ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

The Impact of Digitalization on Communication: A Research on Trust in Physicians and E-Health Literacy

Dijitalleşmenin İletişime Etkisi: Hekime Güven ve E-Sağlık Okuryazarlığına İlişkin Bir Araştırma

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Abstract

Individuals' tendency to use digital platforms to obtain health-related information is one of the topics examined within the context of the e-health literacy literature. In this study, the focus is on whether the epistemological discussions on the negative effects of digitalization on communication exist on an ontological basis by considering the phenomena of e-health literacy and trust in physicians. For this purpose, it is attempted to reveal how e-health literacy brought about by digitalization affects trust. The Path Analysis model, which analyzes direct effects, was used in the study. In addition, a structural equation model was established to see whether demographic variables have a moderating role in the effect of e-health literacy on trust in physicians, and a moderation analysis was performed. A total of 349 participants were reached, and the obtained data were analyzed with the help of SPSS and AMOS software. The findings obtained in the study show that e-health literacy negatively affects trust in doctors ($\beta = -0.43$, $p < 0.001$), and that generation, education level, and problems experienced with doctors have a moderating effect on the effect of e-health literacy on trust in doctors ($p < 0.05$). The findings prove that while digitalization provides access to health information, it can weaken the patient-doctor relationship by reducing trust. In

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light of the results, it is possible to claim that epistemological discussions regarding the negative effects of digitalization on communication can also be seen ontologically.

Keywords: Digitalization, Communication, E-health Literacy, Trust in Physicians, Healthcare Communication

Öz

Bireylerin sağlıkla ilgili bilgi edinmek amacıyla dijital platformları kullanma eğilimleri, e-sağlık okuryazarlığı literatürü bağlamında incelenen konulardan biridir. Bu çalışmada, e-sağlık okuryazarlığı ve hekime güven fenomenleri dikkate alınarak dijitalleşmenin iletişim üzerindeki olumsuz etkilerine yönelik epistemolojik tartışmaların ontolojik zeminde var olup olmadığına odaklanılmaktadır. Bu amaçla, dijitalleşmenin beraberinde getirdiği e-sağlık okuryazarlığının güveni ne yönde etkilediği ortaya konulmaya çalışılmaktadır. Araştırmada doğrudan etkileri analiz eden Yol Analizi modeli kullanılmıştır. Ayrıca, demografik değişkenlerin e-sağlık okuryazarlığının hekime güven üzerindeki etkisinde düzenleyici bir role sahip olup olmadığını görmek üzere yapısal eşitlik modeli kurularak moderasyon analizi gerçekleştirilmiştir. Toplam 349 katılımcıya ulaşılmış ve elde edilen veriler SPSS ve AMOS yazılımları yardımıyla analiz edilmiştir. Araştırmada elde edilen bulgular e-sağlık okuryazarlığının hekime güveni olumsuz yönde etkilediğini ($\beta = -0,43$, $p < 0.001$), jenerasyonun, eğitim durumunun ve hekimle yaşanan problemlerin e-sağlık okuryazarlığının hekime güven üzerindeki etkisinde moderatör etkiye sahip olduğunu göstermektedir ($p < 0.05$). Bulgular, dijitalleşmenin sağlık bilgilerine erişim sağlarken, güveni azaltarak hasta-hekim ilişkisini zayıflatabileceğini kanıtlamaktadır. Sonuçlar nezdinde dijitalleşmenin iletişim üzerindeki olumsuz etkilerine yönelik epistemolojik tartışmaların ontolojik olarak da görülebildiğini iddia etmek mümkündür.

Anahtar Kelimeler: Dijitalleşme, İletişim, E-Sağlık Okuryazarlığı, Hekimlere Güven, Sağlık İletişimi

Introduction

Digitalization's rapid advancement has reshaped how individuals communicate, access information, and engage with various systems, particularly healthcare (Castells, 2010). Information and Communication Technologies (ICTs) have drastically transformed daily life by expanding the availability of information and enhancing connectivity across geographical and social boundaries. As a result, digital platforms have become integral to modern life, enabling faster access to knowledge and facilitating more efficient communication processes (Hajli et al., 2017).

In healthcare, digitalization has introduced e-health platforms, telemedicine, and a wide array of online resources that allow patients to independently seek out medical information and manage their health more actively (Oh et al., 2005). This shift towards greater patient autonomy is often lauded for its potential to empower individuals by giving them better access to health information (Berkman et al., 2010; Norman & Skinner, 2006). The concept of e-health literacy, defined as the ability to search, find, understand, and evaluate health information from electronic sources (Norman & Skinner, 2006) has become a crucial factor in determining how individuals interact with digital health resources and engage with their healthcare providers.

The rise of e-health literacy has coincided with broader changes in healthcare communication, wherein patients are increasingly encouraged to take a more active role in their health management. Scholars argue that this democratization of health information contributes to more informed

decision-making and greater patient engagement in healthcare processes (Bodie & Dutta, 2008; Neter & Brainin, 2012). In this context, e-health literacy has been hailed as a vital skill, particularly in an era of increasing digital dependency and expanding online health services (Tennant et al., 2015).

On the positive side, e-health literacy empowers individuals by ensuring that they have the tools to seek information and reach more informed health decisions (Berkman et al., 2010; Norman & Skinner, 2006). Research shows that individuals who have higher levels of e-health literacy are prone to be more active in preventive health behaviors; for instance, maintaining physical activity and making healthier dietary choices (Kim et al., 2023). These individuals are also more likely to effectively manage chronic conditions, resulting in improved overall health outcomes (Mitsutake et al., 2016). Moreover, higher digital health literacy has been interrelated to better health outcomes in the fields of psychosocial, chronic disease management, and physical health (Yuen et al., 2024).

However, the benefits of e-health literacy are not without their drawbacks. As individuals become more adept at navigating digital health platforms, they may begin to question or even challenge the expertise of healthcare professionals, potentially undermining the trust necessary for effective patient-provider relationships (Bova et al., 2012; Greene et al., 2011). This issue is exacerbated by the rise of self-sourced health information, which may not always be accurate or reliable. The Dunning-Kruger effect describes how individuals with limited knowledge tend to overestimate their competence, which contributes to a phenomenon in which patients trust their online research more than the advice of trained medical professionals (Dunning, 2011). Moreover, excessive reliance on digital health information can lead to cyberchondria, a condition characterized by health anxiety and unnecessary medical consultations, driven by over-searching for information online (Aslantaş & Altuntaş, 2023). This increasing exposure to misinformation can further erode trust in healthcare providers and complicate decision-making processes (Lewandowsky et al., 2017).

The relationship between e-health literacy and trust in healthcare providers is particularly complex. While e-health literacy can promote autonomy and informed decision-making, it also introduces risks related to the proliferation of misinformation and the potential for patients to place undue trust in unreliable sources. As healthcare becomes more digitalized, the rise of misinformation and disinformation becomes a growing concern. Patients who are exposed to conflicting or inaccurate health information online may become skeptical of their healthcare providers, undermining the physician-patient relationship (Greene et al., 2011; Lewandowsky et al., 2017). This erosion of trust is a critical issue in modern healthcare, where effective treatment and patient adherence often rely on a solid relationship between patients and medical professionals.

Additionally, demographic factors such as age, education, and socioeconomic status play a significant role in how e-health literacy affects trust in physicians. Younger, more educated individuals tend to have higher e-health literacy but may also be more prone to skepticism towards healthcare professionals and the medical establishment (Cline & Haynes, 2001; Estacio et al., 2019). In contrast, older individuals or those with lower e-health literacy levels generally tend to place greater trust in their healthcare professionals, even if they have limited access to or understanding of digital health information (Bonds et al., 2004).

This study fills a critical gap in the literature by investigating the impact of digitalization, particularly e-health literacy, on patients' trust in physicians. Using a quantitative approach, data were collected from 349 participants across various demographic groups to explore the relationship between e-health literacy and trust in physicians. Analyzing this relationship in the context of demographic factors such as age, education, and income, this study provides insights into how access to digital health information affects patients' trust in medical professionals, based on data collected from 349 survey participants.

The findings of this study make a contribution to the broader discourse on the social impacts of digitalization by providing empirical evidence that higher e-health literacy can negatively affect trust in physicians. Specifically, the study highlights that demographic factors, such as generational differences, moderate this relationship. In addition, the findings show that e-health literacy, but not trust in physicians, significantly differentiates according to gender, while both e-health literacy and trust in physicians significantly differentiate according to generations, income, and education level.

Literature Review and Hypothesis Development

E-Health Literacy: Conceptual Framework and Demographic Variations

E-health literacy has become an inseparable part of modern healthcare, influencing how individuals access and use health information from digital sources (Norman & Skinner, 2006). This concept describes individuals' ability to search, reach, understand, and utilize electronic sources. E-health literacy is critical in empowering patients to take active roles in their healthcare decisions (Ünal et al., 2022). This skill is especially significant as the availability of online health information grows, providing both opportunities and challenges for patient engagement (Floridi, 2014; Rasiah et al., 2020).

However, research shows that the distributiveness of e-health literacy is not on an equal basis across populations. Several demographic factors, such as age, education, and income, significantly influence individuals' ability to use digital health tools effectively (Akbolat et al., 2016; Norman & Skinner, 2006). Generational differences are particularly prominent, with younger individuals, such as Millennials and Generation Z, demonstrating higher e-health literacy levels than older generations like Baby Boomers (Çavmak, 2023; Tennant et al., 2015). This generational divide could be understood considering the greater familiarity with digital technologies among younger cohorts (Floridi, 2014; Sadhu et al., 2019).

Apart from age, income disparities are a key factor in determining access to digital health resources. Higher-income individuals tend to have greater access to technology and the internet, allowing them to navigate health platforms more effectively (Azlan et al., 2021; Estacio et al., 2019). Lower-income groups, in contrast, face barriers to accessing reliable online health information, further exacerbating the digital divide (Birru et al., 2004; Estacio et al., 2019). Educational background also significantly affects e-health literacy levels, as those with higher education levels are more adept at evaluating the credibility of online health information (Chen et al., 2018; Coşkun & Bebiş, 2015).

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In Türkiye, studies have found that individuals with higher education are more proficient in e-health literacy, contributing to more informed healthcare decisions (Gökçe & Yeşil, 2023; Mansur & Ciğerci, 2022).

Trust in Physicians: Demographic Influences

Trust in physicians remains a critical factor in the patient-physician relationship, affecting patient satisfaction, treatment adherence, and health outcomes (Birkhäuer et al., 2017; Rasiah et al., 2020). Despite its importance, trust levels can vary widely depending on demographic factors such as age, education, and income. Research shows that older generations, such as Baby Boomers, typically have higher trust in physicians compared to younger generations, who are more likely to question medical advice (Chen et al., 2018; Usta & Korkmaz, 2020).

In Türkiye, studies have confirmed that younger individuals often exhibit lower levels of trust in physicians due to their greater reliance on online health information, which may sometimes conflict with professional medical advice (Deniz & Çimen, 2020). In contrast, older adults tend to have more traditional views of healthcare and are less likely to question their physicians (Akbolat & Bildik, 2024; Mansur & Ciğerci, 2022).

Income is another elemental factor influencing trust in physicians. Individuals with lower income levels often place more trust in physicians, as they have fewer alternatives for healthcare advice and rely heavily on professional guidance (Estacio et al., 2019; Shiferaw et al., 2020). In contrast, higher-income individuals, who have greater access to digital health resources, may exhibit more skepticism toward physicians (Bertram et al., 2021). Furthermore, education plays a critical role, with highly educated individuals more likely to critically assess the advice they receive from physicians, leading to reduced trust in some cases (Tsai et al., 2018).

The Relationship Between E-Health Literacy and Trust in Physicians

E-health literacy and trust in physicians interact complexly. On the one hand, individuals who have higher e-health literacy are more skilled at understanding medical knowledge, enabling more informed decision-making and fostering strong communication with healthcare providers (Chen et al., 2018; Norman & Skinner, 2006). This situation can lead to greater trust in physicians, as patients feel more confident in their healthcare choices (Mansur & Ciğerci, 2022).

On the other hand, higher e-health literacy may also result in increased skepticism toward physicians, particularly when online health information conflicts with professional medical advice (Akbolat et al., 2016; Floridi, 2014). This dynamic is particularly distinct in Türkiye, where patients with high e-health literacy are more likely to challenge their physicians based on information searched from digital health sources (Gökçe & Yeşil, 2023; Rasiah et al., 2020). Furthermore, disseminating misinformation online can erode trust because patients could be exposed to inaccurate or contradictory health advice (Kaya & Eke, 2023; Lewandowsky et al., 2017).

Studies show that while e-health literacy empowers patients to take control of their healthcare decisions, it can also introduce tensions in the patient-physician relationship, particularly when digital information undermines traditional medical authority (Usta & Korkmaz, 2020). This issue is especially relevant as more individuals rely on digital platforms for health information, making it critical for physicians to engage with digitally literate patients in new ways (Floridi, 2014; van Velsen et al., 2021).

The hypotheses below are proposed based on the reviewed literature:

H1: E-health literacy negatively affects trust in physicians.

H2: Gender moderates the effect of E-health literacy on Trust in Physicians.

H3: Generation moderates the effect of E-health literacy on Trust in Physicians.

H4: Income moderates the effect of E-health literacy on Trust in Physicians.

H5: Education moderates the effect of E-health literacy on Trust in Physicians.

H6: Problem with Physicians moderates the effect of E-health literacy on Trust in Physicians.

Methodology

In this research, a quantitative approach was used to establish the effect of health literacy on trust in physicians. Accordingly, path analysis was used to examine the relationship between the two phenomena. Ethical approval for the study was obtained from the Ethics Committee of Süleyman Demirel University, with the decision dated August 5, 2024, and numbered E-87432956.

Research Model

The model of this study was developed based on the epistemological realities discussed within the context of digitalization, and it was informed by existing literature on e-health literacy and trust in physicians.

Figure 1
Research Model
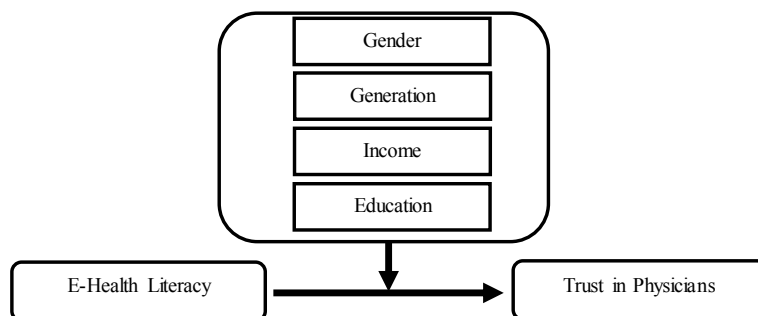
Findings and Analysis

As illustrated in Figure 1, e-health literacy and trust in physicians are defined as key variables to understand the impact of easy access to information brought about by digitalization on communication. Additionally, variables such as gender, education, generational differences, and household income are incorporated into the model to assess whether these factors are moderators in the related phenomena. The model considers five main hypotheses to determine the role of these variables.

Population & Sample

The population of this study consists of individuals from the X, Y, Z, and Baby Boomers generations residing in Türkiye. The sample includes a total of 349 participants from seven different regions of Türkiye, but a convenience sampling technique was used to determine the sample. The distribution of the sample is shown in Table 1 below.

Table 1

The Distribution of the Sample

Region	Est. Pop. Ratio	Calculation	N
Marmara Region	%30,27	349 * 0.3027 =105,642	≈106
Black Sea Region	%9,67	349 * 0.0967 = 33,748	≈ 34
Aegean Region	%12,64	349 * 0.1264 = 44,113	≈ 44
Central Anatolia Region	%15,72	349 * 0.1572 = 54,862	≈ 55
Eastern Anatolia Region	%7,57	349 * 0.0757 = 26,419	≈ 26
Southeastern Anatolia Region	%10,52	349 * 0.1052 = 36,714	≈ 37
Mediterranean region	%13,62	349 * 0.1362 = 47,533	≈ 47
Total	%100	349 * 1 = 349	349

*** Estimated Population Ratio has been calculated by using data from the Turkish Statistical Institute, Address Based Population Registration System, 2024

Data Collection

A questionnaire consisting of 21 questions was used in the research process. 8 of these questions aim to collect information about the demographic characteristics and internet usage habits of the participants. Demographic questions were selected by considering the hypotheses and include information such as age, gender, income and education of the participants. The questions on internet usage habits included questions about the participants' daily internet use and whether they did health-related research on the Internet. The questions on Internet usage habits were used as warm-up questions. The remaining 13 questions were derived from the E-Health Literacy (Coşkun & Bebiş, 2015) and Trust in Physicians (Dugan et al., 2005) scales used in this study.

E-health literacy scale has been designed to measure how adults read and interpret health information, was developed by Norman and Skinner in 2006. It was later adapted into Turkish by Coşkun and Bebiş (2015) in their study titled "Adolesanlarda E-sağlık Okuryazarlığı Ölçeği: Türkçe Geçerlik ve Güvenirlik Çalışması" [Psychometric evaluation of a Turkish version of the e-health literacy scale (e-heals) in adolescent]. The internal consistency of the Turkish version was found to be 0.78, indicating that the scale is reliable.

On the other hand, Trust in Physicians (TiP) Scale is a short-form scale developed by Wake Forest University to measure trust in healthcare. This 5-item Likert scale is a shortened version of the original 11-item scale, chosen to enhance the accuracy of responses by reducing the overall number of questions. The short-form version has demonstrated reliability, with a Cronbach's Alpha of 0.77, based on a study conducted with a sample of 502 adults in the United States (Dugan et al., 2005). After translating the 5-item short form into Turkish, a back-translation was performed. The appropriateness of the translation was evaluated by an expert committee, including an associate professor in health management, a professor of psychology, and a translator different from those who conducted the initial translation. After expert approval, the scale was pilot-tested with a group of 54 participants, and the reliability was confirmed with a Cronbach's Alpha of 0.84.

Data Analysis and Measures

The data in this study has been collected from 349 participants between April 5 and September 16, 2024, by using online and face-to-face techniques. In the selection of the participants, a balanced distribution in terms of generations was tried to be ensured. While 105, 119, and 105 people from generations X, Y, and Z, respectively, only 20 people from the baby boomers generation participated in the study. A regional population quota was applied when selecting participants. The data were subsequently entered into the SPSS 29 software for frequency and percentage analysis, reliability values, normal distribution values, relationships between variables, calculation, and analysis of skewness and kurtosis values. Also, AMOS 22 program was used to examine the hypotheses of this research along with confirmatory factor analysis and structural equation modeling..

Demographic Findings

51% of the participants were female (n=178), and 49% were male (n=171). In terms of age distribution, 30.1% (n=105) were from Generation Z, 34.1% (n=119) were from Generation Y, 30.1% (n=105) were from Generation X, and 5.7% (n=20) were Baby Boomers. Regarding education, 8.3% (n=29) had completed primary school, 4.6% (n=16) middle school, 15.8% (n=55) high school, 56.7% (n=198) university, and 14.6% (n=51) held postgraduate degrees. In terms of household income (based on April 2024 data), 16.9% (n=59) of participants were below the poverty line, 53.3% (n=186) were between the poverty and hunger lines, and 29.8% (n=104) were above the poverty line.

Validity and Reliability Analyses of the Scales

Confirmatory Factor Analysis

Before conducting Confirmatory Factor Analysis (CFA) for both the Trust in Physicians Scale and the E-Health Literacy Scale, skewness and kurtosis values were examined to assess whether the data followed a normal distribution. The values were found within the acceptable range (+1, – 1), indicating that the data were normally distributed (Hair et al., 2014) as shown in Table 2.

Table 2

Descriptive Statistics of Measurement Instruments

	N	Min.	Max.	X	SD	Skewness	Kurtosis
Trust in Physician (TiP)	349	5	25	15.5	4.14	-.006	-.355
E-Health Literacy (EHL)	349	8	40	26.4	7.22	-.594	-.453

Once normal distribution was confirmed, CFA was conducted for both scales using the AMOS 22 software, with detailed results presented in Figure 2 and Figure 3.
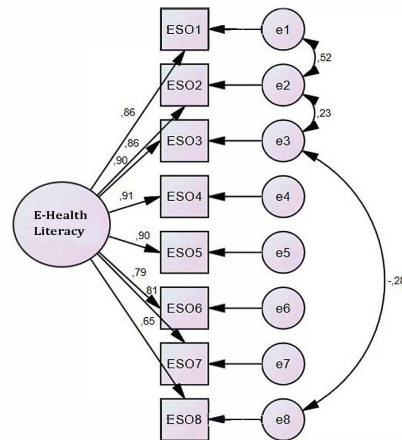
Figure 2

Trust in Physicians Scale CFA Model
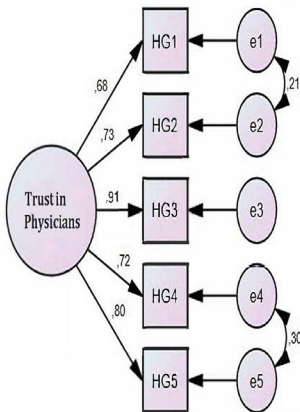
Figure 3

E-Health Literacy Scale CFA Model

The factor loadings for the Trust in Physicians Scale ranged between 0.68 and 0.91, while for the E-Health Literacy Scale, they ranged between 0.65 and 0.91. Factor loadings above 0.50 are considered an important criterion for CFA (Hair et al., 2010).

To ensure the validity of measurement instruments used in this study goodness-of-fit indices were examined as part of the CFA. As shown in Table 1, both Trust in Physicians and E-Health Literacy scales displayed acceptable fit indices. Covariances were established between items 1-2 and

4-5 for the Trust in Physicians Scale, and between items 1-2, 2-3, and 3-8 for the E-Health Literacy Scale to improve the goodness-of-fit values.

Table 3

Goodness-of-Fit Indices of Scales

			Fit Indices of Structural Models	
Fit Indices	Good Fit Indices	Acceptable Fit Indices	Trust in Physician	E-Health Literacy
X2 /sd	≤3	≤4-5	2.225	2.788
RMSEA	≤0.05	0.06-0.08	.059	0.072
NFI	≥0.95	0.94-0.90	.993	.983
NNFI=TLI	≥0.95	0.94-0.90	.987	.981
CFI	≥0.97	≥0.95	.996	.989
GFI	≥0.90	0.89-0.85	.992	.966
AGFI	≥0.90	0.89-0.85	.962	.927
IFI	≥0.95	0.94-0.90	.996	.989
RMR	≤0.05	0.06-0.08	.013	.025

As Table 3 shows, the goodness-of-fit indices for both scales indicated that, except for the RMSEA values, the scales demonstrated a good fit. The RMSEA values, however, fell within the acceptable range.

Convergent and Discriminant Validity

Following the structural validity analysis using CFA, convergent and discriminant validity were examined along with Cronbach's Alpha values. Cronbach's Alpha value is .887 for the Trust in Physicians scale and .949 for E-health Literacy. It is understood that all scales are above the required value (0.70) (Hair et al., 2014; Uzunsakal & Yıldız, 2018). Another reliability indicator for measurement tools is a CR value higher than 0.70 (Fornell & Larcker, 1981; Hair et al., 2014) The calculated CR value is .881 for the trust in physicians scale and .949 for the e-health literacy scale. These results confirm that all scales are reliable.

In addition to CFA, convergent validity and discriminant validity were also tested for construct validity of the measurement instruments. To ensure convergent validity, the AVE value should be higher than 0.50 and lower than the CR value (Fornell & Larcker, 1981; Hair et al., 2014; Yaşlıoğlu, 2017). When the data in Table 3 are analyzed, it is seen that the AVE value for both scales is above 0.50 and lower than the CR value. Hence convergent validity is ensured.

Fornell-Larcker Criterion (Fornell & Larcker, 1981) and heterotrait-monotrait ratio of correlations (HTMT) values introduced by Henseler, Ringle, and Sarstedt (2015) were used for discriminant validity assessment. According to the Fornell-Larcker criterion, the square root of the AVE for each factor should be higher than the correlations between factors to ensure divergent validity (Fornell & Larcker, 1981). The findings in Table 4 show that the square root of AVE is higher than the correlation between factors. HTMT Online Calculator was used to determine the HTMT

value (https://www.henseler.com/htmt.html). The HTMT value below the threshold value of 0.85 is an important indicator for discriminant validity (Henseler et al., 2015). These results indicate that measurement instruments have acceptable discriminant validity.

Table 4

*Cronbach's Alpha, CR, AVE, √AVE, HTMT and Interfactor Correlation Values of Measurement Instruments*

Scale	Trust in Physicians	E-Health Literacy	α	AVE	CR
Trust in Physician (TiP)	**0,774***		.887	.599	.881
E-Health Literacy (EHL)	-0,428	**0,838***	.949	.702	.949
HTMT Value	0.43336959				
	E-Health Literacy	Trust in Physicians			

* Bold values represent √AVE value of the related scale.

Structural Equation Model and Hypothesis Testing

Figure 4

Path Analysis Model of the Relationship between E-Health Literacy and Trust in Physicians
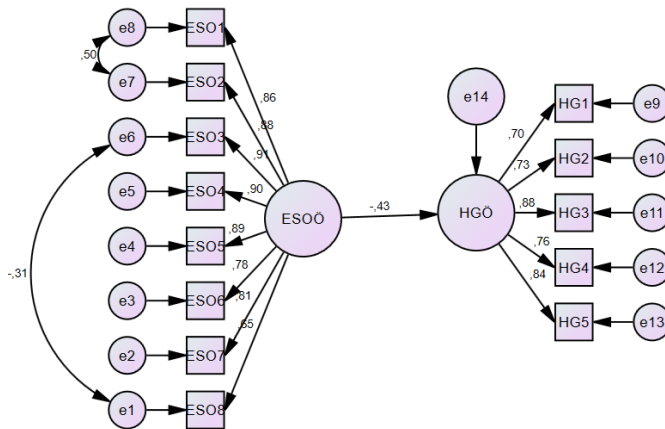
The path analysis, designed to explore whether E-Health Literacy has any effect on Trust in Physicians, is presented in Figure 4.

Table 5

Results of the Impact of E-Health Literacy on Trust in Physicians

Structural Relation	β	CR	R²	p	Hypothesis	Result
ESO HG	-.43	-6,672	.185	***	H3	Accepted
Fit Indices						
χ2/df: 3.050; RMSEA: .77; GFI: .924; CFI: .966; NFI: .951; SRMR: .055						

As Table 5 shows, the path analysis indicates that E-Health Literacy has a significant negative effect on Trust in Physicians. This suggests that as individuals' e-health literacy increases, their trust in physicians decreases. These findings confirm the hypothesis H1: E-Health Literacy has a significant negative impact on Trust in Physicians.

Test of Moderation Effects

To determine whether gender (female-male) has a moderating effect on the effect of e-health literacy on trust in physicians, moderator analysis was conducted with the structural equation model. In this context, the standardized beta (β) values obtained according to gender groups were compared. The findings in Table 6 show that the gender variable does not have a moderating effect on the effect of e-health literacy on trust in physicians (CR=1,408, p>0.05). The effect of e-health literacy on trust in physicians was found to be significant for both women and men (p<0.001). This shows that the effect of e-health literacy on trust in physicians is similar for women and men. In this respect, gender does not have a moderating effect on the relationship. Therefore, the hypothesis H2: Gender moderates the effect of E-health literacy on Trust in Physicians is rejected.

Table 6

Moderator Effect (Gender)

Hypothesis-2	Gender					
H2: Gender moderates E-Health Literacy – —> Trust in Physicians	Female (n=178)			Male (n=171)		
	β	CR	p	β	CR	p
	-.457	-5.135	<.001	-.389	-4.232	<.001
Result: Rejected						

Within the scope of the hypothesis H3, it was analyzed whether the generation variable significantly affects the relationship between E-Health Literacy and Physician Trust as a moderator variable. Structural modeling analyses revealed that the generation variable plays a moderating role in this relationship, as seen in Table 7. There is a significant difference between Generation X and Generation Y (CR = – 4.776, p < .05). This indicates that Generation X's trust in physicians decreased significantly with increasing e-health literacy, but this relationship was not found to be significant in Generation Y. The difference between Generation Z and Generation X is not statistically significant (CR = – 1.332, p > .05), indicating that the relationship between these two generations is largely similar. The difference between Generation Y and Generation Z is statistically significant (CR = 2.002, p = .045), which supports the existence of intergenerational differences. These findings confirm the hypothesis H3: Generation moderates the effect of E-health literacy on Trust in Physicians.

Table 7

Moderator Effect (Generation)

Hypotheses-3	Generation								
H3: Generation moderates E-Health Literacy – —> Trust in Physicians	X Gen. (n=105)			Y Gen. (n=119)			Z Gen. (n=105)		
	β	CR	p	β	CR	p	β	CR	p
	-.544	-4.622	<.001	.170	-1.542	.123	-.236	-2.002	.045
Result: Supported									

Regarding the fourth hypothesis, it was examined whether the household income variable has a moderating effect on the effect of E-Health Literacy on Trust in Physicians. Income level was categorized into three different categories: below the hunger threshold, below the poverty threshold, and above the poverty threshold. The findings in Table 8 show that as the e-health literacy levels of individuals below the hunger and poverty threshold increase, their trust in physicians decreases, while this relationship is weaker for individuals whose income is above the poverty threshold.

However, structural modeling analyses revealed that the household income variable does not play a moderating role. Because there is not a substantial difference between the low-income and the high-income groups (CR = .717, p > .05). The difference between the low income group and the middle income group is also not statistically significant (CR = – .316, p > .05). There is also no significant difference between the middle income and high income groups (CR = 1.396, p > .05). Hence the hypothesis H4: Income moderates the effect of E-health literacy on Trust in Physicians was rejected.

Table 8

Moderator Effect (Household Income)

Hypotheses-4	Household Income								
H4: Household Income moderates E-Health Literacy – —> Trust in Physicians	Below Hunger Threshold. (n=59)			Below Poverty Threshold (n=186)			Above Poverty Threshold (n=104)		
	β	CR	p	β	CR	p	β	CR	p
	-.388	-2.445	<.014	-.489	-.5.181	<.001	-.243	-2.239	<.025
Result: Rejected									

For Hypothesis 5, the results show that the relationship is significant and negative for individuals with a maximum of a high school education level (β = – 0.598, CR = – 4.626, p < 0.001). On the other hand, the relationship does not reach a statistically significant level for individuals with a bachelor's degree and above (β = – 0.136, CR = – 1.900, p = 0.057).

The difference between the CR values (2.862) indicates that the moderating effect of education level is significant. This finding reveals that the effect of e-health literacy on trust in physicians varies depending on the educational level of individuals, as seen Table 9. While this effect is stronger and more negative for individuals with lower education levels, its effect weakens and becomes statistically insignificant for individuals with higher education levels. As a result, hypothesis H5 is supported,

and it is confirmed that education level is an important moderator for the effects of E-Health Literacy on Trust in Physicians.

Table 9

Moderator Effect (Education)

Hypotheses-5	Education					
H5 Education moderates E-Health Literacy – —> Trust in Physicians	High School & Below (n=100)			Undergraduate & Above (n=249)		
	β	CR	p	β	CR	p
	-.598	-4.626	<.001	-.136	-1.900	.057
Result: Supported						

The results presented in Table 10 show that problems with physicians significantly affect the relationship between e-health literacy and trust in physicians. Considering the status of having problems with physicians as a moderator variable, the effect of e-health literacy on trust in physicians in the "Yes" group (n=97) was found to be statistically insignificant ($β = 0.102$, $CR = 0.896$, $p = 0.370$). On the other hand, this relationship was significant and negative in the "No" group (n=252) ($β = -0.604$, $CR = -7.575$, $p < 0.001$).

The critical ratio (CR) difference between the groups was calculated as -4.269, which is above the threshold value in the literature, indicating the presence of a moderator effect. This finding indicates that e-health literacy does not have a significant effect on trust in physicians among individuals who have problems with physicians, but this effect is strong and negative among individuals who do not have problems. As a result, hypothesis H6 is supported.

Table 10

Moderator Effect (Problem with Physicians)

Hypotheses-6	Problem					
H6 Problem with Physicians moderates E-Health Literacy – —> Trust in Physicians	Yes (n=97)			No (n=252)		
	β	CR	p	β	CR	p
	.102	.896	0.370	-.604	-7.575	<.001
Result: Supported						

Discussion

The aims of this study is to analyze the impact of digitalization and e-health literacy (EHL) on individuals' trust in physicians and to unveil how this relationship is shaped by demographic variables. The findings revealed that e-health literacy negatively affects trust in physicians and that educational level, generational differences and problem with physicians play an important role in this effect.

One of the main findings of the study is that e-health literacy significantly decreases trust in physicians ($β=-.43$, $p<.001$). This finding is consistent with previous studies (Norman & Skinner,

2006; Tennant et al., 2015) that emphasize the transformative impact of digitalization on healthcare. Although health information available online allows individuals to have more control over their health (Bodie & Dutta, 2008), it also causes them to question the expertise of physicians and turn to alternative sources of information (Greene et al., 2011).

This can also be explained by the Dunning-Kruger effect (Dunning, 2011). Individuals with superficial knowledge may perceive their competencies more than their actual capacity, which may reduce trust in the physician. In addition, the risk of being exposed to false and biased information stands out as a factor that damages the patient-physician relationship (Lewandowsky et al., 2017)

The findings showed that there were significant differences between generations. While trust in physicians decreased significantly as e-health literacy increased in Generation X ($p<.001$), this effect was lower for Generations Y and Z. This result is in line with studies showing that younger generations who interact more with digital platforms have increased trust in alternative health resources (Akbolat et al., 2016; Çavmak, 2023).

Education level was also a determining factor, and it was observed that the trust in physicians decreased more as the e-health literacy of individuals with high school and below education level increased ($p<.001$). On the other hand, this relationship is not statistically significant considering undergraduate and higher education individuals ($p=0.057$). This may be explained by the fact that educated individuals have better skills in evaluating online health information (Coşkun & Bebiş, 2015; Estacio et al., 2019).

In addition to these demographic variables, it is seen that the problem experienced with the physician has a moderating role in the effect of e-health literacy on trust in physicians. The emergence of such a result can be said to be due to the fact that the problem with the physician decreases trust in the physician regardless of e-health literacy.

The study showed that income level and gender were not significant moderators of the effect of e-health literacy on trust in physicians. Although trust in physicians decreases as e-health literacy increases in low – and middle-income groups, further studies are needed due to cross-country differences and variability in access to the health system (Bertram et al., 2021; Shiferaw et al., 2020).

Conclusion

The digitalization process has created radical transformations in terms of information production, sharing, and consumption; it reshapes the relationship that individuals establish with traditional authority structures by changing the way they access information (Carr, 2020; Floridi, 2014). In this context, in our study, we tried to show whether the epistemological discussions on digitalization exist on the ontological plane through the relationship between e-health literacy and trust in physicians. Findings show that individuals' perceptions of health-related autonomy have increased with easier access to information, but this may erode trust in medical authority (Metzger & Flanagin, 2013; Nichols, 2024).

Epistemologically, digitalization has increased individuals' capacity to access information and led them to question traditional hierarchies of knowledge (Goldman, 1999). This has enabled individuals to take a more active role in the process of acquiring health information, but it has also tested their competence in evaluating the accuracy of information (Kuklinski et al., 2000). This phenomenon, called the "misinformation paradox" in the literature, suggests that individuals may become more vulnerable to cognitive biases and misdirection as they access more information (Lewandowsky et al., 2012). In line with this, the findings of our study suggest that even individuals with high e-health literacy may tend to deviate from expert knowledge amid the abundance of information on digital platforms (Chou et al., 2009; Swire-Thompson & Lazer, 2020).

On the ontological plane, the processes by which individuals acquire health information digitally require a redefinition of trust in specialized institutions (Giddens, 2023). While traditionally, the physician-patient relationship is shaped within the framework of an information hierarchy based on the authority of the physician (Freidson, 2001). Digitalization transforms this relationship into a more horizontal information exchange format (Hardey, 1999). As seen in our study, there is evidence that as individuals' level of access to health information increases, their traditional trust in physicians decreases. One of the main reasons for this is that the information that individuals acquire functions as a means of empowerment against authority (Lupton, 2013). However, it is also observed that this perception of empowerment does not always translate into rational health decisions and sometimes results in "epistemic arrogance" (Nichols, 2024).

At this point, the "balance between knowledge and trust" emphasized in the health communication literature is of critical importance (Eysenbach, 2008). The results of our study show that individuals with high levels of e-health literacy can make more informed assessments of health information, but at the same time tend to question the necessity of expert knowledge. Therefore, while taking advantage of the advantages offered by digitalization in health communication, strategies should be developed to make individuals resistant to misinformation and maintain trust in physicians (Van der Meer & Jin, 2020).

In conclusion, at the epistemological level, digitalization has increased individuals' access to information, making them more active decision-makers in the field of health. However, this has also brought new problems regarding the legitimacy and reliability of information. Ontologically, the increase in individuals' e-health literacy levels leads to a transformation of trust in physicians, which in turn reshapes the dynamics between health authorities and individuals. Accordingly, it is concluded that the opportunities brought by digitalization in health communication should be carefully considered in the context of the risk of misinformation and the loss of authority of specialty institutions.

Limitations and Recommendations for Future Research

There are some limitations in this research. Although the sample is diverse it does not represent the whole population of Türkiye, and this limits the findings to generalize. Furthermore, the relationship between E-Health Literacy and Trust in Physicians was examined as only one facet of

the broader impact of digitalization on communication and trust. Besides that, because the data collection is cross-sectional in nature, it constrains the ability to establish long-term conclusions.

As digitalization continues to bring about transformative changes in communication, future studies should explore its broader impact on trust in different professional domains. Researchers could also investigate how E-Health Literacy affects trust in other healthcare professionals or examine the psychological impacts of enhanced E-Health Literacy on individuals' perceptions of their health-related competence. Future studies should use larger, more representative samples and consider longitudinal designs to improve external validity. Additionally, research should extend beyond healthcare to explore the impacts of digital literacy on communication in other sectors, providing a more comprehensive understanding of the effects of digitalization.

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References

Akbolat, M., & Bildik, R. (2024). Algılanan hizmet kalitesinin hekime güvene etkisinde hasta deneyiminin aracı rolü [The effect of perceived service quality on trust in physician and the mediating role of patient experience]. *Sakarya Üniversitesi İşletme Enstitüsü Dergisi*, *6*(1), 71-82. https://doi.org/10.47542/sauied.1481908

Akbolat, M., Kahraman, G., Erigüç, G., & Sağlam, H. (2016). Sağlık okuryazarlığı hasta-hekim ilişkisini etkiler mi?: Sakarya ilinde bir araştırma [Does patient-physician relationship affect health literacy?: A research in Sakarya province]. *TAF Preventive Medicine Bulletin*, *15*(4), 354-362. https://doi.org/10.5455/pmb.1-145.500.8901

Aslantaş, A. H. B., & Altuntaş, M. (2023). Siberkondrinin problemli internet kullanımı ve e-sağlık okuryazarlığı ile olası ilişkisi [Cyberchondria's possible relationship with problematic ınternet use and ehealth

literacy]. *Journal of Academic Research in Medicine, 13*(2), 63-69. https://doi.org/10.4274/jarem.galenos.2023.91885

Azlan, A. A., Hamzah, M. R., Tham, J. S., Ayub, S. H., Ahmad, A. L., & Mohamad, E. (2021). Associations between health literacy and sociodemographic factors: A cross-sectional study in Malaysia utilising the HLS-M-Q18. *International Journal of Environmental Research and Public Health*, *18*(9), 4860. https://doi.org/10.3390/ijerph18094860

Berkman, N. D., Davis, T. C., & McCormack, L. (2010). Health literacy: What is it? *Journal of Health Communication*, *15*(S2), 9-19.

Bertram, M., Brandt, U. S., Hansen, R. K., & Svendsen, G. T. (2021). Does higher health literacy lead to higher trust in public hospitals? *International Journal for Equity in Health*, *20*, 1-15.

Birkhäuer, J., Gaab, J., Kossowsky, J., Hasler, S., Krummenacher, P., Werner, C., & Gerger, H. (2017). Trust in the health care professional and health outcome: A meta-analysis. *PloS One*, *12*(2), e0170988. https://doi.org/10.1371/journal.pone.0170988

Birru, M. S., Monaco, V. M., Charles, L., Drew, H., Njie, V., Bierria, T., Detlefsen, E., & Steinman, R. A. (2004). Internet usage by low-literacy adults seeking health information: an observational analysis. *Journal of Medical Internet Research*, *6*(3), e25. https://doi.org/10.2196/jmir.6.3.e25

Bodie, G. D., & Dutta, M. J. (2008). Understanding health literacy for strategic health marketing: eHealth literacy, health disparities, and the digital divide. *Health Marketing Quarterly*, *25*(1-2), 175-203. https://doi.org/10.1080/073.596.80802126301

Bonds, D. E., Foley, K. L., Dugan, E., Hall, M. A., & Extrom, P. (2004). An exploration of patients' trust in physicians in training. *Journal of Health Care for the Poor and Underserved*, *15*(2), 294-306. https://doi.org/10.1353/hpu.2004.0018

Bova, C., Route, P. S., Fennie, K., Ettinger, W., Manchester, G. W., & Weinstein, B. (2012). Measuring patient–provider trust in a primary care population: Refinement of the health care relationship trust scale. *Research In Nursing & Health*, *35*(4), 397-408. https://doi.org/10.1002/nur.21484

Carr, N. (2020). *The shallows: What the internet is doing to our brains*. WW Norton & Company.

Castells, M. (2010). *The rise of the network society: The information age: Economy, society, and culture*. John Wiley & Sons.

Chen, X., Hay, J. L., Waters, E. A., Kiviniemi, M. T., Biddle, C., Schofield, E., Li, Y., Kaphingst, K., & Orom, H. (2018). Health literacy and use and trust in health information. *Journal of Health Communication*, *23*(8), 724-734. https://doi.org/10.1080/10810.730.2018.1511658

Chou, W.-y. S., Hunt, Y. M., Beckjord, E. B., Moser, R. P., & Hesse, B. W. (2009). Social media use in the United States: Implications for health communication. *Journal of Medical Internet Research*, *11*(4), e1249. https://doi.org/10.2196/jmir.1249

Cline, R. J., & Haynes, K. M. (2001). Consumer health information seeking on the internet: The state of the art. *Health Education Research*, *16*(6), 671-692. https://doi.org/10.1093/her/16.6.671

Coşkun, S., & Bebiş, H. (2015). Adolesanlarda e-sağlık okuryazarlığı ölçeği: Türkçe geçerlik ve güvenirlik çalışması [Psychometric evaluation of a Turkish version of the e-health literacy scale (e-heals) in adolescent]. *Gülhane Tıp Dergisi*, *57*(4), 378-384. https://gulhanemedj.org/pdf/37eae217-e8b5-4f55-976f-35df98003e83/articles/gulhane.157832/GMJ-57-378-En.pdf

Çavmak, Ş. (2023). E-sağlık okuryazarlığı ile hastane tercihinde sosyal medya kullaniminin ilişkisi [The relationshıp between e-health literacy and social media use in hospital preference]. *İşletme Bilimi Dergisi*, *11*(1), 79-90. https://doi.org/10.22139/jobs.1205170

Deniz, S., & Çimen, M. (2020). Hekimlere güven düzeyinin belirlenmesine yönelik bir araştırma [A research on determining the level of trust in physicians]. *Celal Bayar Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*, *8*(1), 10-16. https://doi.org/10.34087/cbusbed.656592

Dugan, E., Trachtenberg, F., & Hall, M. A. (2005). Development of abbreviated measures to assess patient trust in a physician, a health insurer, and the medical profession. *BMC Health Services Research*, *5*, 1-7. https://doi.org/10.1186/1472-6963-5-64

Dunning, D. (2011). The Dunning-Kruger effect: On being ignorant of one's own ignorance. In J. M. Olson & M. P. Zanna (Eds.), *Advances in experimental social psychology* (pp. 247–296). Academic Press. https://doi.org/10.1016/B978-0-12-385522-0.00005-6

Estacio, E. V., Whittle, R., & Protheroe, J. (2019). The digital divide: Examining socio-demographic factors associated with health literacy, access, and use of internet to seek health information. *Journal of Health Psychology*, *24*(12), 1668-1675. https://doi.org/10.1177/135.910.5317695429

Eysenbach, G. (2008). Credibility of health information and digital media: New perspectives and implications for youth. In M. J. Metzger, A. J. Flanagin, John D. & C. T. MacArthur (Eds.), *Digital media, youth, and credibility* (pp. 123–154). The MIT Press. https://doi.org/10.1162/dmal.978.026.2562324.123

Floridi, L. (2014). *The fourth revolution: How the infosphere is reshaping human reality.* Oxford Universtiy Press.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.2307/3151312

Freidson, E. (2001). *Professionalism, the third logic: On the practice of knowledge.* University of Chicago Press.

Giddens, A. (2023). Modernity and self-identity. In W. Longhofer & D. Winchester (Eds.), *Social theory rewired* (pp. 477–484). Routledge. https://doi.org/10.4324/978.100.3320609

Goldman, A. I. (1999). *Knowledge in a social world*. Oxford University Press.

Gökçe, D., & Yeşil, E. (2023). Lise öğrencilerinin sağlıklı beslenmeye ilişkin tutumlarıyla e-sağlık okuryazarlığı düzeyleri arasındaki ilişkinin değerlendirilmesi [Evaluating of the relationship between high school student's attitudes towards healthy nutrition and their e-health literacy decency]. *Abant Sağlık Bilimleri ve Teknolojileri Dergisi*, *3*(1), 17-27.

Greene, J. A., Choudhry, N. K., Kilabuk, E., & Shrank, W. H. (2011). Online social networking by patients with diabetes: A qualitative evaluation of communication with Facebook. *Journal of General Internal Medicine*, *26*, 287-292. https://doi.org/10.1007/s11606.010.1526-3

Hair, J. F., Black, W. C., & Babin, B. J. (2010). *Multivariate data analysis: A global perspective*. Pearson Education.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2014). *Multivariate data analysis*: *Global edition*. Pearson Education Limited.

Hajli, N., Sims, J., Zadeh, A. H., & Richard, M.-O. (2017). A social commerce investigation of the role of trust in a social networking site on purchase intentions. *Journal of Business Research*, *71*, 133-141. https://doi.org/10.1016/j.jbusres.2016.10.004

Hardey, M. (1999). Doctor in the house: The internet as a source of lay health knowledge and the challenge to expertise. *Sociology of Health & Illness*, *21*(6), 820-835. https://doi.org/10.1111/1467-9566.00185

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of The Academy of Marketing Science*, *43*, 115-135. https://doi.org/10.1007/s11747.014.0403-8

Kaya, E., & Eke, E. (2023). Bireylerin mobil sağlik uygulamasi kullanim durumu ve e-sağlik okuryazarliği ilişkisi [The relationship of individuals use of mobile health application and e-health literacy]. *İşletme Bilimi Dergisi*, *11*(1), 1-15. https://doi.org/10.22139/jobs.1159206

Kim, K., Shin, S., Kim, S., & Lee, E. (2023). The relation between ehealth literacy and health-related behaviors: Systematic review and meta-analysis. *Journal of Medical Internet Research*, *25*, e40778. https://doi.org/10.2196/40778

Kuklinski, J. H., Quirk, P. J., Jerit, J., Schwieder, D., & Rich, R. F. (2000). Misinformation and the currency of democratic citizenship. *The Journal of Politics*, *62*(3), 790-816. https://doi.org/10.1111/0022-3816.00033

Lewandowsky, S., Ecker, U. K., & Cook, J. (2017). Beyond misinformation: Understanding and coping with the "post-truth" era. *Journal of Applied Research in Memory and Cognition*, *6*(4), 353-369. https://doi.org/10.1016/j.jarmac.2017.07.008

Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, *13*(3), 106-131. https://doi.org/10.1177/152.910.0612451018

Lupton, D. (2013). The digitally engaged patient: Self-monitoring and self-care in the digital health era. *Social Theory & Health*, *11*, 256-270. https://doi.org/10.1057/sth.2013.10

Mansur, F., & Ciğerci, K. (2022). Siberkondri ve e-sağlık okuryazarlığı arasındaki ilişki [The relationship between cyberchondry and e-health literacy]. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*, *11*(1), 11-21. https://doi.org/10.37989/gumussagbil.961457

Metzger, M. J., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal of Pragmatics*, *59*, 210-220. https://doi.org/10.1016/j.pragma.2013.07.012

Mitsutake, S., Shibata, A., Ishii, K., & Oka, K. (2016). Associations of ehealth literacy with health behavior among adult internet users. *Journal of Medical Internet Research*, *18*(7), e192. https://doi.org/10.2196/jmir.5413

Neter, E., & Brainin, E. (2012). eHealth literacy: Extending the digital divide to the realm of health information. *Journal of Medical Internet Research*, *14*(1), e19. https://doi.org/10.2196/jmir.1619

Nichols, T. (2024). *The death of expertise: The campaign against established knowledge and why it matters.* Oxford University Press. https://doi.org/10.1093/oso/978.019.7763827.002.0009

Norman, C. D., & Skinner, H. A. (2006). eHEALS: The ehealth literacy scale. *Journal of Medical Internet Research*, *8*(4), e507. https://doi.org/ 10.2196/jmir.8.4.e27

Oh, H., Rizo, C., Enkin, M., & Jadad, A. (2005). What is ehealth (3): A systematic review of published definitions. *Journal of Medical Internet Research*, *7*(1), e110. https://doi.org/ 10.2196/jmir.7.1.e1

Rasiah, S., Jaafar, S., Yusof, S., Ponnudurai, G., Chung, K. P. Y., & Amirthalingam, S. D. (2020). A study of the nature and level of trust between patients and healthcare providers, its dimensions and determinants: a scoping review protocol. *BMJ Open*, *10*(1), e028061. https://doi.org/10.1136/bmjopen-2018-028061

Sadhu, M., Jalalizadeh, B., Fritz, A., de Freitas Nicholson, T., Garcia, R., Lampley, S., Rain, M., Van Enkevort, E., & Brown, E. S. (2019). Trust in physicians and regional brain volumes: A population-based study. *The Primary Care Companion for CNS Disorders*, *21*(5), 27105. https://doi.org/10.4088/PCC.19m02461

Shiferaw, K. B., Tilahun, B. C., Endehabtu, B. F., Gullslett, M. K., & Mengiste, S. A. (2020). E-health literacy and associated factors among chronic patients in a low-income country: A cross-sectional survey. *BMC Medical Informatics and Decision Making*, *20*, 1-9. https://doi.org/10.1186/s12911.020.01202-1

Swire-Thompson, B., & Lazer, D. (2020). Public health and online misinformation: Challenges and recommendations. *Annu Rev Public Health*, *41*(1), 433-451. https://doi.org/10.1146/annurev-publhealth-040.119.094127

Tennant, B., Stellefson, M., Dodd, V., Chaney, B., Chaney, D., Paige, S., & Alber, J. (2015). eHealth literacy and web 2.0 health information seeking behaviors among baby boomers and older adults. *Journal of Medical Internet Research*, *17*(3), e70. https://doi.org/ 10.2196/jmir.3992

Tsai, T.-I., Yu, W.-R., & Lee, S.-Y. D. (2018). Is health literacy associated with greater medical care trust? *International Journal for Quality in Health Care*, *30*(7), 514-519. https://doi.org/10.1093/intqhc/mzy043

Usta, D., & Korkmaz, F. (2020). Trust levels in the healthcare system of patients receiving services from tertiary care institutions in Turkey. *Cukurova Medical Journal*, *45*(3), 860-870. https://doi.org/10.17826/cumj.647412

Uzunsakal, E., & Yıldız, D. (2018). Alan araştırmalarında güvenilirlik testlerinin karşılaştırılmasi ve tarımsal veriler üzerine bir uygulama [A comparison of reliability tests in field researchers and an application on agricultural data]. *Uygulamalı Sosyal Bilimler Dergisi*, *2*(1), 14-28.

Ünal, Ö., Durmuş, A., & Kutlu, R. (2022). E-sağlık okuryazarlığının kararlara katılıma etkisinde hasta hakları farkindalık düzeyinin aracı rolü [Mediating role of patient rights awareness level in the effect of e-health litarecy on decision participation]. *Hacettepe Sağlık İdaresi Dergisi*, *25*(4), 725-740.

Van der Meer, T. G., & Jin, Y. (2020). Seeking a formula for misinformation treatment in public health crises: The effects of corrective information type and source. *Health Communication*, *35*(5), 560-575. https://doi.org/10.1080/10410.236.2019.1573295

van Velsen, L., Flierman, I., & Tabak, M. (2021). The formation of patient trust and its transference to online health services: The case of a Dutch online patient portal for rehabilitation care. *BMC Medical Informatics and Decision Making*, *21*(1), 188. https://doi.org/10.1186/s12911.021.01552-4

Yaşlıoğlu, M. M. (2017). Sosyal bilimlerde faktör analizi ve geçerlilik: Keşfedici ve doğrulayıcı faktör analizlerinin kullanılması [Factor analysis and validity in social sciences: Application of exploratory and confirmatory factor analyses]. *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, *46*, 74-85.

Yuen, E., Winter, N., Savira, F., Huggins, C. E., Nguyen, L., Cooper, P., Peeters, A., Anderson, K., Bhoyroo, R., & Crowe, S. (2024). Digital health literacy and its association with sociodemographic characteristics, health resource use, and health outcomes: Rapid review. *Interactive Journal of Medical Research*, *13*(1), e46888. https://doi.org/10.2196/46888