



THE ROLE OF DIGITAL TECHNOLOGY IN INCREASING THE EFFECTIVENESS OF HEALTH PROMOTION IN HOSPITALS

**Ni Made Ary Lisnawati^{1*}, Ni Luh Gde Nita Sri Wahyuningsih², Ni Made Widnyani³,
Ni Wayan Mega Sari Apri Yani⁴, Anik Nurhaeni⁵**

¹Hospital Administration Study Program, Universitas Bali International, Gg. Jeruk No.9A, Tonja, Denpasar Timur, Denpasar, Bali 80234, Indonesia

²Faculty of Health, Institut Teknologi dan Kesehatan Bali, Jl. Tukad Balian No.180, Renon. Denpasar Selatan, Denpasar, Bali 80227, Indonesia

³Digital Business Study Program, Universitas Bali International, Gg. Jeruk No.9A, Tonja, Denpasar Timur, Denpasar, Bali 80234, Indonesia

⁴Digital Business Study Program, Institut Pariwisata dan Bisnis International, Jl. Kecak No.12, Tonja, Denpasar Utara, Denpasar, Bali 80239, Indonesia

⁵Public Administration Study Program, Universitas Bali International, Gg. Jeruk No.9A, Tonja, Denpasar Timur, Denpasar, Bali 80234, Indonesia

*arylisna87@gmail.com

ABSTRACT

The development of digital technology has changed many aspects of the world of health, including in the field of health promotion in hospitals. Health promotion that was previously carried out through conventional methods is now transformed using digital technology that allows for faster and more effective dissemination of information. This study aims to determine the role of digital technology in increasing the effectiveness of health promotion in hospitals. This study is a literature review that collects and analyzes various articles, journals, and studies that discuss the application of digital technology in health promotion in hospitals. The selected literature covers various types of digital technology used, such as social media, mobile applications, and hospital websites, and discusses their impact on the effectiveness of health promotion. The results of the literature review indicate that the application of digital technology in hospitals can improve the effectiveness of health promotion in various ways. Technology allows hospitals to provide timely health information, improve interaction with patients, and disseminate health messages to a wider audience. Social media and health applications, for example, can provide more personalized and easily accessible education. However, challenges such as data privacy issues, lack of access to technology in certain areas, and low digital literacy are still obstacles that need to be considered. Digital technology has great potential in improving the effectiveness of health promotion in hospitals. Despite facing some challenges, the adoption of appropriate technology can support hospitals in providing better health services and reaching more people with useful information.

Keywords: digital technology; effectiveness; health promotion; hospital

How to cite (in APA style)

Lisnawati, N. M. A., Wahyuningsih, N. L. G. N. S., Widnyani, N. M., Yani, N. W. M. S. A., & Nurhaeni, A. (2024). The Role of Digital Technology in Increasing the Effectiveness of Health Promotion in Hospitals. *Indonesian Journal of Global Health Research*, 6(S6), 1185-1192. <https://doi.org/10.37287/ijghr.v6iS6.5277>.

INTRODUCTION

In today's digital era, information and communication technology has penetrated various aspects of life, including in the health sector. One form of utilization of digital technology in the world of health is digital-based health promotion. Health promotion is the process of providing information that aims to increase public knowledge and awareness of the importance of health and a healthy lifestyle. Hospitals, as one of the health service institutions, have a strategic role in conveying health information to patients and the community. However, in recent years, hospitals have begun to adopt digital technology to facilitate the dissemination of information and increase the effectiveness of health promotion.

Digital-based health promotion in hospitals includes the use of various technologies such as social media, health applications, hospital websites, and other platforms to convey health messages to patients and the public. This digital technology not only facilitates access to information, but also allows hospitals to provide more personalized and interactive education, which can ultimately improve patient compliance with medical care. According to research conducted (Widuri & Noor, 2021), mobile health applications used by hospitals can help patients monitor their health conditions in real-time and provide the information needed for disease prevention. However, despite the enormous potential of digital technology in health promotion, its implementation and management still face various challenges. One of the biggest challenges is the digital divide, which is the difference in access to technology between individuals or groups in society. This can lead to inequalities in terms of obtaining accurate health information. For example, some groups of people living in remote areas may not have adequate access to the internet or digital devices needed to access digital health promotion services.

According to (Hendriani & Hadi, 2020) This accessibility issue is often an obstacle in implementing digital-based health promotion in several hospitals, privacy and data security issues are also important concerns in digital-based health promotion. Patient personal data used to provide digital health services must be guarded with great care to avoid misuse of information. Therefore, hospitals must ensure that they follow applicable guidelines and regulations regarding patient data protection, as recommended by (Akbar & Santoso, 2019) in his research on health data regulation in Indonesia. Despite these challenges, many hospitals have begun to integrate digital technology into their health promotion systems with positive results. The use of social media, for example, has been shown to expand the reach of health information to a wider audience. (Vionita & Prayoga, 2021) stated that Hospitals that actively use social media in health promotion can increase public awareness of health issues and reach a larger audience more easily. In addition, hospitals can use social media to provide detailed information about specific health procedures, vaccination programs, and healthy lifestyles.

Digitalization of health promotion also provides benefits in terms of efficiency and cost savings. Hospitals that use digital technology in health promotion campaigns can reduce costs for printing educational materials and other marketing. Thus, digital technology not only increases the effectiveness of communication but also increases the operational efficiency of hospitals. As technology develops, hospitals begin to adopt web-based platforms or mobile applications to provide more targeted health information services that are easily accessible anytime and anywhere (Sembiluh & Sulistiadi, 2022).

In this context, it is important to understand how hospitals can make the most of digital technology to improve the effectiveness of health promotion. As a first step, hospitals need to conduct an audience needs analysis to determine the most appropriate type of digital platform. That way, they can design a more effective health promotion strategy. The application of digital technology in hospitals can also function to monitor patient progress, provide educational health information, and improve interaction between medical personnel and patients (Nadiyah & Prayoga, 2024). However, in order for the implementation of digital-based promos to run effectively, hospitals need to overcome a number of existing obstacles. Not only issues of access and privacy, but also challenges in increasing digital literacy among the community. People who are not yet accustomed to using digital technology need to be given education and training so that they can access health information effectively (ERISSA, 2024).

This study aims to explore how digital technology can enhance the effectiveness of health promotion in hospitals by leveraging various digital platforms, such as mobile applications, websites, social media, and other digital tools. The primary goal is to understand how these platforms can improve the delivery and accessibility of health information, making it faster, more comprehensive, and more targeted to reach a broader audience. By utilizing digital technology, hospitals have the potential to share information about diseases, medical procedures, healthy lifestyles, and health programs more effectively and efficiently. Furthermore, this study seeks to assess the role of personalized and responsive digital-based services in improving patient compliance with care and promoting healthier behaviors. For instance, mobile applications can provide direct access to health information, send reminders for routine care or medical check-ups, and offer educational materials tailored to individual health conditions. These personalized approaches not only enhance patient engagement but also contribute significantly to disease prevention efforts by fostering proactive health management. Ultimately, this research aims to explore how digital tools can expand the reach and impact of hospital health promotion programs, ensuring they are accessible and relevant to diverse populations.

METHOD

This study uses a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize relevant studies on the role of digital technology in improving the effectiveness of health promotion in hospitals. SLR was chosen because it allows researchers to filter, collect, and analyze literature systematically and transparently, in order to produce more objective and reliable conclusions. Researchers collected articles that discussed the application of digital technology in health promotion in hospitals, with a focus on social media, mobile applications, and hospital websites. The selected sources came from journals and articles published in the last 5 years. The article selection process was carried out based on the relevance of the topic and the quality of the research. The analysis was conducted to explore the impact of digital technology on the effectiveness of health promotion and identify challenges faced in its implementation in hospitals. The research process for this study follows a Systematic Literature Review (SLR) methodology, which is designed to systematically identify, evaluate, and synthesize studies relevant to the role of digital technology in enhancing health promotion effectiveness in hospitals. The process begins with defining clear research questions and criteria for inclusion and exclusion, ensuring the selection of literature is focused and aligned with the research objectives.

First, researchers collected journal articles and studies published within the last five years to ensure the data reflects recent advancements and trends in digital technology. The focus was specifically on literature that discussed the use of social media, mobile applications, and hospital websites in the context of health promotion. A thorough search was conducted across credible databases, including peer-reviewed journals and reputable online repositories. The next step involved a rigorous screening process, where articles were filtered based on their relevance to the topic and the quality of the research. This filtering included an evaluation of abstracts, keywords, and full-text reviews to ensure that only high-quality, relevant studies were included. Articles were assessed for their methodological rigor, clarity of findings, and alignment with the research focus.

Once the relevant literature was collected, the analysis phase began. In this stage, the researchers systematically reviewed the selected articles to explore how digital technology impacts the effectiveness of health promotion in hospitals. This involved identifying recurring themes, synthesizing evidence on the benefits of digital platforms, and evaluating their role in improving patient education, compliance, and engagement. Additionally, the analysis also

highlighted challenges and limitations faced by hospitals in implementing digital-based health promotion strategies. Finally, the findings from this SLR approach were synthesized into a comprehensive overview that provides insights into the potential and challenges of using digital technology for health promotion in hospitals, offering evidence-based conclusions and recommendations for future implementation.

RESULT

Based on the results of the article search, several articles were obtained that met the requirements to be used as main articles, as in the table below.

Table 1.
Review Articles

Researcher	Article Title	Research methods	Research result
(Permatasari et al., 2023)	The Role of Digital Media in Health Promotion Efforts to Improve Public Health: Literature Review	Browsing 50 International Publication Journals, 35 Journals Relevant to the Topic Grouped into 16 Journals on the Utilization of Digital Media, 13 Journals on the Use of Digital Media and 6 Journals on the Role of Health Promoters in Carrying Out Digital Media-Based Health Promotion	The research results show that the digital-based media used has a positive contribution to health promotion efforts.
(Anisa et al., 2022)	Health Information and Promotion Media for Regional General Hospitals	The research method used is descriptive qualitative. Data collection techniques used are observation, interviews, and literature studies.	The results of the study show that the information and promotional media used by hospitals are print media, namely brochures, banners and posters.
(Leonita & Jalinus, 2018)	The Role of Social Media in Health Promotion Efforts: A Literature Review	From searching 100 international publication journals, 85 journals relevant to the topic were grouped into 35 journals on the use of social media, 33 journals on the characteristics of social media used and its weaknesses and 17 journals on the role of health professionals in carrying out social media-based health promotion.	The results of the study revealed that social media has a positive contribution to health promotion efforts, but several weaknesses include: lack of outreach to passive audiences, false and inaccurate information, lack of interaction with audiences, and limited ability of health professionals to utilize social media, thus not guaranteeing the sustainability of the program.
(Prayoga, 2024)	Marketing 4.0 in Healthcare: A Literature Review of Digital Transformation and Marketing Strategy: Literature Review	This research method uses a literature review by referring to sources in English and Indonesian through databases such as Pubmed, ProQuest, Scopus, and Google Scholar.	Research highlights the positive impact of social media marketing on healthcare and brand engagement, as well as efficient digital marketing strategies such as social media usage, digital search optimization, and online advertising.

Researcher	Article Title	Research methods	Research result
(By Sebiluh & Sulistiadi, 2022)	Analysis of Digital Marketing Implementation in Hospitals during the COVID-19 Pandemic: Literature Review	This study was conducted descriptively with a literature review. The search was conducted on articles published in English and Indonesian through a search on Proquest, Google Scholar, and Science Direct, with the keywords digital marketing, analysis, hospitals, COVID-19.	This study shows that digital marketing in hospitals during the COVID-19 pandemic is a marketing strategy that has many benefits. The selection of digital marketing channels depends on the goals the hospital wants to achieve.
(Nadiyah & Prayoga, 2024)	Digital Transformation as Part of Hospital Marketing Strategy: Literature Review	The method used is a literature review to review references published in English and Indonesian. Literature searches using databases, namely Pubmed, ProQuest, ScienDirect, and Google Scholar.	Hospitals need to carry out digital transformation such as effective digital marketing, to promote medical care services in expanding business while still providing quality health care services and ensuring patient satisfaction.
(Junaedi et al., 2023)	Optimizing Health Promotion Using Websites and Social Media at Dr. Karmini Hospital, Tasikmalaya City	The implementation method is carried out by means of socialization to all hospital units.	The results of the activity are that there was an increase in knowledge between before and after the socialization regarding health promotion in hospitals.
(Damanik et al., 2024)	Analysis of Social Media Usage in Health Promotion Programs	This study uses a quantitative approach with a survey method. Data were collected through questionnaires distributed to 500 respondents who actively use social media.	The results showed that 85% of respondents felt they received useful health information through social media. As many as 70% of respondents reported positive changes in their health behavior after participating in health campaigns on social media.

DISCUSSION

This study shows that digital technology, including social media, websites, and mobile applications, make a significant contribution to increasing the effectiveness of health promotion in hospitals. By utilizing various digital platforms, hospitals can reach a wider audience, deliver information interactively, and encourage changes in public health behavior. The following are the results of the study obtained:

Social Media as an Effective Health Promotion Tool

Social media has become one of the main tools in health promotion, especially because of its ability to reach various levels of society. Research by Damanik et al. (2024) showed that 85% of respondents felt that they received useful health information through social media, while 70% reported positive changes in their health behavior. This reflects that social media not only functions as a means of communication, but is also able to encourage awareness and actions that support health. However, research by Leonita & Jalinus (2018) also highlights the

weaknesses of social media, such as the risk of spreading false information and the lack of in-depth interaction with passive audiences. Nevertheless, the benefits of social media in promoting health remain dominant, especially if its use is carried out with the right strategy.

Website as a Source of Structured Information

Hospital websites are an effective platform for providing health information in a structured and easily accessible manner. Research by Junaedi et al. (2023) at the Dr. Karmini Hospital in Tasikmalaya City showed that the use of websites can increase patient knowledge about health promotion. Patients who previously did not understand the health services offered became more aware after the hospital used the website as a means of information. This confirms that the website not only acts as a communication medium, but also as an educational tool that can strengthen the relationship between the hospital and patients (Ariyo & Achadi, 2022).

Digital Transformation Through Digital Marketing

Digital transformation in hospitals, including the implementation of digital marketing strategies, has helped hospitals expand their reach and increase patient engagement. Prayoga (2024) revealed that digital marketing through social media, search engine optimization, and online advertising have a positive impact on increasing hospital brand engagement. During the COVID-19 pandemic, digital marketing has become a very effective tool, as found by Sembiluh & Sulistiadi (2022). Hospitals can continue to communicate with patients despite physical restrictions, so that health services continue to run without significant obstacles.

Advantages of Digital Media Compared to Conventional Media

Digital media offers many advantages over conventional promotional media such as brochures, banners, and posters. Research by Permatasari et al. (2023) shows that digital media allows for the dissemination of information widely, in real time, and interactively. Meanwhile, Anisa et al. (2022) found that although print media is still used in some hospitals, the existence of digital media is starting to replace the role of print media due to its higher effectiveness. Digital media also allows for direct feedback from the audience, so that hospitals can adjust their health promotion strategies based on community needs (Junaedi et al., 2023).

Patient Behavior Change and Well-Being

One of the significant outcomes of the use of digital technology is positive behavioral change among the community. Health information delivered through digital platforms, such as social media campaigns, not only increases knowledge but also encourages audiences to take better action towards their health (Mailintina et al., 2024). The media plays an important role in society. The media plays a role in providing information, educating, and entertaining the public. The media helps users to know the current situation around the world. The media has a major social and cultural impact on society. The media has the ability to reach a wide audience, making the media widely used in delivering messages to build public opinion and awareness (Tarantang et al., 2019). The rapid development of technology and information affects various sectors. In this case, one of them is the health sector. By maximizing the use of digital media to communicate, provide education and to facilitate the delivery of information.

Regulation of the Minister of Health of the Republic of Indonesia Number 44 of 2018 concerning the Implementation of Health Promotion states that health promotion is a process of empowering the community through activities to inform, influence, and help the community to play an active role in encouraging behavioral change and improving health towards optimal health levels (Preeti, 2014).

Empirical evidence shows that the use of the above media is effective in promoting health with the aim of increasing understanding and providing support to the community to behave healthily, but it cannot be denied that behind the success of the media there are several weaknesses. Exchange of information needs to be monitored, evaluated and reviewed for quality and reliability of the information (Cutrona et al., 2015). Using digital media, especially social media, can increase public access to health information, and promote positive behavioral changes, thus social media can collaborate and complement conventional health promotion. Social media can be a superior tool with wide reach and interactivity (Korda & Itani, 2013). The communication media that is considered effective by the health promotion team is print media such as banners and posters where the information can be seen and reached by all people who come to health services. Furthermore, social media is also considered very effective. On social media, communication takes place in two directions, people can submit various questions about health and hospital services. Health promoters can also create content about clean and healthy living behaviors that can be done every day to increase awareness in maintaining health (Pandhika et al., 2023).

CONCLUSION

This study shows that digital technologies, such as social media, websites, and mobile applications, play a significant role in increasing the effectiveness of health promotion in hospitals. With the ability to reach a wide audience, interactively, and in real time, digital technology enables more effective delivery of health information, increases patient awareness, and encourages changes in healthy living behavior. Integration of digital technology into health promotion strategies is essential to create inclusive, sustainable, and community-based health services.

REFERENCES

- Akbar, H., & Santoso, EB (2019). Risk Factors for Knee Osteoarthritis at Haji General Hospital, Surabaya. *PROMOTIF: Journal of Public Health*, 9(2), 219–224.
- Anisa, R., Yustikasari, Y., & Dewi, R. (2022). Information Media and Health Promotion of Regional General Hospitals. *Journal of Research Innovation*, 2(8), 2869–2874.
- Ariyo, R. V. B., & Achadi, A. (2022). Penggunaan Strategi Pemasaran Digital dalam Layanan Kesehatan di saat Pandemi COVID-19: Literature Review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 5(7), 775–780.
- Cutrona, S. L., Mazor, K. M., Vieux, S. N., Luger, T. M., Volkman, J. E., & Finney Rutten, L. J. (2015). Health information-seeking on behalf of others: characteristics of “surrogate seekers.” *Journal of Cancer Education*, 30, 12–19.
- Damanik, CRB, Harahap, RA, & Ritonga, F. (2024). Analysis Of Social Media Use In Health Promotion Programs. *Latest Health Innovation Journal*, 6(3).
- ERISSA, F. (2024). *Gambaran Media Promosi Kesehatan Di Rumah Sakit Islam Ibnu Sina Padang Panjang Tahun 2024*. Universitas Muhammadiyah Sumatera Barat.
- Junaedi, F., Triyanti, E., & Prabowo, T. (2023). Optimalisasi Promosi Kesehatan dengan

- Menggunakan Website dan Media Sosial di Rumah Sakit dr Karmini Kota Tasikmalaya. *Jurnal Abdi Masyarakat Indonesia*, 3(5), 1369–1376.
- Hendriani, AD, & Hadi, EN (2020). Evaluation of Hospital Health Promotion Standards at Dr. Soekardjo Regional General Hospital, Tasikmalaya City. *Jukema (Aceh Public Health Journal)*, 6(1), 29–42.
- Junaedi, F., Triyanti, E., & Prabowo, T. (2023). Optimizing Health Promotion Using Websites and Social Media at Dr. Karmini Hospital, Tasikmalaya City. *Indonesian Community Service Journal*, 3(5), 1369–1376.
- Korda, H., & Itani, Z. (2013). Harnessing social media for health promotion and behavior change. *Health Promotion Practice*, 14(1), 15–23.
- Leonita, E., & Jalinus, N. (2018). The role of social media in health promotion efforts: A literature review. *INVOTEK: Journal of Vocational Innovation and Technology*, 18(2), 25–34.
- Mailintina, Y., Panjaitan, R. S., Ludovikus, L., Ellynia, E., Wahdini, R., Yari, Y., & La Ramba, H. (2024). Efektivitas Sistem Administrasi Rumah Sakit Dalam Meningkatkan Pelayanan Kesehatan: Scoping Review. *Kosala: Jurnal Ilmu Kesehatan*, 12(1), 53–69.
- Nadiyah, SNA, & Prayoga, D. (2024). Digital Transformation as Part of Hospital Marketing Strategy: Literature Review. *Indonesian Health Promotion Publication Media (MPPKI)*, 7(2), 265–272.
- Pandhika, D. A., Stiawati, T., & Jumiati, I. E. (2023). Utilization of Social Media as a Health Promotion Tool of Indonesian Hospitals: Literature review. *Faletehan Health Journal*, 10(02), 131–136.
- Permatasari, AA, Lolita, DC, & Chotimah, CC (2023). The Role of Digital Media in Health Promotion Efforts to Improve Public Health: A Literature Review. *Zaitun (Journal of Health Sciences)*, 11(1), 1–4.
- Prayoga, D. (2024). Marketing 4.0 in Health Services: Literature Review of Digital Transformation and Marketing Strategy: Literature Review. *Indonesian Health Promotion Publication Media (MPPKI)*, 7(4), 744–751.
- Preeti, B. (2014). Education and Role of Media in Education system. *Journal of Scientific Engineering and Research (IJSER) Www. Ijser. in ISSN (Online)*, 2347–3878.
- Sembiluh, D., & Sulistiadi, W. (2022). Analysis of Digital Marketing Implementation in Hospitals during the COVID-19 Pandemic: Literature Review. *Indonesian Health Promotion Publication Media (MPPKI)*, 5(3), 224–232.
- Tarantang, J., Awwaliyah, A., Astuti, M., & Munawaroh, M. (2019). Perkembangan sistem pembayaran digital pada era revolusi industri 4.0 di indonesia. *Jurnal Al-Qardh*, 4(1), 60–75.
- Vionita, L., & Prayoga, D. (2021). The Use of Social Media during the Covid-19 Pandemic in Health Promotion at Tangerang Regency Hospital. *Indonesian Public Health Media*, 20(2), 126–133.
- Widuri, A., & Noor, HZ (2021). Efforts to improve health consultation services with telemedicine. *JMM (Jurnal Masyarakat Mandiri)*, 5(4), 1194–1201.