



REVIEW PAPER

Role of search engine optimization in enhancing digital presence and marketing strategies in healthcare: a literature review

Manuscript ID: IJHRMLP-1001

Nishan K¹, Raj S²

Address for correspondence:

¹Assistant Professor

(Corresponding author)

Department of Hospital Administration,
NEMCARE Group of Institutions, Santipur,
Mirza, Parlli Part,
Assam - 781125.

Email id: nishan.kakati@gmail.com

Mobile: +91-8011332672

ORCID id: 0009-0005-6531-1154

²Director, Assam Institute of Management,
Vigyan Path, Paschim Boragaon, Guwahati,
Assam - 781035.

Email id: sanjibraj@gmail.com

Mobile: +91-9864013244

ORCID id: 0009-0006-1366-2160

Received: 09-12-2024

Revised: 16-12-2024

Editorial approval: 25-12-2024

Checked for plagiarism: Yes.

Peer-reviewed article: Yes.

Editor who approved:

Prof. Dipak Kr Sarma

ABSTRACT

Healthcare marketing combines conventional marketing concepts with industry-specific strategies to engage patients, healthcare professionals and the wider public. In today's digital era, search engine optimization (SEO) is essential in enhancing website visibility in search engine results attracting new and existing patients. SEO has emerged as a crucial strategy incorporating techniques including keyword optimization, content marketing, local SEO, and mobile optimization to address sector-specific needs. Through a review of existing literature, case studies and research, this study sheds light on key SEO tactics in healthcare marketing that increase online visibility and boost patient satisfaction and engagement. The review further addresses the challenges and limitations in implementing SEO within the healthcare industry and suggests potential research directions in the future.

Keywords: Online marketing; visibility; Patient engagement; digitization; brand awareness

Cite this article: Kakati N, Raj S. Role of search engine optimization in enhancing digital presence and marketing strategies in healthcare: a literature review. *Int J Health Res Medico Leg Prae* 2024 Jul-Dec;10(2):31-38. Doi: 10.31741/ijhrmlp.v10.i2.2024.5

INTRODUCTION

The healthcare industry has increasingly recognized the importance of digital marketing in educating the public about services and improving health literacy and patient care.¹ With patient-centered care becoming the standard norm, achieving high patient satisfaction has become a top priority. Digitalization is transforming healthcare, with providers using digital marketing to engage, attract, and

retain patients. Optimized SEO is essential for enhancing brand visibility and profitability by improving online visibility and helping websites rank higher in search engine results.

SEO enhances organic traffic to websites and is essential in healthcare marketing.² As patients increasingly turn to online resources over traditional methods like word-of-mouth and physician referrals for health-related information and with over one billion healthcare-

related made on Google daily, effective SEO strategies are crucial for enhancing patient engagement and satisfaction.³ This literature review explores how SEO can improve digital presence and marketing in healthcare by examining research, case studies, and SEO techniques to highlight its role in enhancing visibility, patient satisfaction, and overall marketing effectiveness.

This literature review examines research exploring the impact of SEO on the healthcare industry, spanning from 2000 to 2023. Key themes include the following:

a) Increased visibility and patient acquisition through effective SEO strategies.⁴⁻⁵

b) Building Trust and Brand Image positioning them as dependable sources of health information.⁶⁻⁹

c) Improved patient engagement and communication by facilitating appointment scheduling, fostering online patient communities, and providing comprehensive service information.¹⁰⁻¹¹

d) The evolving digital landscape to assist healthcare organizations in evolving their SEO strategies in response to the dynamic digital landscape involves updating search engine algorithms and adopting new digital marketing methods, like social media integration.¹²⁻¹⁵

Observations and inferences drawn

Table 1 Key findings on search engine optimization as a healthcare marketing tool

Year	Researchers	Key Findings	Strategies Emphasized
2020	Fong and Goh ¹⁶	Brand value, influenced by SEO, impacts patient decisions and attracts new clients.	Brand value and SEO
2007	Kay ¹⁷	SEO helps healthcare providers advertise and offer reliable information.	SEO utilization
2012	Hussain et al. ¹⁸	SEO-driven web promotion boosts client support and performance.	Web promotion & SEO
2009	Rooney ¹⁹	Website design and SEO are key to patient-driven marketing.	Marketing innovation & SEO
2011	Cudmore et al. ²⁰	Business sites are viewed more positively when optimized for quality and convenience.	Site optimization & quality
2013	Gupta et al. ²¹	Social media and virtual presence enhance health promotion and education.	Virtual presence & health promotion
2015	Nelson et al. ²²	Social media, particularly Facebook, influences health decisions among younger adults.	Social media & health information
2016	Ahmad et al. ²³	SEO enhances brand image and customer satisfaction by boosting online presence.	Brand image & SEO
2018	Radu et al. ²⁴	Increased online interactions boost brand visibility and attract global patients.	SEO for global reach & medical tourism
2020	Mathew and Soliman ²⁵	SEO strengthens digital presence, influencing healthcare strategies and tourism.	Digital presence and global availability.

Year	Researchers	Key Findings	Strategies Emphasized
2023	Mallick ²⁶	Digital marketing through SEO builds trust and enhances patient engagement.	Digital marketing and SEO
2000	Gates et al. ⁴	Web optimization improves the decision-making process and client attraction for healthcare providers	Decision-making and web optimization.
2003	Mentz et al. ⁵	SEO improves visibility with design changes, like pay-per-click and expert navigation.	Site design & SEO optimization
2002	Menon et al. ⁶	Increasing trust in online healthcare data encourages hospitals to develop informative, educational websites.	Online consultations & educational sites
2008	Kim et al. ⁷	Trust, loyalty, and brand value increase with SEO-optimized health sites.	Trust, loyalty, & brand value
2019	Purcarea ⁸	SEO enhances patient engagement and ROI by improving user experience.	User experience & SEO
2019	Purcarea ⁹	Targeted keywords and SEO strategies are key to boosting patient engagement.	Keywords & digital promotion
2001	Ball and Lillis ¹⁰	E-health initiatives transform doctor-patient relationships, improving communication and clinical outcomes.	Digital proficiency & e-health
2005	Andersen ¹¹	E-health communities enhance customer relationships through SEO.	Customer relations & SEO
2004	Greenberg et al. ¹²	Web access to health data requires quality components to improve search visibility.	Site quality & SEO visibility
2010	Ogle ¹³	SEO improves site usability through clear terms and accurate phrasing.	SEO analytical tools
2006	Evans ¹⁴	Social media promotes health behaviour, combined with SEO strategies.	Social media & SEO integration
2014	Richter et al. ¹⁵	Hospitals leverage social media, especially Facebook, for customer satisfaction and recruitment.	Social media (Facebook)

Research findings from various studies (**Table 1**) indicate that web optimization and SEO tactics have significantly improved decision-making processes, patient engagement, and brand value of healthcare organizations.

Approaches and processes for digital presence through optimized SEO

A systematic review of the literature reveals that a proper process is essential to enhance and maintain digital presence with the help of proper utilization of SEO and other digital marketing processes in delivering

quality care to patients. Factors that can help get more attention from the patients were evaluated over time. This study helps to understand how patient perception can significantly impact satisfaction and the areas that need to be considered to maintain a brand image, loyalty, and patient trust.

Table 2 Key factors for the success of SEO

Researchers	Year	Optimized SEO	Engaging website	Social media presence	Keywords
Fong and Goh ¹⁶	2020	Y			
Kay ¹⁷	2007	Y			
Hussain et al. ¹⁸	2012	Y			
Rooney ¹⁹	2009	Y	Y		
Cudmore et al. ²⁰	2011	Y	Y		
Gupta et al. ²¹	2013	Y			
Nelson et al. ²²	2015		Y		
Ahmad et al. ²³	2016	Y	Y	Y	
Radu et al. ²⁴	2018	Y	Y		
Mathew and Soliman ²⁵	2020	Y			
Mallick ²⁶	2023	Y	Y		
Gates et al. ⁴	2000	Y	Y		
Mentz et al. ⁵	2003	Y			Y
Menon et al. ⁶	2002	Y			
Kim et al. ⁷	2008	Y	Y		
Purcarea ⁸	2019	Y	Y		
Purcarea ⁹	2019			Y	Y
Ball and Lillis ¹⁰	2001	Y	Y	Y	
Andersen ¹¹	2005	Y	Y	Y	Y
Greenberg et al. ¹²	2004	Y	Y		
Ogle ¹³	2010	Y			Y
Evans ¹⁴	2006		Y	Y	
Richter et al. ¹⁵	2014		Y		

DISCUSSION

Critical success factors in digital presence and attracting more patients through optimized SEO

The strategic use of SEO and digital marketing tools, such as engaging websites, social media, etc., are pivotal for building trust, increasing visibility, and nurturing patient loyalty. These factors collectively enhance a strong digital presence, benefiting patient satisfaction, hospitals, and healthcare organizational performance.

Key factors affecting digital presence and engagement

Research spanning from 2000 and 2023 (**Table 2**) highlights the key factors that contribute to SEO success in the healthcare sector. The findings emphasize the importance of optimized SEO, engaging websites, social media presence, and the use of keywords in enhancing digital presence and patient engagement. Improving and considering all these factors helps to maintain the reputation, build brand image, and customer loyalty while also boosting positive word of mouth.

- a) **Optimized SEO:** SEO is the backbone of digital presence, ensuring the hospital's website ranks higher on search engines. By utilizing strategic keywords and well-optimized content, hospitals can attract more potential patients and improve their online visibility.¹⁶
- b) **Engaging Websites:** Hospitals gain more patients by developing user-friendly and visually appealing websites. These platforms provide vital information, run targeted advertisements, and serve as the first point of contact for those seeking healthcare services. Websites that are easy to navigate and contain comprehensive healthcare resources create a positive first impression.
- c) **Social Media Presence:** Social media platforms offer direct communication between hospitals and patients. Hospitals can use these platforms to share informative videos, blog posts, and physicians' updates, attracting potential patients and enhancing trust and credibility.
- d) **Keywords:** Keywords are the cornerstone of effective SEO. Strategically selected keywords help hospitals appear in search results relevant to their services. Strong and targeted keywords ensure the right audience is reached, driving website traffic and increasing patient inquiries.

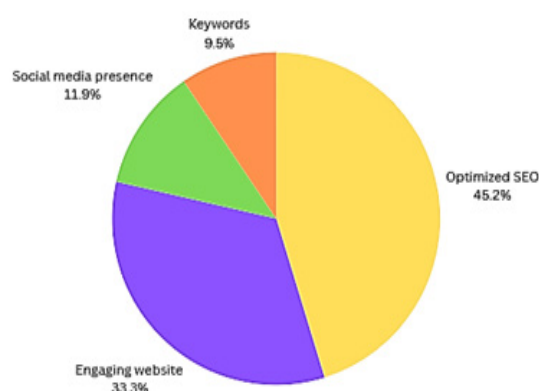


Figure 1 Distribution of Critical Factors in Digital Presence

The pie chart (**Figure 1**) represents the relative importance of these key factors:

- a) **Optimized SEO (45.2%)** is the largest segment and is the most significant factor emphasizing its role in improving search engine rankings to attract and retain patients.
- b) **Engaging Website (33.3%)** follow as a crucial element, underlining the need for a user-friendly, interactive site to engage visitors.
- c) **Social Media Presence (11.9%)** represents the third most important factor, driving brand awareness and traffic, though not as crucial as SEO or website engagement.
- d) **Keywords (9.5%)** remain a crucial yet specific factor in driving website traffic and increasing search engine visibility.

Additional factors enhancing digital presence

- a) **Positive Reviews:** Patient reviews on quality care and satisfaction help build trust with potential patients.
- b) **Consistency and Monitoring:** Regular website updates, actively managing social media, and continuous monitoring of SEO maintain engagement and competitiveness.
- c) **Brand Image and Loyalty:** A strong digital presence boosts reputation, fosters loyalty, and promotes positive word-of-mouth.

By consistently applying these strategies, hospitals can boost their digital visibility, build patient trust, strengthen brand value, and cultivate long-term loyalty. These factors are essential in attracting and retaining patients in today's digital-first healthcare environment.

CHALLENGES AND LIMITATIONS

SEO in healthcare marketing improves digital presence, boosts patient engagement, and drives institutional growth. However, this research identifies several challenges and limitations healthcare providers confront in executing SEO strategies.

- a) **Dynamic SEO and Algorithms:** SEO strategies must continuously adapt to frequent updates in search engine algorithms, which can be resource-intensive and disruptive.¹²⁻¹³
- b) **Compliance with Healthcare Regulations:** Healthcare organizations must adhere to strict privacy laws such as HIPAA and GDPR, which limit flexibility in content and keyword optimization.
- c) **Limited SEO Expertise:** Many healthcare businesses lack internal SEO knowledge, often leading them to depend on external agencies, which can be expensive and may not always align with their specific needs.¹⁷
- d) **High Competition:** The healthcare industry is highly competitive, making it hard to achieve high search engine visibility.⁴⁻⁵
- e) **Content Creation Challenges:** Creating content that is both medically accurate and optimized for search engines is challenging and requires expertise, leading to slower content production.⁶⁻⁹
- f) **Local SEO Issues:** Ensuring consistent information across local listings is complex and impacts patient acquisition efforts.¹⁴⁻¹⁵
- g) **Measuring SEO Impact:** Evaluating the effectiveness of SEO and its return on investment (ROI) can be challenging in healthcare, as benefits are not always immediately visible.¹⁸
- h) **User Trust and Behavior:** Achieving high search rankings does not necessarily lead to patient trust. Building trust requires good reviews, authoritative content, and maintaining a robust online reputation..^{19,8,9}
- i) **Mobile Optimization:** Making websites mobile-friendly is essential for both SEO and user experience. Inadequate mobile optimization can negatively affect search engine rankings.⁸⁻⁹
- j) **Integration with Other Marketing Efforts:** SEO must be integrated with other

digital marketing strategies, such as social media and online advertising, to ensure consistent branding.¹⁴⁻¹⁵

CONCLUSION

This literature review explored the role of Search Engine Optimization in enhancing digital presence and marketing strategies within the healthcare sector. By optimizing website content, keywords, and user experience, healthcare providers can expand their reach, create credibility, and cultivate patient trust. Effective SEO strategies greatly improve the accessibility to medical information and services, while promoting positive brand perception and patient loyalty. Additionally, incorporating social media, mobile optimization, and local SEO aligns healthcare marketing with evolving patient behaviours in the digital age.

However, the study identifies several challenges and limitations associated with SEO in the healthcare sector, including the dynamic nature of search engine algorithms, legal restrictions, the lack of digital know-how in healthcare settings, and the difficulties of consistently producing high-quality material and measuring SEO's impact on patient satisfaction and organizational performance. To navigate these challenges, healthcare organizations must continuously adapt to the changing digital landscape and explore innovative approaches.

In conclusion, despite these challenges, SEO still has significant potential to revolutionize healthcare marketing by enhancing patient engagement, improving outcomes, and providing a competitive advantage. Healthcare organizations should implement comprehensive strategies that integrate SEO with other digital marketing tools such as email, content, and social media marketing to fully harness its benefits. Future research should concentrate on developing robust measurement methods, exploring tailored SEO strategies for healthcare, and examining the interplay between SEO and broader digital marketing efforts.

REFERENCES

1. Jackson JL, Kroenke K. Patient satisfaction and quality of care. *Mil Med.* 1997 Apr;162(4):273-7.
2. Abdalwahid SM, Yousif RZ, Kareem SW. Enhancing Approach Using Hybrid Pailler and RSA for information security in bigdata. *Appl Comput Sci.* 2019;15(4):63-74.
3. Rehman KU, Khan MNA, Zulfikar S, Bhutto A. The Foremost Guidelines for Achieving Higher Ranking in Search Results through Search Engine Optimization. *Int J Adv Sci Technol.* 2013;52:101-110.
4. Gates RH, McDaniel CD, Braunsberger K. Modeling Consumer Health Plan Choice Behavior To Improve Customer Value and Health Plan Market Share. *J Bus Res.* 2000;48(3):247-257.
5. Mentz GS, Mentz GS, Whiteside R. The Revenue Impact of Online Search Engine Marketing Technology for Medical Clinics. *J Inf Technol Impact.* 2003;3(2):101-110.
6. Menon AM, Deshpande AD, Perri M, Zinkhan GM. Trust in online prescription drug information among internet users: the impact on information search behavior after exposure to direct-to-consumer advertising. *Health Mark Q.* 2002;20(1):17-35.
7. Kim KH, Kim KS, Kim DY, Kim JH, Kang SH. Brand equity in hospital marketing. *J Bus Res.* 2008;61(1):75-82.
8. Purcarea IM. Digital Marketing Trends Transforming Marketing. Digital Marketing to Patients. *Holist Mark Manag J.* 2019;9(2):14-21.
9. Purcarea VL. The impact of marketing strategies in healthcare systems. *J Med Life.* 2019;12(2):93-96.
10. Ball MJ, Lillis J. E-health: transforming the physician/patient relationship. *Int J Med Inform.* 2001 Apr;61(1):1-10.
11. Andersen PH. Relationship marketing and brand involvement of professionals through web-enhanced brand communities: the case of Coloplast. *Ind Mark Manag.* 2005 Apr;34(1):39-51.
12. Greenberg L, D'Andrea G, Lorence D. Setting the Public Agenda for Online Health Search: A White Paper and Action Agenda. *J Med Internet Res.* 2004 June;6(2):e18.
13. Ogle JA. Improving Web Site Performance Using Commercially Available Analytical Tools. *Clin Orthop Relat Res.* 2010;468(10):2604-11.
14. Evans WD. How social marketing works in health care. *BMJ.* 2006;332(7551):1207-10.
15. Richter JP, Muhlestein DB, Wilks CEA. Social Media: How Hospitals Use It, and Opportunities for Future Use. *J Healthc Manag.* 2014;59(6):447-60.
16. Fong CH, Goh YN. Why brand equity is so important for private healthcare? View from an emerging market. *Int J Healthc Manag.* 2020;14(4):1198-1205.
17. Kay MJ. Healthcare marketing: what is salient? *Int J Pharm Healthc Mark.* 2007 Jan;1(3):247-263.
18. Hussain WMHW, Rahman MNA, Mujani WK, Zainol ZA, Yaakub NI. Internet marketing strategy for Malaysia medical practitioners. *J Med Mark.* 2012;12(1):13-21.

19. Rooney K. Consumer-Driven Healthcare Marketing: Using the Web to Get Up Close and Personal. *J Healthc Manag.* 2009;54(4):241-251.
20. Cudmore BA, Bobrowski PE, Kiguradze T. Encouraging consumer searching behavior on healthcare websites. *J Consum Mark.* 2011 Jun; 28(4):290-9.
21. Gupta A, Tyagi M, Sharma D. Use of Social Media Marketing in Healthcare. *J Health Manag.* 2013 Jun;15(2):293-302.
22. Nelson KL, Shroff B, Best AM, Lindauer SJ. Orthodontic marketing through social media networks: The patient and practitioner's perspective. *Angle Orthod.* 2015 Mar;85(6):1035-41.
23. Ahmad NS, Musa R, Harun MHM. The Impact of Social Media Content Marketing (SMCM) towards Brand Health. *Procedia Econ Finan.* 2016;37(1):331-336.
24. Radu M, Radu G, Condurache A, Lorin Purcărea V. The influence of digital media on the success of a health care unit. *J Med Life.* 2018 Sep;11(3):254-6.
25. Mathew V, Soliman M. Does digital content marketing affect tourism consumer behavior? An extension of technology acceptance model. *J Consum Behav.* 2020 Aug;20(1):61-75.
26. Mallick SU. Exploring the success factor of digital marketing: A case study of private healthcare organization in an emerging economy. *Int J Exper Learn Case Stud.* 2023 Mar; 18;7(2):110-35.