

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

BARRIERS AND OPPORTUNITIES
IN ACCESSING DIGITAL HEALTH INFORMATION

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<https://doi.org/10.70300/XVTM7599>

Abstract: *Digital information services open new opportunities for health communication, yet their use remains uneven. While many benefit from quick and low-threshold access to knowledge, others face significant barriers. Barriers arise above all from unequal digital skills, limited trust in online sources, structural inequalities in access and the challenge of information overload. Opportunities, in contrast, lie in promoting health literacy, supporting prevention and self-management, enabling personalization through digital tools and facilitating more informed health-related decisions. The findings are discussed in the context of the Health Belief Model (HBM), the Theory of Planned Behavior (TPB) and the concept of the digital divide. These models show how individual attitudes, social norms and structural conditions interact in shaping digital health behavior. Ethical concerns regarding data protection, algorithmic influence and misinformation underline the need for transparency and user-centered design. In practice, strategies must address three levels: strengthening competences at the individual level, ensuring trustworthy systems at the systemic level and reducing inequalities at the societal level. Only by combining these perspectives can digital health communication fulfill its potential and contribute to inclusive improvements in health literacy.*

Keywords: *digital health communication; digital health information; barriers and opportunities; digital health literacy; digital divide*

INTRODUCTION

Digital technologies have already changed health communication. More and more people are using apps or social networks to research information on health topics (Nölke et al. 2015). This development opens up opportunities. Information is available more quickly, can be tailored more individually and can thus contribute to strengthening health literacy (Sørensen et al. 2012). At the same time, studies show clear differences in the use of digital services. The digital divide illustrates that not all population groups benefit equally from digital technology. Unequal technical access, varying digital skills or a lack of trust in digital sources mean that vulnerable groups such as older people or those with low levels of education remain disadvantaged (Friemel 2016). These areas of tension between opportunities and barriers are crucial to the question of whether digital health communication can also realize its potential. The aim of this publication is therefore to systematically evaluate the scientific literature and to answer various key questions: On the one hand, it examines the barriers that hinder access to digital health information. On the other hand, it investigates the opportunities that digital information services offer in terms of health literacy. The results should provide recommendations for action in research and practice.

RESEARCH METHODOLOGY

The research method used in this publication is a literature analysis. Its aim is to collate existing studies, evaluate them critically and highlight the most relevant barriers and opportunities in accessing digital health information, as well as gaps for further research. The search was conducted in established scientific databases and complemented by journals from health communication, public health and information science. Inclusion was limited to peer-reviewed studies in English or German that addressed barriers or opportunities for digital health information. Both theoretical and empirical contributions were considered, provided they examined digital health communication from the perspective of the general population or specific user groups. The selected literature

was analyzed using qualitative content analysis, distinguishing between barriers and opportunities. Particular attention was given to recurring patterns, group-specific differences and implications for research and practice.

RESULTS

The literature analysis shows that access to digital health information can be both hindered by various barriers and promoted by numerous opportunities. With regard to the barriers, it is clear that technological innovations do not automatically benefit all population groups equally. A key obstacle is unequal access to devices and stable internet connections, which particularly affects older people and socially disadvantaged groups (Van Dijk 2005). In addition, many users have insufficient digital health literacy. Studies show that older people in particular have difficulty searching for digital information, evaluating it critically and translating it into health-related action (Norman and Skinner 2006; Dratva, Schaeffer and Zeeb 2024). A lack of trust in digital sources is also a significant problem. Doubts about the reliability of websites or concerns about data protection cause many users to avoid digital offerings despite their availability (Wang et al. 2019). The abundance of digital information exacerbates this problem. Further data show that many people find it difficult to distinguish between reputable and unreliable content. This often leads to uncertainty and misinformation (Swire-Thompson and Lazer 2020).

Building on these findings, recent studies also emphasize the role of information overload and the spread of health-related misinformation on social media. Particularly during the COVID-19 pandemic, misleading or contradictory health messages spread rapidly across platforms, creating confusion and sometimes health-endangering behaviors (Cinelli et al. 2020; Roozenbeek et al. 2020). Moreover, structural inequalities continue to shape digital health communication: people with limited education, low income or migration background often encounter additional cultural and linguistic barriers, which limit the accessibility and relevance of digital health content (Kontos et al. 2014; Chesser et al. 2016).

At the same time, digital information services open up a wide range of opportunities. Particularly noteworthy is the low-threshold access to health knowledge. This makes it possible to retrieve information quickly and independently of location and to strengthen health literacy across the population (Sørensen et al. 2012). In addition, digital applications support preventive measures and self-management processes by actively involving patients in shaping their health behavior (Kreps and Neuhauser 2010). Further potential lies in the possibility of personalisation: apps and AI-supported systems can tailor information to individual needs and offer targeted support (Meskó et al. 2017). In addition, the literature shows that digital tools also promote doctor-patient communication by facilitating the exchange of information and supporting joint decision-making processes (Zulman et al. 2011).

Recent analyses confirm these findings, highlighting how interactive and personalized applications enhance motivation and self-efficacy in health management. For example, gamified mobile health apps or wearable technologies can promote healthy behavior if they are user-friendly and embedded in broader care processes (Baumel et al. 2019; Kelders et al. 2020). Furthermore, digital infrastructures such as electronic health records or telemedicine platforms provide opportunities to improve continuity of care and strengthen patient empowerment. These potentials can only be realized if issues of data protection and usability are adequately addressed (Quinn et al. 2019). The analysis shows that digital health information has outstanding potential for promoting health literacy. Structural and individual barriers remain that prevent these opportunities from reaching the population evenly. The challenge for research and practice is to specifically reduce existing barriers and shape the positive possibilities of digital communication in such a way that vulnerable groups can also benefit.

CONCLUSIONS/DISCUSSION

The analysis shows that access to digital health information is both restricted by barriers and enhanced by opportunities. These findings can be classified in detail in the context of theoretical

models. HBM explains why perceived risks, benefits and barriers are crucial for the use of digital services (Becker 1974; Rosenstock 1974; Glanz, Rimer and Viswanath 2015). Low eHealth literacy or mistrust of sources act as perceived barriers here and reduce the probability of actively using digital information. On the other hand, opportunities like personalized applications or easily accessible information reinforce the perceived benefits (Seale et al., 2020). TPB emphasises the importance of attitudes, social norms and perceived control (Ajzen, 1991). Trust in digital health sources and the ability to use digital tools influence perceived behavioral control. Studies confirm that the acceptance of health apps depends significantly on social support and digital literacy (Tomczyk et al. 2021). Opportunities such as promoting communication between doctors and patients focus precisely on this aspect, as they increase users' perceived ability to act accordingly.

The digital divide concept demonstrates that the aforementioned barriers are not only personal but also deeply ingrained in society. Disadvantaged groups often experience systematic exclusion due to differences in access to technology, digital skills and the outcomes they achieve (Van Dijk 2005; Friemel 2016). At the same time, the opportunities show that, if designed appropriately, digital health services have the potential to reduce existing inequalities by being developed in a way that is accessible, trustworthy and target group-oriented.

Building on these models, recent research emphasizes that digital health literacy must be understood as both an individual competence and a systemic responsibility. Only by tailoring digital infrastructures and communication strategies to the needs of diverse user groups can they fully unfold their impact. This procedure includes transparent data governance, culturally sensitive communication and participatory design processes that actively involve users in the development of digital tools (Bernaerts et al. 2024). In this sense HBM and TPB remain relevant for explaining individual decisions, while the concept of the digital divide highlights the structural conditions that shape these decisions. Another important dimension concerns the ethical implications of digital health communication. Studies point out that algorithms and platform logics can amplify misinformation or prioritize commercial content over evidence-based health knowledge (Cinelli et al. 2020). Addressing these challenges requires not only technical solutions but also institutional responsibility and policy frameworks that ensure fairness, transparency and accountability in digital communication environments (Fitzpatrick 2023).

From a practical perspective the findings suggest that strategies to promote digital health literacy must be conceived on several interconnected levels. At the individual level it is necessary to strengthen competencies through targeted education, training programs and low-threshold access to digital resources. On the systemic level, user-centered design, transparent handling of data and the establishment of reliable quality standards are essential to ensure trustworthiness and long-term acceptance. Finally, at the societal level, reducing structural inequalities must be addressed through inclusive infrastructures and targeted support for vulnerable groups. Digital health communication does not reinforce existing disparities but contributes to social participation and equity.

Overall, HBM and TPB provide important aspects for the individual determinants of information behavior, while the concept of the digital divide highlights structural conditions. Only by combining these perspectives is it possible to realistically assess why the opportunities and barriers of digital health communication are often closely intertwined. This means practically that strategies to promote digital health literacy must take into account psychological factors such as attitudes and trust, as well as social differences and structural access conditions.

Digital health information has great potential to strengthen health literacy, but its use is still limited by significant barriers. These include unequal access to technology, insufficient digital skills, a lack of trust in information sources and the problem of information overload. At the same time, there are clear opportunities: digital services enable easy and flexible access to knowledge, support prevention and self-management and allow for personalized information. They can also improve communication and decision-making in healthcare. A comprehensive understanding of digital health communication requires the integration of these perspectives. HBM and TPB emphasize individual attitudes, intentions and perceived control, while the concept of the digital divide addresses structural inequalities. Both dimensions are decisive for participation and use.

Consequently, psychological and social factors must be examined together if digital health services are to be developed in an effective and equitable way.

In practice, developing digital services with specific target groups in mind and strengthening trust through transparency. The promotion of digital health literacy should be systematically embedded in education and prevention programs. For research, future studies should pursue more hybrid approaches that take into account both psychological explanatory models and structural inequalities. Only in this way can an integrative framework model be developed that meets the complex requirements of inclusive digital health communication.

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ПРЕЧКИ И ВЪЗМОЖНОСТИ ПРИ ДОСТЪПА ДО ЦИФРОВА ЗДРАВНА ИНФОРМАЦИЯ

Резюме: Цифровите информационни услуги откриват нови възможности за комуникация в областта на здравеопазването, но тяхното използване остава неравномерно. Докато мнозина се възползват от бърз и лесен достъп до знания, други се сблъскват със значителни пречки. Пречките възникват преди всичко от неравномерните цифрови умения, ограниченото доверие в онлайн източниците, структурните неравенства в достъпа и предизвикателството, свързано с пренасищането с информация. Възможностите, от друга страна, се крият в насърчаването на здравната грамотност, подкрепата за превенция и самоуправление, позволяването на персонализация чрез цифрови инструменти и улесняването на по-информирани решения, свързани със здравето. Резултатите се обсъждат в контекста на модела на здравните вярвания (НВМ), теорията за планираното поведение (ТПВ) и концепцията за цифровото разделение. Тези модели показват как индивидуалните нагласи, социалните норми и структурните условия взаимодействат при формирането на цифровото поведение в областта на здравеопазването. Етичните съображения относно защитата на данните, алгоритмичното влияние и дезинформацията подчертават необходимостта от прозрачност и дизайн, ориентиран към потребителя. На практика стратегиите трябва да се отнасят до три нива: укрепване на компетенциите на индивидуално ниво, осигуряване на надеждни системи на системно ниво и намаляване на неравенствата на обществено ниво. Само чрез комбиниране на тези перспективи цифровата комуникация в областта на здравеопазването може да реализира своя потенциал и да допринесе за всеобщо подобряване на здравната грамотност.

Ключови думи: цифрова комуникация в областта на здравеопазването; цифрова информация за здравеопазването; пречки и възможности; цифрова грамотност в областта на здравеопазването

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