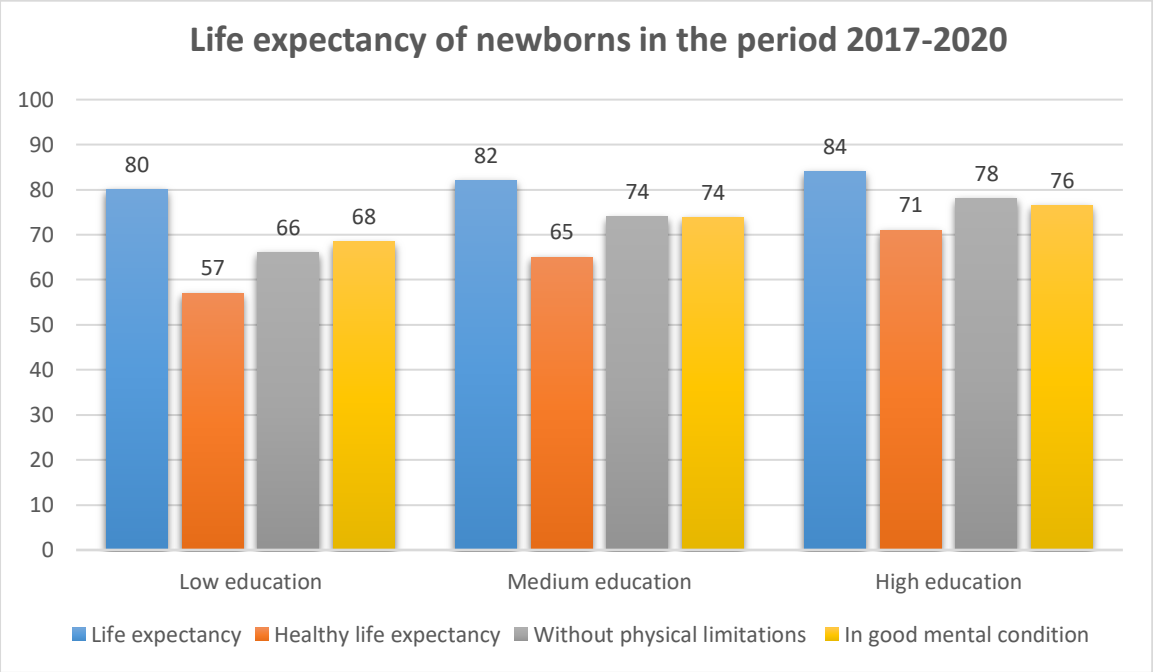

Figure 15. Average life expectancy and average healthy life expectancy in years for new-borns born between 2017 and 2020 per education level [35].

Recent data on life expectancy per income level could not be found, but statistics from the period 2014-2017 show that people with the lowest incomes have a far lower life and healthy life expectancy in all the domains (figure 16). On average, individuals with an income in the first quintile (20% of Dutch citizens) will only spend 38 years of their life without any chronic disease [36].

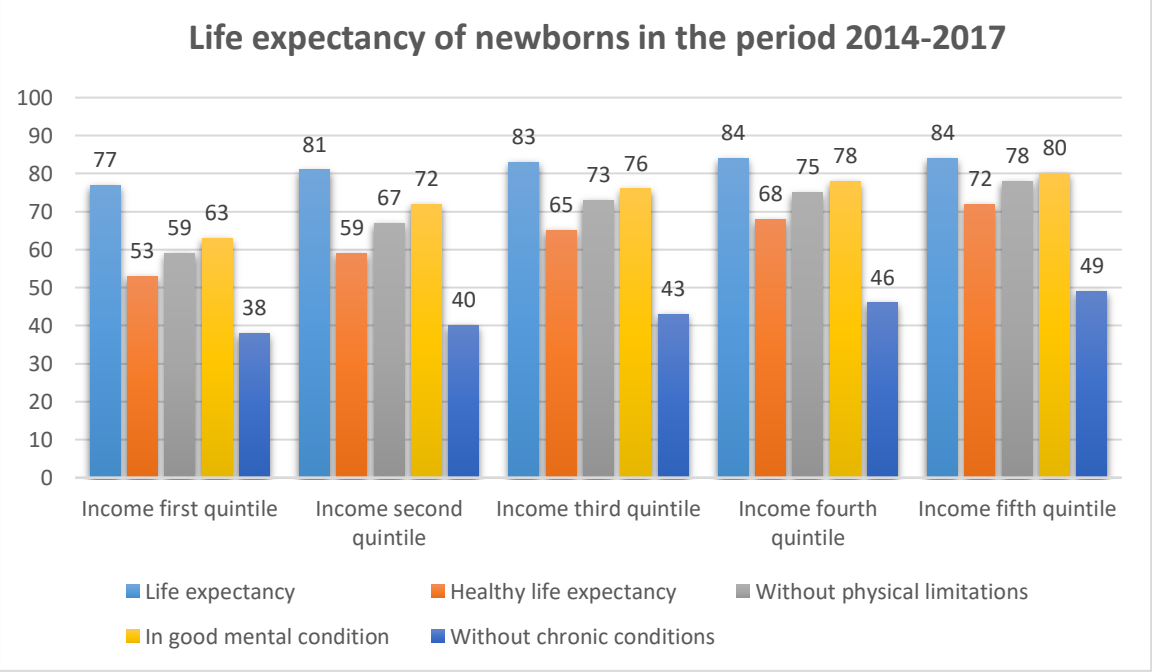

Figure 16. Average life expectancy and average healthy life expectancy in years for new-borns per income level [36].

The negative correlation between education/income and (healthy) life expectancy seems to be (partially) linked to lifestyle and nutrition. Individuals with a low income or low education are far more likely to smoke, drink excessively and be overweight (see figure 17). Excessive drinking is defined as drinking more than 21 glasses a week for men or more than 14 for women. Education and income also show a correlation with the amount of exercise and the consumption of vegetables [37]. According to the Dutch movement guidelines set up in 2017, people over 18 should get at least 2.5 hours of moderately intense exercise per week plus muscles- and bone strengthening activities twice a week [38]. For a healthy lifestyle the recommended amount of vegetables is 250 grams per day [39]. The amount of people that gets enough exercise and eats enough vegetables gets higher when education and income levels rise as well, although these numbers are poor for all groups in general, with 52% of people not getting enough exercise and 80% of people not eating enough vegetables. Noteworthy is that the vegetable consumption and the BMI of individuals with an income in the first quintile is similar to that of individuals in the fifth quintile. This may be due to food pricing. Statistics on lifestyle compared to migration background are mixed. Non-native inhabitants tend to consume less alcohol and eat more vegetables, but they also smoke more, exercise less, and have a higher chance of being overweight [37].

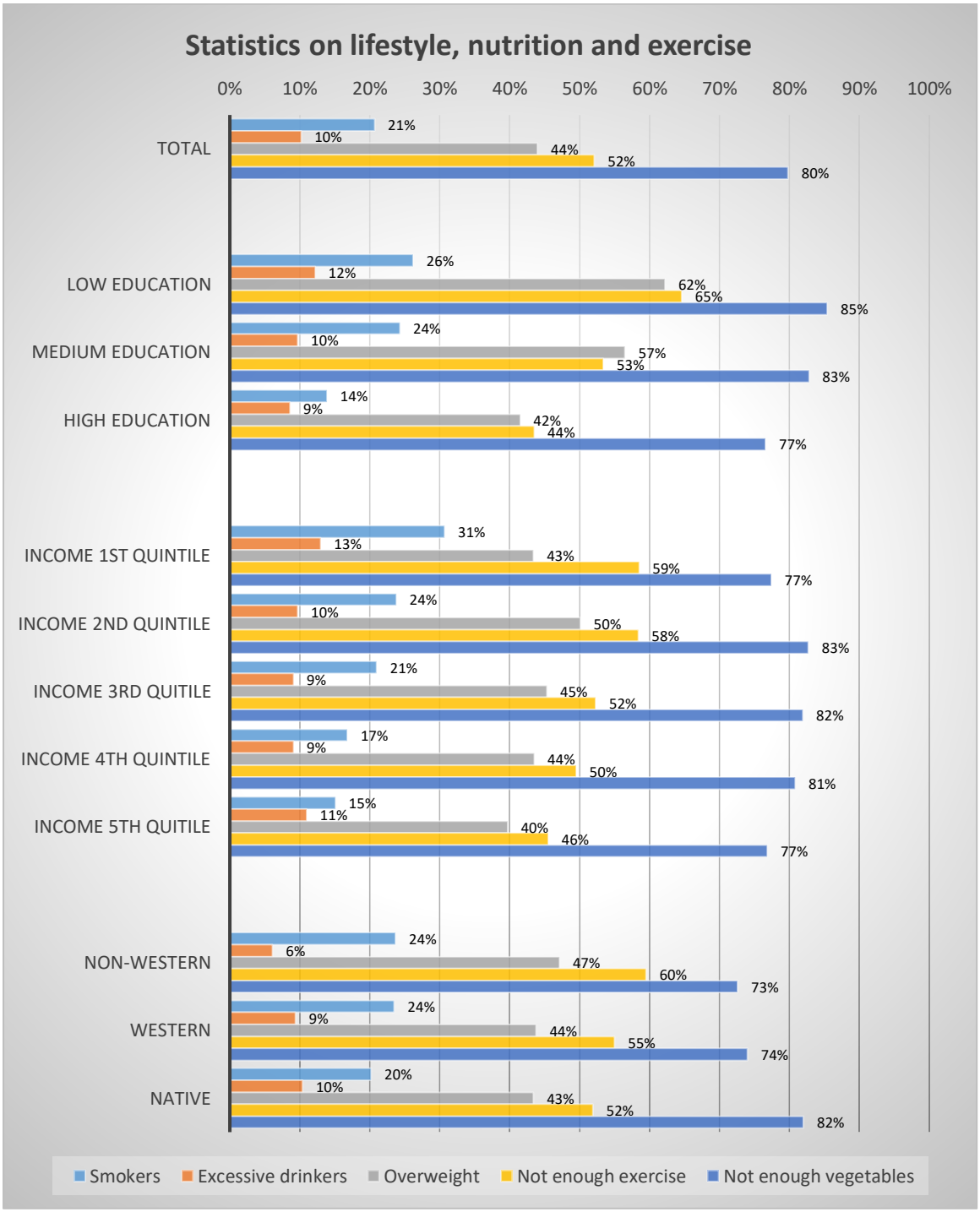

Figure 17. Statistics on lifestyle, nutrition and exercise in 2018/2019 per socio-economic variable [37].

Participation in society

The Dutch Health Monitor from 2020 shows that 46,6% of Dutch individuals have feelings of loneliness, of which 11% indicate to be severely lonely. These numbers are higher than the Health Monitor from 2016 (respectively 43% and 10%, not tabulated), indicating a potential link with the COVID-19 pandemic lock-down. Nevertheless, loneliness levels in the

Netherlands are very high. Moreover, they seem to increase with age, especially for individuals aged 75 and above (see figure 18). Other mental issues like anxiety, stress, insomnia, and depressive symptoms are noticeably lower for older people. This may be, because these mental issues are often caused or reinforced by a person's work environment, while loneliness is caused or reinforced by the loss of social contacts, activities, and work [40].

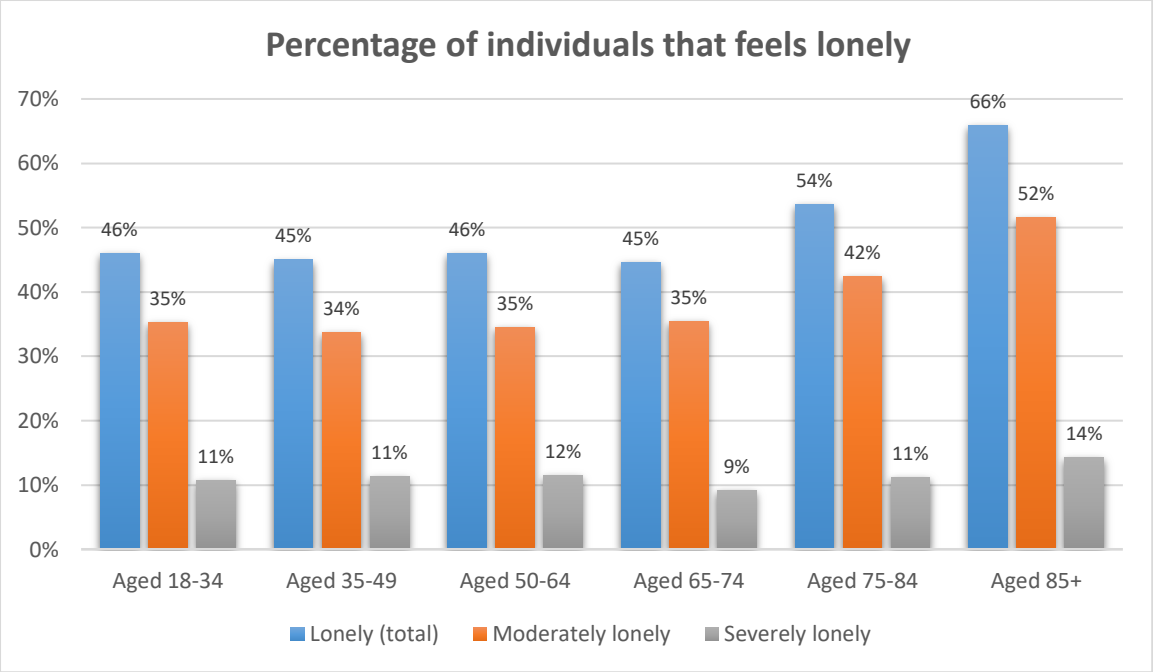

Figure 18. Percentage of individuals that feel lonely per age group [40].

The participation in society among older individuals, mainly those 75 years and above, is much lower than in other age groups, corresponding to the rise of loneliness. This is mainly visible in contact with friends, participation in activities, informal help, and volunteering (figure 19). Unfortunately these are also the areas in which digital, health, or data skills could be acquired or aided in, reinforcing the disadvantaged state of the older population [41].

For socio-economic factors there is no such correlation. People with a low education or a migration background typically have more contact with friends, family, and neighbours, although they volunteer less and offer less informal help (figure 20). Figures on participation in society per income level are not available [41].

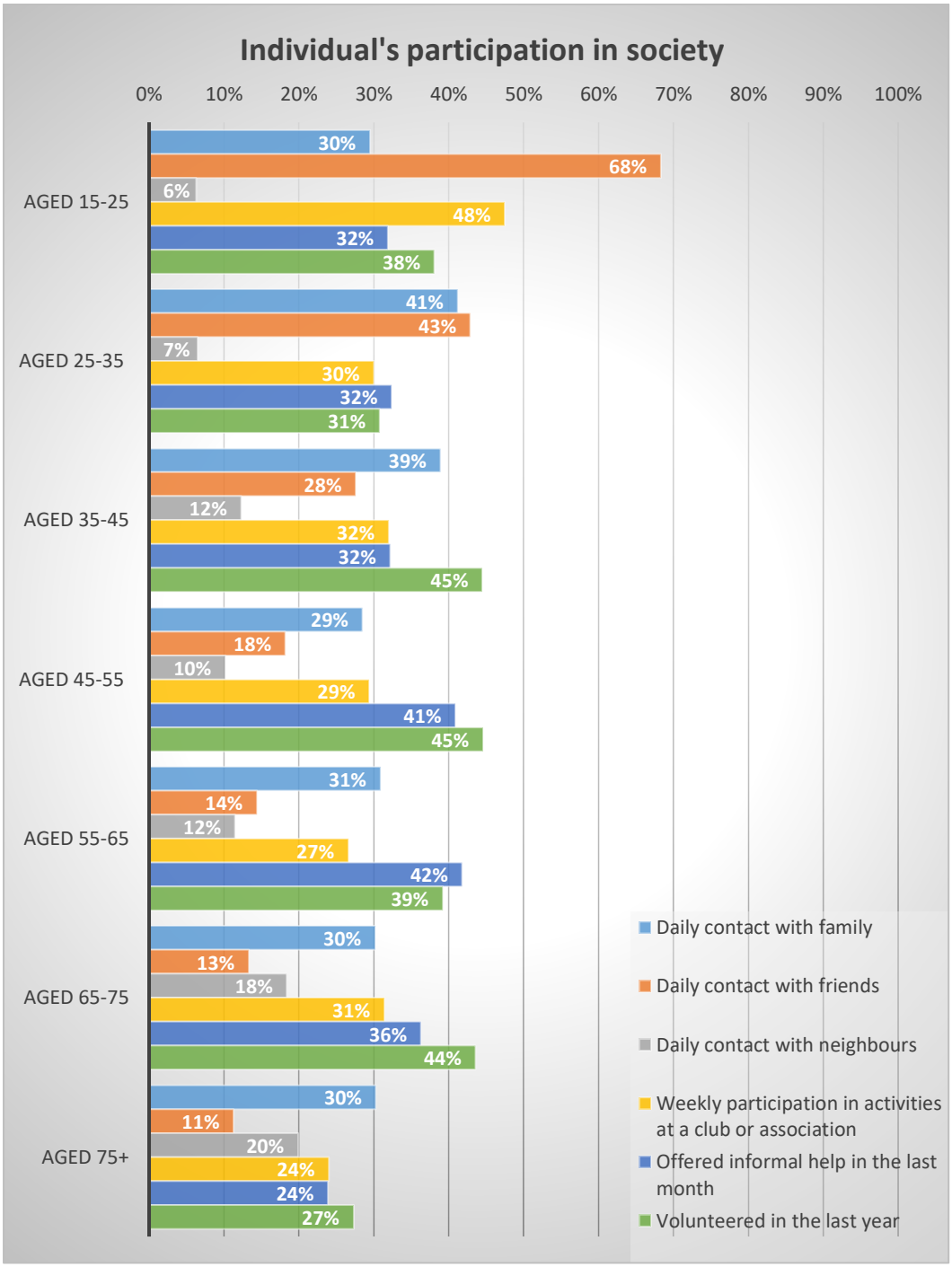

Figure 19. Participation in society per age group in 2021 [41].

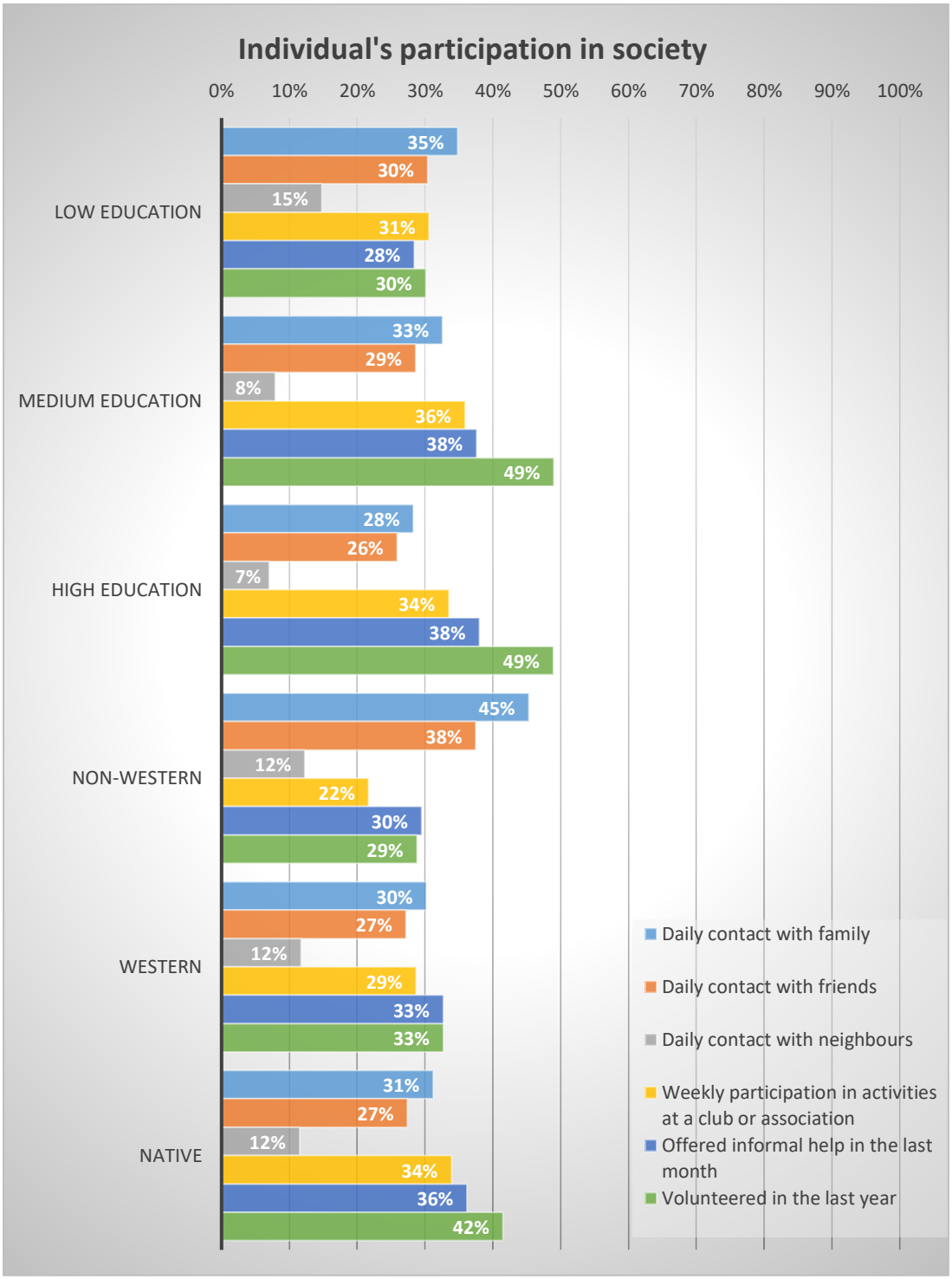

Figure 20. Participation in society per socio-economic status in 2021 [41].

Employment

Employment figures for the second quartile of 2022 show a correlation between employment rate and education level among all age groups (see figure 21). Employment rates between the ages of 25 and 55 are mostly stable, but consistently lower for individuals with a lower education. Between the ages of 55 and 65 years, the percentage of employed individuals drops among all education levels, but the largest decline is visible in the highly educated group. Not surprisingly, the amount of people that remain active in the workforce after the age of 65 is very low, but still higher among highly educated individuals [42].

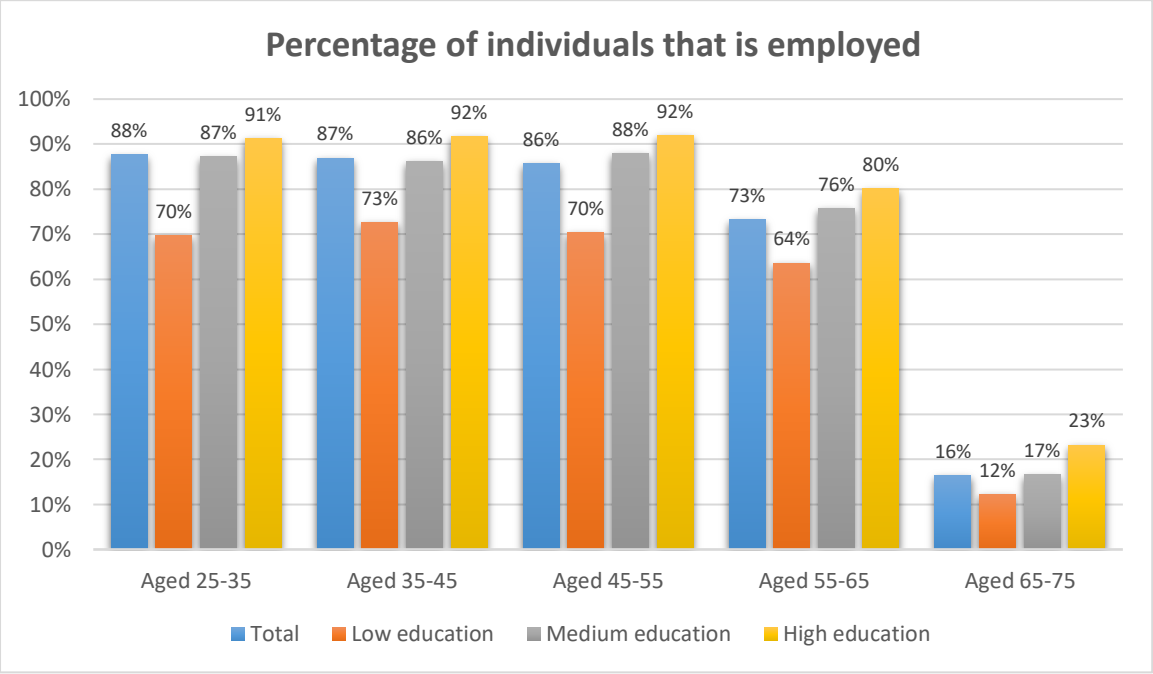

Figure 21. Employment rates per age group and education level in the second quartile of 2022 [42].

Employment rates for individuals with a non-Western migration background are much lower than those for native Dutch people and individuals born in another Western country (figure 22). Notable is the fact that among non-Western immigrants the employment rate tends to decline with age consistently. However, among individuals aged 65 to 75 the employment rate of non-Western immigrants is relatively high [43]. This may be due to the fact that statistically more individuals with a non-Western migration background have a chance of living in poverty (9,5% versus 1,3% of native Dutch people [44]), forcing them to keep working after retirement age.

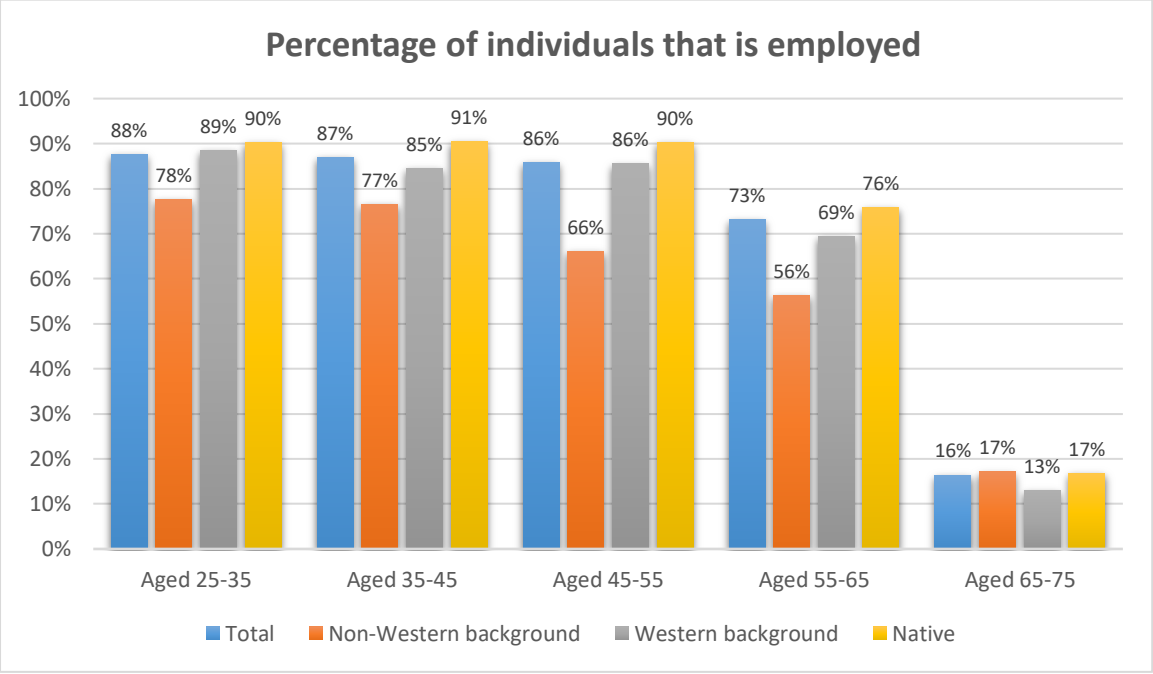

Figure 22. Employment rates per age group and migration background in the second quartile of 2022 [43].

Illiteracy and low literacy

General literacy rates in the Netherlands are very high; 99% of individuals aged 15 and over are considered to be literate [45]. That doesn't mean however that all Dutch people can read and write without problems, or understand the content of a text. According to the *Feiten & Cijfers* 2018 [46], 18% of Dutch citizens, over 2,5 million people in total, have low literacy skills. Low literacy is defined as having difficulty with reading, writing and/or calculating and is determined by the PIAAC test (programme for the International Assessment of Adult Competencies). In language terms, the reading and writing level of low literates corresponds to level A2 or lower.

Studies also indicate that the amount of low literates in the Netherlands is growing and the divide between individuals with a high and low literacy is increasing. There are several reasons for this: the increased aging of the population, the growing number of immigrants, and the fact that more young people leave school with substandard basic-skill levels. Education level is the strongest factor in literacy rates; among individuals with only a primary education 42,3% are low literate, versus 2,5% of people with a University degree. Other socio-demographic factors also play a role in literacy skill level (see figure 23) [46].

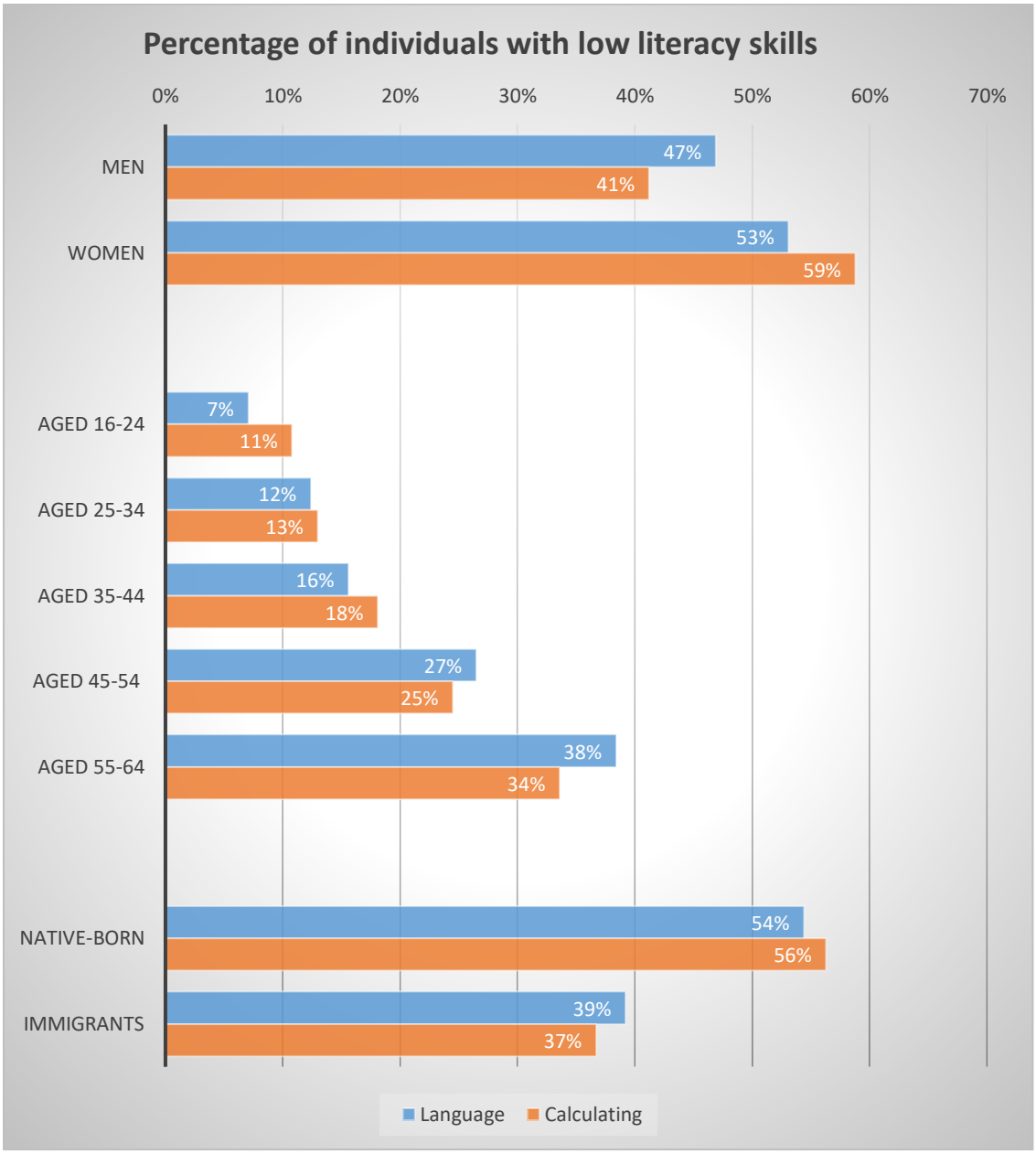

Figure 23. Percentage of individuals aged 16 to 65 with low literacy per sex, age and migration status [46].

Literacy rates tend to decline with age. Research has shown that cognitive abilities generally drop one education level over the course of one's life [47]. Because on average the education level of older generations is lower, this effect impacts the literacy rates of older people more. We also see that women have lower literacy rates than men. The education level of women in older generations might play a large role in this, though figures for literacy rates for sex combined with age are missing. Remarkably, the percentage of low literates is higher among native Dutch people than it is among first generation immigrants, indicating this problem is not necessarily linked to a language or culture barrier.

In a literature study on the effects of low literacy on overall health [48], researchers found a negative correlation between literacy and physical, mental and perceived health, hospital admissions, and death. The study also shows that low literacy can be associated with specific

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health conditions, among which asthma / chronic bronchitis, cancer, cardiovascular disease, kidney-, liver-, thyroid, and biliary gland problems, joint pain, diabetes, epilepsy, psychological issues, and dementia. Furthermore, low literates tend to use more healthcare services, but less preventive healthcare services, and they are less self-reliant and less adherent to a healthy lifestyle.

Health mis- and disinformation

The spread of disinformation on health topics is another factor that may impact people's understanding and appraising of online health information. According to the World Health Organization [49] incorrect interpretations of health information negatively influence mental health, increase vaccine hesitance, and delay the provision of healthcare. As could be seen during the COVID-19 pandemic, the spread of mis- and disinformation[1] tends to intensify during outbreaks and disasters. The most important facilitator in this is social media. The ease of access, speed and large range of platforms like Twitter, Facebook, Youtube, and Instagram can increase the negative effect that disinformation has on population health, especially when it leads to an aversion against vaccination programmes. This effect was clearly visible when the COVID-19 vaccination programme was implemented, although it is important to mention that social media can also have the reversed effect and lead to compliance to health recommendations, as well as contribute to improved knowledge and awareness, and positive health behaviours.

In a systematic review on the presence of infodemics[2], fake news, and mis- and disinformation in social media, researchers found that between 0,2% and 28,8% of posts contained health disinformation. They also discovered that in posts specifically about vaccines on average 32% contained disinformation and around 20% to 30% of Youtube videos on emerging infectious diseases (like COVID-19) contained disinformation. Furthermore, the researchers found out that the topics 'vaccines administration', 'infectious diseases', and 'chronic noncommunicable diseases' are highly prevalent on social media [50].

3.3 Intersectional analysis

In summary it can be stated that digital literacy rates among Dutch citizens is very high; the Netherlands has almost met the European target of 80% of basic digital proficiency. However, a disproportionate amount of digital illiterates are present among older people and people with a lower education or income. The age gap in digital literacy could be linked to the fact that a large majority of people need a working internet connection and decent computer skills

[1] Misinformation being deliberately intended to deceive people, while disinformation also includes misleading, manipulated or biased information, and propaganda.
[2] "Too much information, including false or misleading information in digital and physical environments during a disease outbreak" [49].

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for work or school activities, but after the retirement age of 67 there is less incentive to keep up with the rapidly changing digital world, resulting in a large group of people being left out when more and more public systems, including healthcare, are digitalised. Socio-economic factors like low education and low income are likely linked and include immigrants from outside of Europe and people who are unemployed. It is evident that these individuals are disadvantaged when it comes to learning digital skills. Therefore, educational methods related to digital proficiency need to be made equally available to the entire population, so that the divisions in social status and age can be erased.

According to the HLS-EU conducted in 2011 general health literacy levels in the Netherlands were deemed to be 'sufficient' (scoring 37.06 out of 50) [26]. Nevertheless, there are socio-economic and demographic variables that impact Dutch health literacy rates. Low education and low income have a negative effect on health literacy, especially in regard to accessing and understanding health information. These findings correspond to the digital literacy rates, where low education and low income were also found to have a significant negative correlation. Age on the other hand, gave varying results per domain, while gender seems to have a much larger impact on health literacy than it does on digital literacy. This may be explained by the fact that our socio-cultural environment drives women to be much more invested in their looks and their health [51], making them more motivated to actively learn health literacy skills, especially concerning health promotion, disease prevention and food literacy. These are also the areas that have a positive correlation with higher age groups (41 years and above). The reason for this is not entirely clear, although it could be related to the declining adherence to a healthy lifestyle among younger generations [52]. Most difficulties in health literacy were perceived in accessing information on health promotion and applying information on disease prevention. Since there is proven to be a correlation between food literacy and health promotion literacy (see chapter 3.1), the improvement of health literacy should incorporate food literacy skills and potentially lifestyle literacy skills as well. Food literacy rates in the Netherlands are far below adequate, especially among younger people (<40 years of age). This is visible in our current population's health condition, where 44% of people is overweight and 80% of individuals do not consume enough vegetables.

In addition, special attention needs to be paid to combatting low literacy in general. Low literacy has proven be directly linked to lower health conditions and is mostly prevalent among lowly educated people (see chapter 3.2). People with low literacy skills have more difficulty understanding information about health and healthcare and therefore form a vulnerable group. In order to improve their situation, participation to preventive health programmes and adherence to a healthy lifestyle should be stimulated, and self-management support for low literates with a chronic condition should be facilitated [48].

Unfortunately there is little information available on data literacy in the Netherlands. The available figures indicate however that information and data literacy rates among Dutch citizens are very high. Like in both digital and health literacy, a negative correlation exists between data literacy and social-economic factors, including education level, income, employment, and immigration status, though data literacy rates among these groups remain

well above 80% (the European standard for digital literacy). Digital data literacy tends to drop with age, which is unsurprising given the digital literacy rates. Furthermore, it can be stated that a relatively large amount of false and misleading health information is being spread online and that this is likely to influence people's digital health data appraising abilities, but specific figures on which people are more susceptible to this were not found.

The statistical data gathered in this desk research show that, even though on average a very high number of Dutch citizens have adequate digital, health and data literacy skills, there still remains a fairly large disparity between different age groups, education levels, employment status, and income. Since employment rate has proven to be directly linked to education and migration background (see chapter 3.2), already disadvantaged groups get trapped in their low socio-economic status, impacting their own health and wellbeing, and that of their children as well. It is important to note that the methodology that Eurostat and national statistical bureaus such as CBS use is not without critique [53]. Nevertheless, the data makes clear that an imbalance exists within the Dutch population. Digital health information needs to be made more accessible and more comprehensible for disadvantaged people, i.e. those with a low education or income, individuals of higher age, and people that have a culture- or language barrier. More focus should be put on health promotion and disease prevention, including nutrition and lifestyle, since these are the areas that need the most improvement and at the same time are the most difficult for people to access and understand, especially for the disadvantaged groups mentioned above.

4. Reported and identified gaps, needs and demands

4.1 Identified gaps

Desk research

From the desk research can be concluded that older age, low education, low income, and a non-Western migration background negatively influence digital, health and data literacy rates in the Netherlands (see chapter 3).

In older generations the main problem is low digital proficiency. This problem is reinforced by the decreasing participation in society among older people; as age increases people are less likely to work, visit friends, do social activities, or volunteer, and are therefore less exposed to digital systems, like for instance in the work environment, social media, or sport and leisure accommodations.

The desk research has also shown that both people with a low education and individuals with a non-Western migration background are less likely to be employed and more likely to have a low income and a low social status. Although these aspects also negatively impact digital and data skills, the main problem is the overall lower health literacy. This group of people is

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especially vulnerable since they are more likely to make unhealthy life choices and suffer from chronic conditions earlier in life. In addition, people with a low education have a higher chance of being low literate, which negatively impacts all three literacies.

Interviews

From the interviews can be concluded that age does not have a significant impact on health literacy skills, but the amount of experience a person has with the medical system does. This experience is likely to grow with age, while younger individuals often never sought medical attention before and are therefore quite clueless as to how the healthcare system works, which in the Netherlands is rather complicated. Additionally, the study or profession a person does has a very large influence on their health literacy, especially when someone works in the medical sector.

When looking at eHealth skills in particular, younger individuals more often make use of applications or webservices related to health, like fitness- or health tracking apps. Even though they do not have (much) experience with searching for health information online, they are often able to find reliable health information and make adequate health decisions by using their digital skills. Some individuals from the age group of 51 and above were more hesitant when it comes to looking for health information online, but they usually have more knowledge as to which official websites or medical portals are available to them.

Information on where personal medical data is stored, who has access to it, and how to view its content is mostly unknown to the participants, although many can make well educated guesses on the topic, especially those with a higher education. For some individuals retrieving medical data can be more challenging, because different organisations may keep their own file and tracking down this data is unnecessarily complicated.

Medical documents are generally seen as difficult to understand for a wider range of people, but dosing instructions for medicines are regarded as very understandable. One of the interviewees (high education, 50+) does indicate however that medicine packaging does not clearly indicate what the medicine is for. Packaging usually includes the name of the drug and the brand, but not what it is meant to treat. This can have serious consequences for people that take several kinds of medication and accidentally mix them up.

In general the Dutch healthcare system is seen as mostly equally accessible. In fact one of the interviewees has heard that access to top clinical care in the Netherlands is regarded as one of the best in the world. However, most participants agree that this does not mean that all people have equal access to medical care in general. Individuals with a language or culture barrier may experience problems finding their way through the Dutch healthcare system. Also physical accessibility is not optimal. Furthermore, due to the high own risk policy and limited compensation in the basic care package, specialistic care can be too expensive to afford for people with the lowest incomes.

Professionals indicate that policy is often unsatisfactory and there are not enough financing options for the use of digital tools in healthcare or the financing options are unsustainable. There are for instance several projects in which new digital or technological innovations are tested and participants receive adequate compensation to use these tools. After the end of the test phase, however, financing is no longer available. Furthermore, the requirements to qualify for financial compensation for existing tools are unreasonably strict. People with a low education or a migratory background often do not know which technologies are available to them and they lack the financial means to personally buy devices or licenses.

4.2 Identified needs and demands target groups

Overall the topics of accessing and understanding health information, accessing information on health promotion and applying information on disease prevention are the areas that people struggle with the most. Difficulties with health promotion and disease prevention are deeply rooted in our society and include nutrition and lifestyle choices. In 2018 the Dutch government has started the 'National Prevention Agreement' [54], with the intention to drastically reduce smoking, excessive drinking and overweight by 2040. In a progress report from 2020 [55], however, was concluded that many of the ambitions, especially those on alcohol consumption and overweight, are considered to be not feasible with the current measures. Also the effects of the corona pandemic could potentially slow down previous progress. With unhealthy options lurking around every corner, people need more easily accessible healthy options, as well as clear and easy to understand information on good practice and the risks of unhealthy lifestyles.

Accessing and understanding health information is mainly caused by the structure of the healthcare system in the Netherlands. Even though the Dutch medical system can theoretically be accessed by everyone, for many it is too complicated to understand, especially for people with a lower educational background. One of the interviewees, who is working as a nurse in a home for formerly homeless people, indicated that many of her patients have refused to give permission for their medical data to be shared between healthcare providers. These people are often lowly educated and do not fully understand what this data sharing means for them. As a result they often have to re-explain their medical history, which can lead to misunderstandings, and it prevents healthcare providers to share valuable health information about these patients. Additionally, official websites and medical portals are unknown to people with no or less experience in the medical system. In HLS-EU-Q terms it can be stated that people with a low educational background have difficulty understanding healthcare and accessing health information. Both lowly educated people and individuals with little experience in the medical system have difficulty accessing healthcare. Several interviewees have indicated that it would help to have a specific website or platform where they can find a clear and easy to understand overview of the medical system, including links to official and reliable websites. Even the individuals that do not feel the need to use an online learning platform indicated that they would find it useful to be able to access such a webpage. This environment should also include information on where to find your personal

medical file and why sharing your medical history with other healthcare professionals might be important.

Many interviewees were not personally interested in the use of an online learning platform to improve their digital health and data literacy at this moment, but most saw the creation of one as a positive and indicated they would use it if they ever felt they needed to in the future. The type of information that people prefer varies from person to person, but most often a combination of methods is preferred, like text and images, or videos and exercises.

Two participants, who work as policy makers for the government, indicated that there already exist several platforms offering digital and/or health literacy training material, but these do not seem to meet the needs of the target groups, they do not reach the target groups, or they require too much own initiative to access. It is therefore necessary that the TRIO solution clearly defines which target groups it is meant for, and that it meets the needs and demands of these target groups. In addition, the e-learning course needs to be known and easily accessible. For older people it is important to also include their network to help them navigate the digital environment.

4.3 Suggested learning needs target groups

For older people the focus should be on improving their eHealth skills. This includes how to find health information online, how to tell if a website is reliable, how to access their personal medical data, which digital devices are available and how to use them.

For people with a overall low socio-economic status the main focus should be on improving their understanding on health promotion and disease prevention; how to find online nutrional and lifestyle advice, how to implement healthy choices in daily life, and which digital tools are available to track their health.

For people with a low education and/or a migratory background information on the Dutch medical system needs to be made available in clear and understandable language, as well as which digital tools and devices are available and how to get them, and which websites to go to when in need of more information. More clarity is needed on the topic of personal medical data; where it is stored, how to access it, who it is shared with, and what this means for the patients themselves.

Institutions need to be made aware about the growing problem of low literacy and how this affects these people in regard to accessing the medical system and finding (online) health information. Educational programs to improve literacy, digital literacy, and health literacy need to be clearly communicated and promoted.

5. Examples of good practices and educational training offers

https://www.allemaal-digitaal.nl/
Allemaal Digitaal (everyone digital) collects second-hand laptops, tablets, smartphones, desktops and monitors from industries and donates them to Dutch citizens that cannot afford digital devices. Businesses can contact the website if they have something to donate.

https://www.digisterker.nl/
Foundation Digisterker (Digi stronger) offers educational programmes for both young people and adults to increase their knowledge and understanding of the digital data-society and digital competences. Their programmes are made from a social perspective and aim to teach people the independence, safety, and confidence to work with digital services of social organisations, in particular those from the government.

https://digitaalsamenleven.nl/
Alliantie Digitaal Samenleven (alliance living together digitally) is an initiative of the Ministry of Internal Affairs and Kingdom Relations, the Number 5 Foundation and VodafoneZiggo to make the Dutch society more digitally inclusive by using a multiyear action- and learning programme. Their website offers information and news to increase awareness on the topic, and links to projects and events.

https://www.digivaardigindezorg.nl/
The coalition Digivaardig in de zorg (digitally proficient in healthcare) is committed to improve the digital skills in the healthcare sector. They offer a platform with self-tests and learning material for healthcare professionals to improve their knowledge on digital technologies in their sector.

https://digivitaler.nl/
DigiVitaler is part of Digisterker (see above) and offers learning programmes in digital healthcare on topics like medical websites, health applications, online health portals, and video consulting.

https://helpdeskdigitalezorg.nl/
Helpdesk digitale zorg (helpdesk digital care) offers help to people with any digital questions that may arise during treatment or contact with a physician. People can either call the helpline, send an e-mail, or find manuals and instruction video's online.

https://oefenen.nl
Oefenen.nl (practicing.nl) is an online platform where people can practice and improve their language, calculating, computer, and internet skills, but also learn about things like how to have a healthy lifestyle, make sustainable choices, and make sensible financial decisions.

https://stamtafel.nl/
Stamtafel is an online social healthcare network, where people can come in contact with others, share messages and find information in the areas of health, independent living, informal care, and more. The idea behind this new form of electronic dossier is that it gives

Co-funded by the European Union

the client more insight into their own situation, empowering them to make better healthcare-related choices for themselves.

https://www.steffie.nl/
Steffie is a cartoon personage that explains complicated topics in an easy to understand way. The range of topics is very diverse and includes visiting the GP, using DigiD (the Dutch digital identification system), video calling, using a mobile phone, getting health insurance, and much more. Even though the style may seem childish at times, Steffie is targeted to adults of all ages and is a very popular platform, with more than a million visitors per year.

https://www.taalhuis.nl/
Taalhuis (language house) is a partnership in which municipalities, libraries, well-being organisations, and language providers work together to combat low literacy. Taalhuis has many physical locations in the Netherlands, mainly in public libraries, where people can go for information, read books for low literates, use computers, and find learning material. Taalhuis also offers courses and activities, like a digital skills course and a language café, and they help people get in contact with organisations that can help them with their specific language problems.

https://volgjezorg.nl/
Through Volgjezorg (follow your healthcare) patients can arrange permission for the exchange of their medical data with other healthcare professionals. People can also follow their medical history; which data is being shared, which healthcare providers viewed this data and when this happened.

6. Suggested input for TRIO training and education

Navigating the internet

- How to use web browsers and search engines
- How to know if a website contains accurate and trustworthy information
- How to view your own online medical file (if applicable)

Health promotion and disease prevention

- Nutrition, sport, and lifestyle (good practices and why this is important)
- Which digital health tools you can use to improve your health
- Health mis- and disinformation on social media
- The importance of vaccination programmes

Telehealth

- Making a medical appointment on the internet
- How to tele-consult your doctor
- How to access and understand health tests and results on the internet

Health portal and data security

- MyHealth domain
- Insurance / health finances portal
- Access to health data

7. Relevant stakeholders and potential cooperation partners

The Comb-Up Project (Erasmus+ project aimed towards increasing the motivation of low-qualified adult learners to take part in education and improve their literacy): https://comp-up.erasmus.site/

Digital Health Europe (a project that will boost innovation and advance the Digital Single Market priorities for the digital transformation of health and care): https://digitalhealtheurope.eu/

The European Programme of Work, 2020–2025 – "United Action for Better Health in Europe" (EPW): https://www.who.int/europe/home?v=welcome

Health Literacy Europe (European networks, interests and alliance groups working on the improvement of health literacy): https://www.healthliteracyeurope.net/

Pharos (expert centre for health inequalities): https://www.pharos.nl/

Stichting lezen en schrijven (organisation that helps low literate Dutch citizens to read, write and calculate): https://www.lezenenschrijven.nl/

Taalhuis (a Dutch partnership working to combat low literacy): https://www.taalhuis.nl/

Value for health co-lab (a non-profit private organisation whose mission is to measure value in health): https://vohcolab.org/

8. Quotes of interviewees

[On the topic of health insurance] *"That is still arranged by my mother"* [18-35, low education].

[On the topic of the online learning platform] "*In the first place it needs to be known that it exists and what exactly it can be used for. That this is communicated well is an important first step*" [18-35, high education] .

"For diabetes you have sensors and these are only reimbursed if you need insulin four times a day. So if you don't need that many you won't receive compensation. I have a client that I need

to visit three times a day and such a sensor would help tremendously" [District nurse and project leader electronic health record and healthcare technology].

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10. Annex 1 Interview questions

Interviewvragen voor burgers

Inleiding van het TRIO-project:
Onze gezondheidszorg wordt in hoog tempo gedigitaliseerd, maar niet iedereen beschikt over de juiste digitale-, gezondheids- en datavaardigheden om alle veranderingen bij te houden. Het TRIO-project wil mensen helpen deze drie vaardigheden te verbeteren, zodat de gezondheidszorg voor iedereen toegankelijk blijft. Om dit te bereiken ontwikkelen we verschillende hulpmiddelen: een handleiding, een toolkit, een groenboek en een online leeromgeving voor volwasseneneducatie. Eerst moeten we echter achterhalen waar precies de behoeften liggen en hoe we onze hulpmiddelen het beste op deze behoeften kunnen afstemmen. Daarom interviewen we mensen uit verschillende leeftijdsgroepen en onderwijsachtergronden, alsmede professionals uit de gezondheidszorg en de beleidssector.

Gebruik van gegevens:
Het interview wordt eerst samengevat en vervolgens ter revisie naar u teruggestuurd. De samenvatting wordt gebruikt als informatiebron in ons nationale rapport, maar wordt niet letterlijk overgenomen. De antwoorden die u geeft zijn volledig anoniem, tenzij u toestemming heeft gegeven voor het gebruik van uw naam. Wij kunnen u vragen of wij een citaat in het verslag mogen opnemen, maar uw naam zal niet worden genoemd (tenzij anders aangegeven). In plaats daarvan zullen we de geïnterviewden groeperen naar leeftijd en opleidingsniveau, en alle citaten zullen als zodanig worden vermeld.

Vergeet niet het toestemmingsformulier

Leeftijd: ...

Geslacht: ...

Geboorteland: ...

Onderwijsniveau: ...

Professionele achtergrond en/of vrijwilligerswerk: ...

Q1 Denkt u dat de basisgezondheidszorg in ons land voor iedereen even toegankelijk is? Zowel in financiële zin als in de zin van fysieke en mentale mogelijkheden?

Q2 Weet u hoe u gezondheidsinformatie op internet kunt vinden? Zo ja, hoe zou u dat doen?

Q3 Hoe weet u of de gezondheidsinformatie die u op het internet vindt betrouwbaar is (en niet onjuist of misleidend)?

Q4 Hoe nuttig vindt u het internet bij het nemen van beslissingen over uw gezondheid?

Q5 Maakt u gebruik van 'mijngezondheid.net'? Zo ja, waarom? Zo nee, waarom niet?

Q6 Weet u waar uw medische gegevens zijn opgeslagen? Zo ja, waar?

Q7 Weet u wie toegang heeft tot uw medische gegevens? Zo ja, wie?

Q8 Vindt u medische dossiers makkelijk te begrijpen? Heeft u bijvoorbeeld moeite met het lezen van medische documenten, zoals onderzoeksverslagen of bloedonderzoeken? Begrijpt u de doseringsinstructies van medicijnen?

Q9 Weet u hoe u uw medisch dossier kunt inzien en de inhoud en toegankelijkheid ervan kunt wijzigen? Als u bijvoorbeeld een deel van uw medische geschiedenis wilt verwijderen of ervoor wilt zorgen dat andere zorgverleners er geen toegang toe hebben, weet u dan wat u moet doen?

Q10 Gebruikt u applicaties om uw doktersafspraken of medicatieschema bij te houden, zoals een telefoonkalender of een alarm? Zo ja, vindt u deze gebruiksvriendelijk? Zo nee, weet u waar u deze kunt vinden en hoe u ze kunt gebruiken?

Q11 Gebruikt u digitale hulpmiddelen om uw gezondheid te controleren, zoals het bijhouden van uw gewicht, bloeddruk of bloedsuikerspiegel? Zo ja, vindt u deze gebruiksvriendelijk?

De volgende vragen gaan specifiek over het TRIO-project

Q12 Zou u geïnteresseerd zijn in het gebruik van een online leeromgeving en/of een handleiding om uw digitale gezondheidsvaardigheden te verbeteren? Zo ja, waarom? Zo nee, waarom niet?

Q13 Als u een online leeromgeving zou gebruiken, welke vorm van informatie (b.v. tekst, afbeeldingen, video's, oefeningen, enz.) zou voor u het meest zinvol zijn?

Q14 Wat zou volgens u een goede manier zijn om mensen (b.v. oudere mensen of mensen met een sociaaleconomische achterstand of met gezondheidsproblemen) aan te sporen deel te nemen aan een opleiding ter verbetering van hun digitale gezondheidsvaardigheden?

Wilt u in de toekomst bij het project betrokken blijven? Zou u geïnteresseerd zijn in deelname aan de co-creatie sessie?

Interviewvragen voor deskundigen

Inleiding van het TRIO-project:
Onze gezondheidszorg wordt in hoog tempo gedigitaliseerd, maar niet iedereen beschikt over de juiste digitale-, gezondheids- en datavaardigheden om alle veranderingen bij te houden. Het TRIO-project wil mensen helpen deze drie vaardigheden te verbeteren, zodat de gezondheidszorg voor iedereen toegankelijk blijft. Om dit te bereiken ontwikkelen we verschillende hulpmiddelen: een handleiding, een toolkit, een groenboek en een online leeromgeving voor volwasseneneducatie. Eerst moeten we echter achterhalen waar precies de behoeften liggen en hoe we onze hulpmiddelen het beste op deze behoeften kunnen afstemmen. Daarom interviewen we mensen uit verschillende leeftijdsgroepen en onderwijsachtergronden, alsmede professionals uit de gezondheidszorg en de beleidssector.

Gebruik van gegevens:
Het interview wordt eerst samengevat en vervolgens ter revisie naar u teruggestuurd. De samenvatting wordt gebruikt als informatiebron in ons nationale rapport, maar wordt niet letterlijk overgenomen. De antwoorden die u geeft zijn volledig anoniem, tenzij u toestemming geeft voor het gebruik van uw naam. Wij kunnen u vragen of wij een citaat in het verslag mogen opnemen. Als u anoniem wenst te blijven zullen wij verwijzen naar uw beroep.

Vergeet niet het toestemmingsformulier

Organisatie: ...

Professionele achtergrond: ...

Q1 Kunt u wat meer vertellen over uw werk? Wat doet u precies?

Q2 Ontmoet u in uw werk veel mensen met slechte digitale, gezondheids- of data vaardigheden?

Q3 Zo ja, zijn er sociaaleconomische of demografische factoren die volgens u hiermee verband houden?

Q4 Welke voordelen en welke problemen komen volgens u voort uit de digitalisering van de gezondheidszorg?

Q5 Maakt u zelf gebruik van online gezondheidshulpmiddelen, zoals ‘mijngezondheid.net’, medische websites of gezondheidsapplicaties?

Q6 Wat zijn volgens u de belangrijkste digitale gezondheidshulpmiddelen voor mensen? B.v. een telefoonagenda om je medicatieschema bij te houden, apps voor het bijhouden van medische informatie (zoals gewicht, bloeddruk en suikerspiegel) of het digitaal opvragen van apotheekrecepten.

Q7 Welke online gezondheidshulpmiddelen ontbreken er of zijn niet voor iedereen beschikbaar?

Q8 Wat zijn volgens u de belangrijkste belemmeringen die mensen ervan weerhouden digitale gezondheidshulpmiddelen te gebruiken?

Q9 Hoe kunnen we beleidsvoering gebruiken om meer mensen toegang te geven tot online gezondheidsinformatie?

Q10 Denkt u dat mensen weten waar hun medische gegevens worden opgeslagen? Weet u zelf waar uw medische gegevens worden opgeslagen?

Q11 Vindt u het belangrijk dat mensen inzicht hebben in hun eigen medische geschiedenis door middel van 'mijngezondheid.net'? Vindt u dat 'mijngezondheid.net' gebruiksvriendelijk is?

De volgende vragen gaan specifiek over het TRIO-project.

Q12 Wat voor informatie moet de online leeromgeving bevatten zodat het nuttig is voor mensen? En welke vorm van informatie (b.v. tekst, afbeeldingen, video's, oefeningen, enz.) zou het meest leerzaam zijn?

Q13 Wat moet een online leeromgeving bevatten zodat het aantrekkelijk is voor mensen met minder mogelijkheden (b.v. oudere mensen of mensen met een sociaaleconomische achterstand of met gezondheidsproblemen)? Hoe kunnen we deze mensen tegemoet komen om de online leeromgeving te gebruiken? Wat hebben zij nodig?

Q14 Hoe kunnen we mensen met weinig digitale gezondheidsvaardigheden motiveren om deel te nemen aan een online leeromgeving?

Q15 Heeft u ideeën of weet u inspirerende voorbeelden voor het verbeteren van digitale gezondheidsvaardigheden?

Wilt u in de toekomst bij het project betrokken blijven? Zou u geïnteresseerd zijn in deelname aan de co-creatie sessie?