eHealth literacy and health-related Internet use among Swedish primary healthcare visitors: Cross-sectional questionnaire study

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Table of Contents

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Abstract

Background: Digitalization has profoundly transformed healthcare delivery, especially within primary healthcare, as a crucial avenue for providing accessible and cost-effective care. While eHealth services are frequently highlighted for improving healthcare availability and promoting equality, it is essential to recognize that digitalization can inadvertently exclude individuals who lack the prerequisites to utilize eHealth services. Previous research has identified lower eHealth literacy among older individuals, those with lower educational levels, and those who use the Internet less frequently. However, in a Swedish context, only a few studies have investigated eHealth literacy.

Objective: This study investigated eHealth literacy and its association with health-related Internet use and sociodemographic characteristics among primary healthcare visitors.

Methods: This cross-sectional study employed a quantitative, descriptive approach. 172 Swedish-speaking patients visiting a primary healthcare center participated by answering the eHealth Literacy Questionnaire (eHLQ). The study compared mean scores using the Mann-Whitney U-test and Kruskal-Wallis-test. A logistic regression analysis also explored the associations between low eHealth literacy and significant independent variables identified in the univariate analyses.

Results: The results showed that higher age and perceptions of health-related Internet information as not useful or important were the primary factors associated with lower eHealth literacy. The eHealth literacy domains in which participants scored highest—understanding of and engagement with health, and a sense of security and control—were not directly linked to utilizing and interacting with the eHealth system. Instead, the most challenging domains were related to motivation to use eHealth and aligning eHealth services with individual needs.

Conclusions: Healthcare professionals are crucial in addressing patients' attitudes and motivation towards eHealth use. Person-centered support can guide patients toward services that meet their individual needs, by recommending personalized websites and other eHealth services. To ensure that eHealth services effectively align with users' requirements, it is essential for eHealth developers and healthcare authorities to actively involve both patients and healthcare professionals in the development process.

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Keywords: eHealth literacy; Primary healthcare; Health-related Internet information; Health literacy.

Introduction

The digitalization has significantly transformed the delivery of healthcare. Particularly within primary healthcare, which faces challenges related to an increasingly aging and multimorbid population, eHealth is an important means for providing accessible and cost-effective care [1,2]. eHealth refers to information and communications technologies used in healthcare, including health-related Internet information (HRII), electronic health records and prescriptions, health applications, and digital healthcare visits [3].

In a Swedish context, the government envisions that by 2025, Sweden will be the world leader in utilizing eHealth to facilitate equitable access to quality healthcare and enhance patient participation.

This visionary perspective underscores the significance of developing eHealth services based on citizens' needs and prerequisites [4]. Recent reports from the Swedish Internet Foundation have indicated that 96 % of all adult Swedish citizens use the Internet, with 83 % utilizing eHealth services, including HRII acquisition, digital healthcare visits, and health application use [5,6]. Similar to global trends, the use of eHealth services in Sweden experienced a substantial increase during the COVID-19 pandemic, with digital alternatives largely replacing traditional healthcare practices due to social distancing measures [7].

The Internet is also a common source of health information; for many individuals, it is the primary choice [5,8]. The advantages of reliable HRII include its potential to enhance people's self-management capabilities, increase involvement in care, and improve the ability to make informed decisions. These, in turn, facilitate person-centred communication in healthcare [9,10]. In a previous study, Swedish primary healthcare nurses emphasized similar advantages with credible HRII, exemplified by the digital national healthcare platform 1177.se, where residents can access quality-reviewed general health information, self-care advice, and personal health data [11,12]. However, these primary healthcare nurses also highlighted challenges associated with HRII, including patient anxiety and confusion. They noted conflicted consultations arising from patients encountering unreliable HRII and experiencing difficulties in interpreting this information [12]. Many individuals initiate health information searches on Google, a practice frequently highlighted in the literature as potentially problematic due to the risk of directing users to unreliable websites [12,13,14,15].

While eHealth services are often emphasized for enhancing healthcare availability and promoting healthcare equality, digitalization can exclude individuals who lack the prerequisites to use such services. Increased health inequities due to digitalization are recognized as the 'digital divide' [16,17]. Digital alienation is associated with risk factors such as advanced age, low educational attainment, and physical limitations [17,18]. Other contributing factors include lack of motivation, limited digital access, low self-confidence, and inadequate knowledge and abilities [18].

In 2006, Norman and Skinner initially described eHealth literacy as the ability to search, find, appraise, and use health information from digital sources [19]. However, with the evolution of digital technologies and the integration of more interactive online elements, such as social media, the concept has been seen as requiring redefinition [20]. As part of this effort, Norgaard et al. adopted a validity-driven approach to incorporate elements related to the interaction between individuals and eHealth systems, leading to the development of the seven-domain eHealth Literacy Framework (eHLF). The seven domains in the eHLF encompass both individual capabilities and characteristics of eHealth services, emphasizing their interaction [21]. Based on the eHLF, an instrument called the eHealth Literacy Questionnaire (eHLQ) was developed to assess individuals' eHealth literacy across multiple domains [22].

Adequate eHealth literacy has been associated with positive health behaviors, such as increased exercise, balanced nutrition, and improved stress management among various patient groups [23,24]. Moreover, individuals with adequate eHealth literacy are inclined to conduct more frequent HRII searches. This behavior contributes to enhanced health knowledge and yields positive outcomes, including better understanding of medical conditions, increased empowerment, improved self-management capacity, enhanced communication with healthcare professionals, and greater engagement in medical decision-making [25].
Previous research has consistently identified lower eHealth literacy among older individuals, those with lower levels of education, and individuals who use the Internet less frequently [26,27,28]. However, in the Swedish context, only a limited number of studies have investigated eHealth literacy, primarily focusing on specific demographic groups such as parents, Arabic-speaking

immigrants, and older populations [29,30,31]. Notably, there is a lack of Swedish studies examining eHealth literacy among primary healthcare visitors from a multidimensional perspective.

To maximize the positive impact of eHealth services, promote overall well-being, ensure healthcare accessibility, and alleviate strain on primary healthcare, it is essential for primary healthcare patients to possess sufficient eHealth literacy. Understanding the unique challenges faced by patients is crucial for assisting them in enhancing their eHealth literacy. Currently, there is a knowledge gap regarding eHealth literacy in Swedish primary healthcare. Therefore, this study aims to investigate eHealth literacy and its association with health-related Internet use and sociodemographic characteristics among primary healthcare visitors.

Methods

Study design

This cross-sectional study applied a quantitative, descriptive approach.

Sample and Procedures

Data were collected from two rural and two urban primary healthcare centers of varying sizes (with patient lists ranging from 2,500 to 20,000) in northern Sweden. Receptionists were tasked with distributing questionnaires to all adult (≥18 years old), Swedish-speaking patients visiting these healthcare centers within a two-week period in November 2020. Participants had the option to complete the questionnaire either at the primary healthcare center or at home, returning it by mail using a provided stamped and addressed envelope.

A total of 172 questionnaires were collected. The sociodemographic characteristics of the sample are presented in Table 1.

Table 1. Sociodemographic characteristics of participants.

	n (%)	Mean (SD)
Sample (n)	172	
Sex		
Male	77 (45.3)	
Female	93 (54.7)	
Not disclosed	2 (1.2)	
Age		57.5 (19.9)
≤40	44 (25.6)	
41-60	41 (23.8)	
61-74	43 (25.0)	
≥75	42 (24.4)	
Not disclosed	2 (1.2)	
Education		
Elementary school or less	26 (15.1)	
Secondary school or vocational	75 (43.6)	
University	71 (41.3)	
Employment status		
Working	70 (40.7)	
Unemployed	2 (1.2)	
Student	19 (11.0)	
Retired	76 (44.2)	
Other activity	5 (2.9)	
Living arrangement		
Living with a partner/family	123 (71.3)	
Living alone	49 (28.7)	
Chronic disease		
None	75 (44.6)	
Diabetes	29 (17.3)	
Cardiovascular disease	30 (17.9)	
Other chronic disease	34 (20.2)	
Self-rated health		
Excellent or very good	51 (29.7)	
Good	64 (37.2)	
Somewhat okay or poor	55 (32.0)	
Not disclosed	2 (1.1)	

Instrument and data collection

The eHealth Literacy Questionnaire (eHLQ) is based

on the seven-domain eHealth Literacy Framework (eHLF) [21,22]. This instrument consists of 35 items distributed across the seven domains, which are categorized into three dimensions: individual competencies of the user, the user's experiences with digital services, and the interaction between the user and digital services [22] (Table 2).

Table 2. Presentation of the eHLQ dimensions, domains, and the number of items in the respective domain.

eHLQ domain	Dimension	No of items
	Individual competence of the user	
1. Using technology to process health information		5
2. Understanding of health concepts and language		5
	Interaction between the user and the digital services	
3. Ability to actively engage with digital services		5
4. Feeling safe and in control		5
5. Motivated to engage with digital services		5
	The user´s experiences with digital services	
6. Access to digital services that work		6
7. Digital services that suit individual needs		4

Each domain of the eHealth Literacy Questionnaire (eHLQ) comprises four to six items rated on a 4-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. The scoring for each item ranges from 1 to 4, with scores calculated as an index by averaging the item scores within each domain using equal weighting. The domains are presented separately, and no overall eHLQ score is calculated. Higher scores within each domain indicate stronger abilities or agreement with the domain's focus [22].

The eHLQ was initially developed simultaneously in Danish and English, demonstrating strong psychometric properties in various contexts [22,32,33]. For the Swedish translation, a systematic and rigorous process of translation and cultural adaptation was employed, resulting in the validation of solid psychometric properties specific to the Swedish version [34]. In addition to the eHLQ, two additional items were included to assess participants' perceptions of the usefulness and importance of HRII, using a five-point Likert scale. Participants also self-assessed their health status on a five-point scale ranging from poor to excellent. Sociodemographic information, including age, sex, education level, living arrangement, and work status, was collected. Furthermore, participants were asked about chronic diseases (see Table 1).

Data analysis

Data analysis was performed using SPSS (version 25) and JAMOVI (version 2.2.3). Two questionnaires with ≥50% missing values were excluded. The expectation-maximization algorithm imputation in SPSS replaced internal missing values.
Demographic characteristics were presented using frequency and percentage for categorical variables, mean and standard deviation (SD) with 95% confidence intervals (CI) for continuous variables, and median and interquartile range (IQR) as appropriate for skewed distributions. A boxplot was utilized to visually illustrate the distribution of data across the seven eHealth Literacy Questionnaire (eHLQ) domains. Participants were categorized into four age groups based on statistical considerations, representing quartiles of the total sample and guided by theoretical rationale, to enable comprehensive analyses of Internet usage and eHealth literacy distribution.

Non-parametric tests were employed due to deviations from normal distribution, as determined by the Shapiro-Wilk test and visual examination of the eHLQ and Internet habit data. Mean eHLQ scores were compared using the Mann-Whitney U-test, with effect size reported using Cohen's d

[35]. Cohen's d values of 0.2, 0.5, and 0.8 represent small, medium, and large effect sizes, respectively. Comparisons involving more than two groups were analyzed using the Kruskal-Wallis test, and effect size was assessed using Epsilon squared (ε^2). Epsilon squared (ε^2) values between 0.00 and 0.01 are considered negligible, 0.01 to 0.04 weak, >0.04 to 0.16 moderate, >0.16 to 0.36 relatively strong, and 0.36 to 0.64 strong [36].

Prior to conducting logistic regression analysis, participants were categorized into low or high eHealth literacy groups based on mean scores for each domain. A threshold of 2.50 and above was used to define high eHealth literacy, indicating strong agreeent with domain items. Backward stepwise logistic regression was performed for each of the seven domains, with low eHealth literacy as the dependent variable. Independent variables included sex, age (treated as a continuous variable), education level, self-rated health (dichotomized), frequency of HRII acquisition, and perceived importance/usefulness of HRII acquisition (also dichotomized). To assess multicollinearity, Variance Inflation Factor (VIF) and Tolerance tests were conducted [37], revealing no indications of multicollinearity among the independent variables. Interactions between independent variables were also examined and not observed.

We reported the Odds Ratio (OR) along with its corresponding 95% Confidence Intervals (CIs) to assess the associations between eHealth literacy and various independent variables. The variance explained by the logistic regression models was evaluated using the Nagelkerke r^2. Statistical significance was determined using a threshold of $P < .05$.

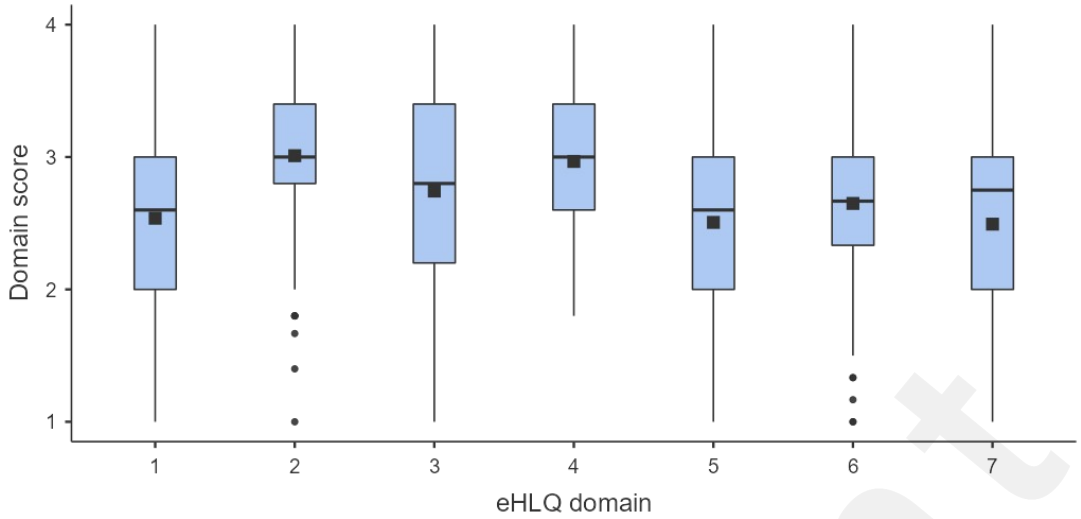
Ethical considerations

Ethical approval for this study was obtained from the Regional Ethical Review Board (Dno 2019-0341, 2014/179-31), which also included a supplementary application for expanded data collection. All procedures and data management were conducted in accordance with the General Data Protection Regulation (GDPR) and ethical principles outlined in the Helsinki Declaration [38,39].

Results

The eHealth Literacy Questionnaire

As a group, participants rated highest on domains 2 and 4, indicating a strong perception of understanding and engagement with their health, as well as feeling secure regarding the safety and confidentiality of eHealth services. Conversely, domains where participants rated lower included perceptions of whether eHealth services suited their personal needs (Domain 7), motivation to use eHealth services (Domain 5), and perceived ability to understand and use HRII (Domain 1) (Figure 1 and Table 3).



eHLQ domains:
1. Using technology to process health information
2. Understanding of health concepts and language
3. Ability to actively engage with digital services
4. Feeling safe and in control
5. Motivated to engage with digital services
6. Access to digital services that work
7. Digital services that suit individual needs

Figure 1. Distribution of eHLQ scores across different domains.

Table 3. Mean and median scores of the seven eHLQ domains.

DOMAIN	Mean (SD) [CI]	Median (IQR)
1. Using technology to process health information	2.54 (0.76) [2.42-2.65]	2.60 (2.00-3.00)
2. Understanding of health concepts and language	3.01 (0.57) [2.92-3.09]	3.00 (2.80-3.40)
3. Ability to actively engage with digital services	2.74 (0.85) [2.62-2.87]	2.80 (2.20-3.40)
4. Feeling safe and in control	2.97 (0.56) [2.88-3.05]	3.00 (2.00-3.00)
5. Motivated to engage with digital services	2.51 (0.72) [2.40-2.61]	2.60 (2.00-3.00)
6. Access to digital services that work	2.65 (0.62) [2.56-2.74]	2.67 (2.30-3.00)
7. Digital services that suit individual needs	2.49 (0.78) [2.38-2.61]	2.75 (2.00-3.00)

Internet and health-related Internet information-seeking habits

The findings revealed that a significant majority of participants accessed the Internet daily; however, daily Internet use was less frequent in the highest age group (age >75), with approximately half reporting daily usage. Additionally, as age increased, there was a notable decline in the frequency of HRII searches. There were age-related differences in the primary choice for health-related inquiries, with a clear majority in the youngest age group primarily choosing the Internet, whereas almost all in the oldest age group preferred healthcare providers.

In terms of HRII searches, the choice between Google, 1177.se, and other sources was distributed similarly across age groups, although there were substantial numbers of missing values in the older age groups. The results also demonstrated that the perceived usefulness and importance of HRII were highest in the youngest age group, gradually diminishing with each successive age group (Table 4).

Table 4. Internet and HRII use and attitudes among the total sample and across different age groups n (%).

	Total sample	≤40	41-60	61-74	≥75
Frequency of Internet use					
Every day	141 (82.0)	44 (100.0)	40 (97.6)	35 (81.4)	22 (52.4)
Less often or never	29 (16.9)		1 (2.4)	8 (18.6)	20 (47.6)
Missing	2 (1.1)				
Frequency of HRII acquisition					
Every week	27 (15.9)	10 (22.7)	8 (19.5)	5 (11.6)	3 (7.1)
Every month	57 (33.5)	26 (59.1)	14 (34.1)	10 (23.3)	7 (16.7)
Less often or never	86 (50.6)	8 (18.2)	19 (46.3)	27 (62.8)	31 (73.8)
Missing	2 (1.2)	-	-	1 (2.3)	1 (2.4)
The primary source of health information					
Healthcare	84 (48.8)	7 (15.9)	17 (41.5)	24 (55.8)	34 (81.0)
The Internet	58 (33.7)	27 (61.4)	17 (41.5)	12 (27.9)	2 (4.8)
Other	30 (17.4)	10 (22.7)	7 (17.0)	7 (16.3)	6 (14.3)
The primary source of HRII					
Google	70 (47.9)	23 (52.3)	17 (43.6)	19 (55.9)	10 (37.0)
1177	68 (46.6)	20 (45.5)	22 (56.4)	13 (38.2)	13 (48.1)
Other	8 (5.5)	1 (2.3)	-	2 (5.9)	4 (14.8)
Missing	26 (15.1)	-	2 (4.9)	9 (20.9)	15 (35.7)
Perceived HRII usefulness					
Not useful	28 (17.3)	-	2 (5.0)	8 (20.0)	16 (43.2)
Unsure	32 (19.8)	6 (14.0)	7 (17.5)	9 (22.5)	10 (27.0)
Useful	102 (63.0)	37 (86.0)	31 (77.5)	23 (57.5)	11 (29.7)
Missing	10 (5.8)	1 (2.3)	1 (2.4)	3 (7.0)	5 (11.9)
Perceived HRII importance					
Not important	27 (16.7)	0 (0.0)	5 (12.5)	5 (12.5)	16 (43.2)
Unsure	15 (9.3)	2 (4.7)	-	8 (20.0)	5 (13.5)
Important	120 (74.1)	41 (95.3)	35 (87.5)	27 (67.5)	16 (43.2)
Missing	10 (5.8)	1 (2.3)	1 (2.4)	3 (7.0)	5 (11.9)

eHealth literacy in relation to sociodemographic factors and Internet habits

The univariate analyses revealed that men had significantly lower mean values on all scales except those related to the ability to use digital technology and motivation for eHealth utilization (domains 3 & 5). Additionally, differences were observed among different age groups across all eHLQ domains, with significantly lower scores observed as age increased. Individuals with lower education and self-rated health exhibited lower abilities to understand and use HRII and digital technology (domains 1 & 3), poorer understanding of their health (domain 2), lower motivation to use eHealth (domain 5), and the perception of not having access to well-functioning eHealth services that suited their personal needs (domains 6, 7). Those who sought HRII less frequently and primarily turned to healthcare for health-related inquiries showed lower scores in all domains except domain 4. Additionally, individuals who perceived HRII as neither important nor useful rated significantly lower across all eHLQ domains (Multimedia appendix 1).

The final logistic regression analysis revealed associations between low eHealth literacy and higher

age in domains related to finding, understanding, and using HRII (domain 1), using digital technology (domain 3), and accessing well-functioning eHealth services (domain 6). The perception that HRII was not useful was associated with lower eHealth literacy in domains related to individual capabilities (domains 1 and 2: understanding one's health and using HRII), the interaction between the individual and eHealth services (domains 3-5: ability and motivation to use digital technology and feelings of security), and characteristics of the eHealth system (domain 6: access to functional eHealth services).

Perceiving HRII as not important was associated with lower eHealth literacy in domains related to the use of HRII (domain 1), motivation to use eHealth (domain 5), and eHealth services that suited personal needs (domain 7). Poorer self-assessed health was associated with lower perceived motivation to use eHealth services (domain 5). Notably, associations between sex, education, frequency of accessing HRII, and low eHealth literacy were not found across any of the domains in the logistic regression analysis (Table 5).

Table 5. Final logistic regression models, associations for low eHealth literacy.

eHLQ domain	**Significant independent variables** (OR, 95% CI, *P value*)	r^2
1. Using technology to process health information	Higher age (1.02, 1.00-1.05, *.033*) HRII not useful (4.16, 1.64-10.56, *.003*) HRII not important (9.50, 2.72-33.16, <*.001*)	0.51
2. Understanding of health concepts and language	HRII not useful (7.41, 2.76-19.90, <*.001*)	0.20
3. Ability to actively engage with digital services	Higher age (1.05, 1.02-1.08, <*.001*), HRII not useful (12.32, 4.98-30.49, <*.001*)	0.53
4. Feeling safe and in control	HRII not useful (3.12, 1.46-6.70, <*.001*)	0.08
5. Motivated to engage with digital services	Poorer self-assessed health (2.64, 1.15-6.01, *.022*) HRII not useful (4.47, 1.81-10.74, <*.001*) HRII not important (6.72, 2.13-21.20, <*.001*)	0.43
6. Access to digital services that work	Higher age (1.02, 1.00-1.05, *.025*) HRII not useful (3.85, 1.72-8.64,< *.001*)	0.23
7. Digital services that suit individual needs	HRII not important (10.64, 3.12-36.32, <*.001*)	0.18

r^2= Nagelkerke
Independent variables in the initial models included: sex, age, education, self-rated health, frequency of HRII acquisition, perceived importance and usefulness of HRII.

Discussion

The main finding from this study was that higher age and perceptions of HRII as not useful or important were the primary factors associated with lower eHealth literacy among our sample of primary healthcare visitors. Notably, the domains in which participants scored highest, specifically those related to understanding and engagement with health (domain 2) and a sense of security and control (domain 4), were not directly associated with utilizing and interacting with the eHealth system.

The most challenging eHealth literacy domains appeared to be those related to motivation to use eHealth (domain 5) and the alignment of eHealth services with individual needs (domain 7). Additionally, other domains where many participants indicated low eHealth literacy included the use of HRII (domain 1) and active engagement with digital services (domain 3). The findings regarding the domains rated highest and lowest align with studies conducted using the eHealth Literacy

Questionnaire (eHLQ) in diverse international settings. For example, similar patterns have been observed among Spanish primary healthcare visitors [40], a representative Australian population [41], Taiwanese individuals with chronic diseases [33], Canadian cancer survivors [42], and a small-scale Swedish study focusing on parents of hospitalized children [30].

The observation that predominantly elderly participants exhibited lower eHealth literacy was expected and is consistent with prior research findings [28,32,40]. Domains of the eHLQ where low eHealth literacy was associated with higher age included searching, critically appraising, and using HRII, utilizing digital technology, and accessing well-functioning eHealth services. The reasons for these lower capabilities are often attributed to the limited integration of digital technology into their work and daily lives, resulting in less familiarity compared to younger generations. Older individuals may also prefer traditional methods of managing healthcare matters if these methods have proven satisfactory in the past [28]. Moreover, older individuals are more likely to encounter physical obstacles that complicate the use of digital services, such as impaired vision, tremors, or cognitive limitations [18]. Among our participants, the older group primarily sought health-related inquiries from healthcare providers, unlike the younger group, which predominantly sought information online. However, the eHealth challenges faced by older individuals can be addressed through initiatives such as increased exposure to the Internet and eHealth services, as well as by adapting eHealth services to meet individual needs [28].

Among the participants in this study, a clear association was observed between low eHealth literacy and the perception that HRII was not useful and/or not important. Several prior studies have also reported similar associations between low eHealth literacy and these attitudes toward HRII [29,43,44,45]. This association has been argued to be explained by the fact that favorable attitudes toward HRII may lead to frequent online searches and increased eHealth service use, which in turn could contribute to improved eHealth literacy [46]. Conversely, it is reasonable to consider that the relationship could also be reversed; high eHealth literacy resulting in more positive attitudes, while low eHealth literacy leads to lower levels of eHealth utilization and more negative attitudes [47].

We found that rating one's health as poorer was associated with lower motivation to use eHealth. Similar relationships have been reported in previous studies [48,49,50]. Possible reasons for this association include the hypothesis that individuals with high eHealth literacy are more inclined to use digital resources for information about medical treatment and preventive actions to maintain good health [51].

These seven eHLQ domains should not be regarded as isolated entities, as there may be a chain reaction wherein challenges in one domain could impact another. For instance, if eHealth services are perceived as not meeting individual needs (domain 7), it could decrease motivation to use these services (domain 5), subsequently leading to a reduced ability and inclination to seek HRII (domain 1). Furthermore, it is important not to view eHealth literacy and the factors influencing it as static entities; instead, they fluctuate and depend on the situation in which an individual currently finds themselves [19,52].

To facilitate interventions aimed at improving eHealth literacy at both group and individual levels, healthcare professionals, eHealth developers, and healthcare authorities need to be aware of the areas within eHealth usage that pose the greatest challenges. Therefore, participants who assess their eHealth literacy as low are the target group for outreach and assistance in eHealth usage. Within our sample, many participants rated low on the perception that eHealth services meet their needs and the motivation to use eHealth. Notably, being motivated to use eHealth is often considered the foundation for overall eHealth service utilization and is deemed more critical than having digital

abilities [18,53]. However, it is conceivable that increased motivation arises only when eHealth services are perceived to meet personal needs or when individuals have learned to use eHealth services. Proposed measures to boost motivation to use eHealth could include healthcare professionals or eHealth educators presenting eHealth services in a relatable manner (used by 'people like me') and providing learning opportunities without pressure [54].

As healthcare professionals, facilitating the patient's perception that eHealth services do not meet individual needs may involve offering person-centered recommendations for websites or applications tailored to the patient's specific health condition, informational needs, and perceived capabilities. For eHealth developers and healthcare authorities, facilitative measures may involve engaging patients and healthcare professionals in the development of eHealth services and HRII, ensuring that HRII is universally designed, and enabling customization of eHealth services [16].

Limitations

The data collection was conducted during the first year of the COVID-19 pandemic, which led to a reduced number of participating primary healthcare centers and limited time available for data collection, ultimately affecting the intended sample size. Using both web-based and paper-based questionnaires could have potentially increased the sample size. However, given that our study focused on Internet use and health literacy competencies, we prioritized consistency and simplicity by administering only paper-based questionnaires.

Regarding eHealth Literacy measurement, it is important to note that the eHLQ assesses people's perceptions rather than their actual digital competencies. This implies that individuals may both underestimate and overestimate their skills [55].
Another limitation is that eHealth-literate individuals might be overrepresented in this study since they are more likely to participate than people who consider themselves to have poor eHL skills or negative attitudes toward eHealth service usage. This phenomenon is, however, complex to avoid. It is also important to note the low variance in some domains of the regression model, indicating the presence of factors influencing eHealth literacy that were not explored in this study. Based on existing research, these factors could include, for instance, a reluctance and fear of deviating from traditional physical contact with healthcare professionals, inadequate or negative experiences with digital usage, physical or psychological barriers to use (such as visual impairments, dementia, or tremors), or the absence of support from the surrounding environment regarding the use of digital tools [56,57]. However, we do not have data to confirm this; hence, it is an area that requires further investigation in the future.

Conclusions

This study has provided insights into the eHealth literacy domains where the greatest challenges among Swedish primary care visitors were found. Additionally, the results indicated that higher age and perceptions of HRII as not useful or important were the primary factors associated with lower eHealth literacy. Healthcare professionals can play a crucial role in addressing patients' attitudes and motivation for using eHealth by recommending personalized websites and other eHealth services. This person-centered support could address patients' attitudes and guide them toward eHealth services that better meet their needs. To ensure that eHealth services effectively align with users' needs, eHealth developers and healthcare authorities must involve patients and healthcare professionals in the development of these services.

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Conflicts of Interest

None declared.

Abbreviations

CI: Confidence Interval
eHLF: eHealth Literacy Framework
eHLQ: eHealth Literacy Questionnaire
HRII: Health-related Internet Information
IQR: Interquartile Range
OR: Odds Ratio
SD: Standard Deviation

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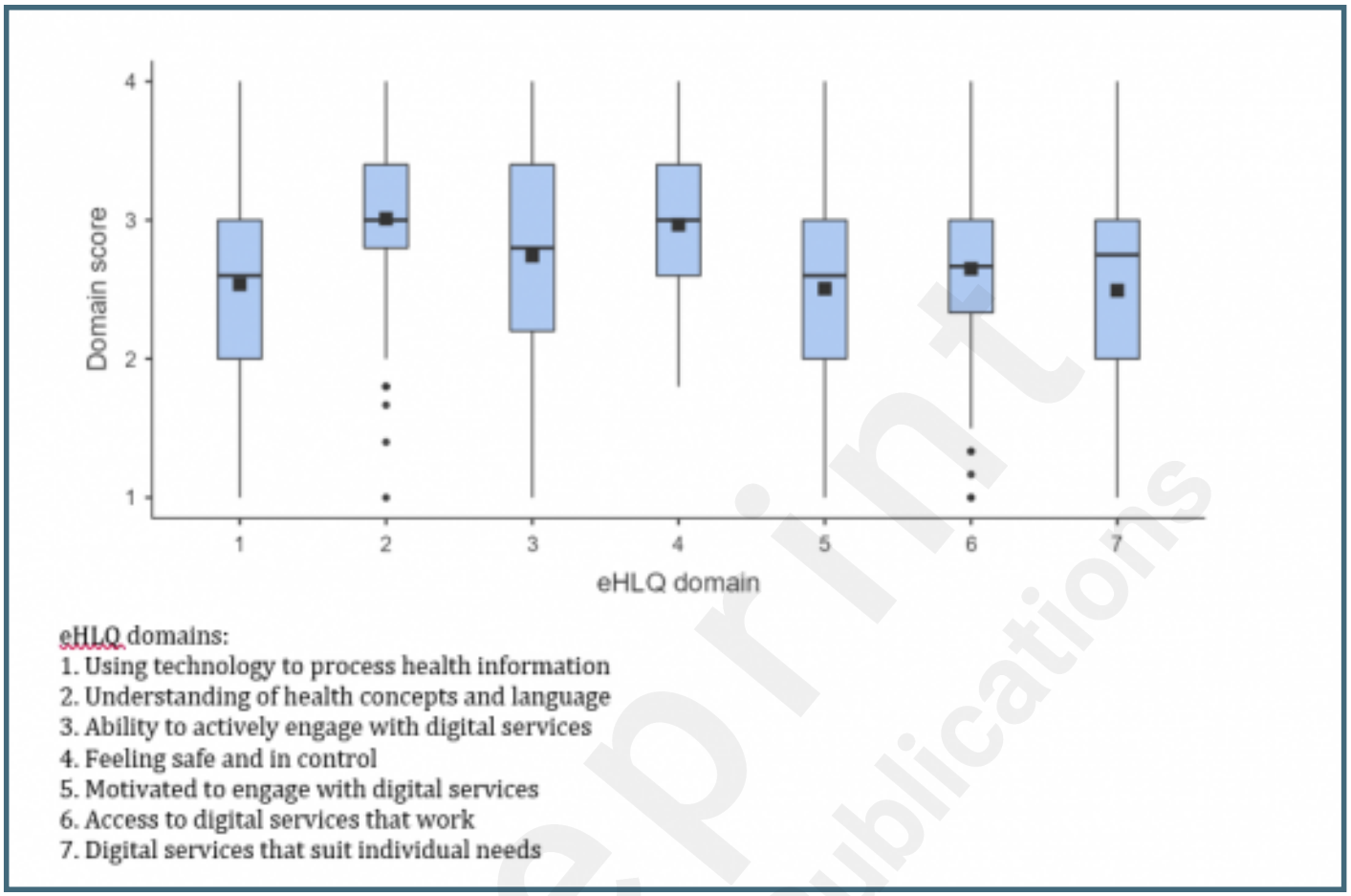
Supplementary Files

Figures

Boxplot. Distribution of eHLQ scores across different domains.



Multimedia Appendixes

Table. Associations among sociodemographic factors and Internet/HRII seeking habits and the seven eHLQ domains.
URL: http://asset.jmir.pub/assets/1791e17fa19f05d2a151dd8369327ad0.pdf