

The Evolution of Digital Marketing in Healthcare: From Traditional Advertising to Personalized Online Campaigns

Mr. Swapnil Narake

Research Scholar,

Institute of Business Management & Rural Development. Vadgaon Gupta (Vilad Ghat), P.O.
MIDC, Ahmednagar. Pin No-414111. Ahmednagar, (MS) India.

swapnilnarake@gmail.com

Dr. Sanjay Dharmadhikari

Research Guide, Director,

Institute of Business Management & Rural Development. Vadgaon Gupta (Vilad Ghat), P.O.
MIDC, Ahmednagar. Pin No-414111. Ahmednagar, (MS) India.

Dharmadhikari02@gmail.com

Abstract

Transitioning from traditional advertising techniques to highly personalized digital campaigns, the healthcare sector has seen a paradigm change in marketing strategy. This study examines the development of digital marketing inside the healthcare enterprise, emphasizing patron involvement, facts-driven customisation, and the efficacy of on-line platforms. The research, which has 200 respondents as its sample size, looks at important variables affecting the uptake and effectiveness of digital marketing in the healthcare industry. While demographic data offers insights into the various types of healthcare consumers, quantitative data analysis investigates the preferences of patients and healthcare professionals. The results demonstrate the expanding significance of AI-powered and consumer data-driven personalized marketing in elevating patient engagement, boosting healthcare outcomes, and propelling agency growth.

Keywords

Digital Marketing, Social Media Platforms, Healthcare Industry, Personalized Campaigns, Patient Engagement, Data-Driven Marketing.

1. Introduction

Emphasizing its relevance in the digital age, this study examines the quickly expanding importance of digital marketing in healthcare services. To increase patient engagement, foster trust, and improve service delivery, healthcare businesses have increasingly used digital marketing. Due to limitations on in-person contacts and the growing demand for telehealth services, the COVID-19 pandemic made traditional marketing strategies less successful, which drove the transition toward digital platforms (Pasaribu et al., 2023).

A notable change in the way patients interact with healthcare services is shown by the healthcare sector's growing dependence on digital marketing. Personalized digital marketing campaigns provide a new way to enhance patient engagement and communication by customizing material according to personal preferences and medical history. Healthcare marketers may more successfully target certain audiences by combining artificial intelligence and big data, which will result in a more efficient and personalized experience. This change promotes patient-centered care by increasing the relevance of the information given and fostering confidence between patients and healthcare professionals.

By providing patients with access to their health data, digital solutions like wearables and mHealth applications empower individuals and support a patient-centric approach to healthcare (Cuff, 2023). Additionally, hospitals may increase their reach, draw in new patients, and boost revenue production by using digital marketing strategies to provide online services that are user-friendly, accessible, and personalized. Even if these developments are revolutionary, they also present problems like digital inequality and data privacy issues that need to be resolved for everyone to have access to healthcare (Cuff, 2023).

Adoption of these tactics, however, raises concerns about how they may affect patient outcomes and engagement. While some contend that by providing patients with more relevant information, personalized campaigns enhance the quality of treatment, others raise privacy and data security issues. Furthermore, various sectors of healthcare experts have differing opinions, which raises the possibility that not everyone agrees these campaigns are beneficial. Therefore, it is essential to comprehend the elements that affect the effectiveness of personalized patient engagement digital marketing campaigns in the healthcare industry in

order to enhance patient engagement and attain favorable health outcomes (Yuriy P, Anastasiya N., 2023).

All things considered, including digital marketing into healthcare plans not only helps the sector expand but also strengthens the bonds between patients and healthcare providers, which increases patient happiness and loyalty.

2. Review of Literature

Its increasing importance in improving patient engagement, trust, and loyalty is shown by the literature on the topic of content marketing in healthcare, especially as it relates to YouTube healthcare channels. Due to lockdowns and safety concerns, traditional in-person healthcare services were restricted during the COVID-19 pandemic, which hastened the transition to digital platforms. In order to contact and interact with patients via online platforms like YouTube, several healthcare institutions used digital marketing strategies (Purcarea, 2019). According to studies, patients are depending more and more on digital platforms for information about healthcare, treatment alternatives, and provider reviews (Udeozor Onyebuchi Francis et al., 2023).

Recent research has thoroughly examined the function of digital marketing in the healthcare industry, emphasizing how it may affect patient behavior and the provision of healthcare services. Numerous researches have looked at how patient engagement and confidence in healthcare providers are impacted by digital marketing tactics like personalized content. According to a research by Ma & Sun (2020), when paired with AI-driven data analytics, personalized healthcare ads enhanced patient connection with healthcare services. This supports recent studies that highlight the value of personalized digital communication in building patient trust by indicating that patients are more likely to react favorably when the information is tailored to their individual health needs and preferences (Chen & Wang, 2021).

YouTube and other digital platforms may greatly influence patient behavior via content marketing, increasing patient happiness and engagement. For instance, YouTube channels may be used by healthcare practitioners to answer often asked questions, provide important health information, and build viewer trust (Marques & Ferreira, 2020). The use of digital technologies by businesses to provide customers with more accessible and personalized

health experiences is in line with the larger trend of digital transformation in healthcare (Golinelli et al., 2020).

Businesses need to have a pool of people with digital skills in order to promote digital agripreneurship, according to Chaudhari and Anute (2022). By proving its value to farmers and how it differentiates from other m-Agri apps, the Uphoven app will draw in additional farmers who do not presently use it. Advertising is a deliberate kind of communication that employs both spoken and nonverbal cues. For the benefit of farmers, the government and many businesses are funding agriculture marketing campaigns. In order to double farmer productivity and triple farmer income in the next years, digital agriculture marketing will be essential.

However, worries about data security and privacy have become important variables influencing how open patients are to digital marketing. While personalized digital marketing may greatly enhance patient outcomes, it also presents ethical concerns around the collection and use of personal health data (Brothers & Rothstein, 2015). According to studies, patients' desire to participate in digital healthcare campaigns may be raised by reducing these worries and implementing strong privacy policies and openness in data utilization. To maintain patient trust and engagement over time, it is crucial to strike a balance between the advantages of customization and the need for strict privacy regulations (Sawesi et. al., 2016).

Furthermore, by enhancing patients' overall experiences and increasing the transparency and accessibility of health services, the use of digital content marketing tactics has been shown to promote patient loyalty (Reis et al., 2018). A strong YouTube video strategy has the ability to enhance a healthcare provider's reputation and draw in more clients, since consumers of healthcare are increasingly using digital platforms and online evaluations to share their experiences (Massaro, 2021).

3. Research Methodology

For the present study, a cross-sectional survey research approach was found suitable. With an emphasis on personalized online campaigns, the study sought to examine the evolution of digital marketing in healthcare. A sample of 200 respondents was chosen, including digital content producers in the healthcare industry, doctors engaged in patient education, and healthcare marketing specialists. To provide a thorough understanding of how marketing

strategies have changed over time, these participants were selected from a variety of healthcare facilities and digital marketing firms.

In order to guarantee participation from a variety of industries, including private hospitals, healthcare startups, pharmaceutical corporations, and online health platforms, a stratified random selection approach was used. Both geographic areas and healthcare facility types (such as hospitals, clinics, and digital platforms) were used to stratify the population. The inclusion of many viewpoints on the evolution of digital marketing in healthcare was secured by this technique.

Structured online surveys were used to collect data, guaranteeing a wide audience and effective data collection. 20 closed-ended questions on the evolution of healthcare advertising and marketing, using digital technologies, and the role of customized online campaigns had been covered in the questionnaire. 5 demographic questions were also used to collect data on the respondents' years of experience, area, professional background, and degree of engagement in healthcare marketing.

Assessing the move from traditional advertising to personalized online campaigns in healthcare using digital marketing strategies was the main objective of this study. The second objective was to investigate the role of digital platforms like YouTube in boosting patient engagement and healthcare services via personalized content.

The hypotheses for the study are as follows:

Hypothesis 1:

H0: "There is no significant association between the adoption of personalized digital marketing strategies and the enhancement of patient engagement in healthcare."

H1: "There is a significant association between the adoption of personalized digital marketing strategies and the enhancement of patient engagement in healthcare."

Hypothesis 2:

H0: "There is no significant difference in the perceptions of healthcare professionals across various sectors with respect to the effectiveness of personalized online campaigns in healthcare marketing."

H1: "There is a significant difference in the perceptions of healthcare professionals across various sectors with respect to the effectiveness of personalized online campaigns in healthcare marketing."

4. Empirical Results

Table 1: What is your age group?

Age Group	Frequency	Percentage	Valid Percentage	Cumulative Percentage
18-25 years	37	18.5%	18.5%	18.5%
26-35 years	46	23.0%	23.0%	41.5%
36-45 years	56	28.0%	28.0%	69.5%
46-60 years	45	22.5%	22.5%	92.0%
Above 60 years	16	8.0%	8.0%	100.0%
Total	200	100%	100%	

Interpretation:

The majority of responders (28%) are between the ages of 36 and 45, according to the data, with those in the 26–35 age range coming in second (23%). This suggests that a sizable percentage of people actively involved in healthcare digital marketing are middle-aged adults, but less people over 60 (8%) are involved in this field.

Table 2: What is your gender?

Gender	Frequency	Percentage	Valid Percentage	Cumulative Percentage

Male	85	42.5%	42.5%	42.5%
Female	114	57.0%	57.0%	99.5%
Other	1	0.5%	0.5%	100.0%
Total	200	100%	100%	

Interpretation:

The majority of respondents are female (57%), while males make up 42.5% of the sample. A small percentage (0.5%) identify as other genders. This suggests that women might be more actively engaged in healthcare digital marketing, either as professionals or consumers.

Table 3: What is your highest level of education?

Education Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
High school diploma	23	11.5%	11.5%	11.5%
Undergraduate degree	68	34.0%	34.0%	45.5%
Postgraduate degree	78	39.0%	39.0%	84.5%
Doctorate	19	9.5%	9.5%	94.0%
Other	12	6.0%	6.0%	100.0%
Total	200	100%	100%	

Interpretation:

A postgraduate degree (39%) or an undergraduate degree (34%), respectively, is held by the majority of respondents. Given the specialized nature of digital marketing in the healthcare industry, it is not surprising that the population is highly educated. Only a small percentage (11.5%) have completed high school.

Table 4: What is your current occupation?

Occupation	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Healthcare professional	46	23.0%	23.0%	23.0%
Healthcare administrator	35	17.5%	17.5%	40.5%
Patient/Consumer	37	18.5%	18.5%	59.0%
Digital marketing professional	59	29.5%	29.5%	88.5%
Other	23	11.5%	11.5%	100.0%
Total	200	100%	100%	

Interpretation:

Healthcare professionals make up the second-largest category in our sample (29.5%), followed by digital marketing professionals. Although a sizable majority of respondents are both patients and healthcare administrators, this suggests that digital marketers are playing a significant role in influencing the healthcare sector.

Table 5: How frequently do you use digital devices?

Frequency of Device Use	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Daily	138	69.0%	69.0%	69.0%
Several times a week	32	16.0%	16.0%	85.0%
Once a week	16	8.0%	8.0%	93.0%
Rarely	11	5.5%	5.5%	98.5%
Never	3	1.5%	1.5%	100.0%
Total	200	100%	100%	

Interpretation:

The vast majority of respondents (69%) use digital devices daily, indicating high engagement with technology, which is critical for healthcare digital marketing. Only 1.5% reported never using digital devices, suggesting that almost everyone in the sample engages with technology to some extent.

Table 6: How often do you encounter digital marketing campaigns for healthcare services?

Frequency of Encounter	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Daily	86	43.0%	43.0%	43.0%
Weekly	55	27.5%	27.5%	70.5%

Monthly	38	19.0%	19.0%	89.5%
Rarely	17	8.5%	8.5%	98.0%
Never	4	2.0%	2.0%	100.0%
Total	200	100%	100%	

Interpretation:

A substantial proportion of respondents (43%) encounter healthcare digital marketing campaigns daily, while 27.5% come across them weekly. This suggests that exposure to healthcare digital marketing is frequent, reflecting its growing role in the industry.

Table 7: Which digital platform do you primarily use to access healthcare-related information?

Platform	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Social media	57	28.5%	28.5%	28.5%
Search engines	82	41.0%	41.0%	69.5%
Healthcare apps	31	15.5%	15.5%	85.0%
Email campaigns	16	8.0%	8.0%	93.0%
Other	14	7.0%	7.0%	100.0%
Total	200	100%	100%	

Interpretation:

According to 41% of respondents, search engines are the most popular way to get information on healthcare. While healthcare applications are utilized less often (15.5%), social media is still a significant source (28.5%). This suggests that healthcare search engines will continue to be an important tool for professionals and patients looking for information about healthcare.

Table 8: How likely are you to trust healthcare information provided through digital marketing campaigns?

Trust Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very likely	46	23.0%	23.0%	23.0%
Likely	58	29.0%	29.0%	52.0%
Neutral	49	24.5%	24.5%	76.5%
Unlikely	32	16.0%	16.0%	92.5%
Very unlikely	15	7.5%	7.5%	100.0%
Total	200	100%	100%	

Interpretation:

23% of respondents said they are very likely to accept healthcare information from digital marketing campaigns, while the majority (29%) said they are likely to trust such material. Nonetheless, 23.5% of respondents express mistrust overall (improbable and extremely unlikely), and 24.5% are indifferent on the matter, suggesting some degree of doubt. This suggests that despite the fact that digital marketing may effectively communicate healthcare information, some people still have significant trust issues.

Table 9: How important is personalized content (based on your medical history or preferences) in healthcare marketing for you?

Importance Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very important	66	33.0%	33.0%	33.0%
Important	57	28.5%	28.5%	61.5%
Neutral	38	19.0%	19.0%	80.5%
Not important	28	14.0%	14.0%	94.5%
Not at all important	11	5.5%	5.5%	100.0%
Total	200	100%	100%	

Interpretation:

According to the findings, 33% of respondents said that personalized content is very important, and 28.5% said that it is significant, indicating that it is highly regarded in healthcare marketing. While 19.5% (not important and not at all important combined) do not favor customization, a smaller percentage (19%) is indifferent. This suggests that the majority of healthcare marketing respondents strongly favor focused and personalized marketing.

Table 10: Do you prefer digital marketing over traditional marketing (TV ads, billboards, print media) for healthcare services?

Preference Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly prefer digital marketing	64	32.0%	32.0%	32.0%

Somewhat prefer digital marketing	47	23.5%	23.5%	55.5%
Neutral	42	21.0%	21.0%	76.5%
Somewhat prefer traditional marketing	28	14.0%	14.0%	90.5%
Strongly prefer traditional marketing	19	9.5%	9.5%	100.0%
Total	200	100%	100%	

Interpretation:

With 32% strongly favoring digital platforms for healthcare services and 23.5% moderately favoring them, there is a clear preference for digital marketing. However, 23.5% (somewhat and strongly) still support traditional marketing strategies, while 21% are agnostic. Although traditional media still has relevance for certain marketers, this indicates a trend towards digital marketing.

Table 11: How effective do you find personalized online healthcare campaigns in addressing your specific healthcare needs?

Effectiveness Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very effective	59	29.5%	29.5%	29.5%
Effective	61	30.5%	30.5%	60.0%

Neutral	43	21.5%	21.5%	81.5%
Ineffective	27	13.5%	13.5%	95.0%
Very ineffective	10	5.0%	5.0%	100.0%
Total	200	100%	100%	

Interpretation:

The value of customized marketing in healthcare is shown by the fact that the majority of respondents (60%) believe personalized online healthcare campaigns to be successful or extremely effective in meeting their requirements. However, 21.5% are indifferent, and 18.5% believe such campaigns are unsuccessful, signaling that although customization works for many, there are still gaps in its perceived effectiveness.

Table 12: What factors influence your decision to engage with healthcare services advertised online?

Factors	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Convenience of service	87	43.5%	43.5%	43.5%
Trust in the provider	65	32.5%	32.5%	76.0%
Personalization of campaign	31	15.5%	15.5%	91.5%
Cost of services	12	6.0%	6.0%	97.5%

Other	5	2.5%	2.5%	100.0%
Total	200	100%	100%	

Interpretation:

Convenience (43.5%) and trust in the healthcare provider (32.5%) are the most important factors driving engagement with healthcare services marketed online. Only 6% of respondents emphasize the cost of services, and personalization of the campaign plays a smaller role (15.5%). This emphasizes the significance of accessibility and trust in promoting engagement with digital healthcare ads.

Table 13: How frequently do you interact with healthcare providers through digital channels (websites, apps, social media)?

Interaction Frequency	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Frequently	52	26.0%	26.0%	26.0%
Occasionally	81	40.5%	40.5%	66.5%
Rarely	48	24.0%	24.0%	90.5%
Never	19	9.5%	9.5%	100.0%
Total	200	100%	100%	

Interpretation:

With 26% of respondents participating regularly and 40.5% sometimes, interaction with healthcare providers via digital platforms is prevalent. While digital healthcare connection is common, a significant percentage of individuals still prefer traditional means or do not

believe it essential, as shown by the fact that a significant part (24%) engages seldom and 9.5% never do so.

Table 14: Do you believe that digital marketing improves your access to healthcare services?

Agreement Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	73	36.5%	36.5%	36.5%
Agree	61	30.5%	30.5%	67.0%
Neutral	42	21.0%	21.0%	88.0%
Disagree	16	8.0%	8.0%	96.0%
Strongly disagree	8	4.0%	4.0%	100.0%
Total	250	100%	100%	100%

Interpretation:

The data indicates that a significant majority of respondents (67.0%) either strongly agree or agree that digital marketing enhances their access to healthcare services. A smaller portion remains neutral (21.0%), while only 12.0% express disagreement, suggesting a positive perception of digital marketing's role in improving healthcare accessibility.

Table 15: Have you ever booked an appointment or consulted a doctor due to a healthcare-related digital advertisement?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage

Yes	73	36.5%	36.5%	36.5%
No	127	63.5%	63.5%	100.0%
Total	200	100%	100%	

Interpretation:

Of the respondents, 36.5% have booked an appointment or consulted a doctor based on a healthcare-related digital advertisement, showing that a significant number of individuals are influenced by digital marketing in healthcare. However, a larger portion, 63.5%, has not, which indicates that many still prefer traditional or alternative methods for healthcare engagement.

Table 16: What type of content do you find most helpful in healthcare digital marketing?

Content Type	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Educational videos	82	41.0%	41.0%	41.0%
Informative articles	46	23.0%	23.0%	64.0%
Testimonials/reviews	37	18.5%	18.5%	82.5%
Promotional offers	22	11.0%	11.0%	93.5%
Other	13	6.5%	6.5%	100.0%
Total	200	100%	100%	

Interpretation:

According to 41% of respondents, educational videos are the most beneficial kind of content for digital marketing in the healthcare industry. Consumers choose content that teaches and creates trust over solely promotional materials, as seen by the fact that informative articles and testimonials were also appreciated while promotional offers and other content kinds had less of an impact.

Table 17: How do you feel about receiving healthcare-related advertisements through email or SMS?

Feeling	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very positive	37	18.5%	18.5%	18.5%
Positive	59	29.5%	29.5%	48.0%
Neutral	54	27.0%	27.0%	75.0%
Negative	34	17.0%	17.0%	92.0%
Very negative	16	8.0%	8.0%	100.0%
Total	200	100%	100%	

Interpretation:

Approximately 48% of respondents feel either positive or very positive about receiving healthcare-related advertisements through email or SMS, suggesting that these methods are somewhat effective. However, 27% remain neutral, and 25% express negative feelings, implying that there may be discomfort or irritation associated with these channels.

Table 18: How important is the use of data analytics and artificial intelligence in delivering personalized healthcare advertisements to you?

Importance Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very important	73	36.5%	36.5%	36.5%
Important	61	30.5%	30.5%	67.0%
Neutral	46	23.0%	23.0%	90.0%
Not important	14	7.0%	7.0%	97.0%
Not at all important	6	3.0%	3.0%	100.0%
Total	200	100%	100%	

Interpretation:

A total of 67% of respondents consider data analytics and artificial intelligence important or very important in delivering personalized healthcare advertisements, highlighting the growing demand for customized marketing strategies. Only 10% find it unimportant, while the rest remain neutral, indicating that personalization through advanced technologies is widely appreciated but not universally essential.

Table 19: How satisfied are you with the privacy measures taken by healthcare companies when using your personal data for marketing purposes?

Satisfaction Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very satisfied	43	21.5%	21.5%	21.5%
Satisfied	66	33.0%	33.0%	54.5%

Neutral	52	26.0%	26.0%	80.5%
Dissatisfied	29	14.5%	14.5%	95.0%
Very dissatisfied	10	5.0%	5.0%	100.0%
Total	200	100%	100%	

Interpretation:

While 54.5% of respondents are either satisfied or very satisfied with the privacy measures taken by healthcare companies, a significant 26% remain neutral, indicating some uncertainty about the robustness of these measures. Additionally, 19.5% express dissatisfaction, revealing ongoing concerns about data privacy in healthcare marketing.

Table 20: Do you believe that healthcare companies should increase transparency in how they use patient data for digital marketing?

Opinion	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	81	40.5%	40.5%	40.5%
Agree	63	31.5%	31.5%	72.0%
Neutral	34	17.0%	17.0%	89.0%
Disagree	16	8.0%	8.0%	97.0%
Strongly disagree	6	3.0%	3.0%	100.0%
Total	200	100%	100%	

Interpretation:

A significant majority (72%) of respondents agree or strongly agree that healthcare companies should increase transparency in their use of patient data for digital marketing, underscoring the demand for greater clarity and ethical data handling practices. However, 17% remain neutral, and 11% disagree, suggesting some level of acceptance or trust in current practices.

Table 21: Do you feel that digital marketing in healthcare has contributed to better patient engagement and communication?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	69	34.5%	34.5%	34.5%
Agree	76	38.0%	38.0%	72.5%
Neutral	34	17.0%	17.0%	89.5%
Disagree	14	7.0%	7.0%	96.5%
Strongly disagree	7	3.5%	3.5%	100.0%
Total	200	100%	100%	

Interpretation:

A majority of respondents (72.5%) agree or strongly agree that digital marketing has contributed to better patient engagement and communication, indicating that digital tools are having a positive impact. However, 17% remain neutral, and 10.5% feel otherwise, suggesting room for improvement in how digital marketing can enhance patient-provider interactions.

Table 22: Have you noticed an improvement in the quality of healthcare services as a result of digital marketing campaigns?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Significant improvement	46	23.0%	23.0%	23.0%
Some improvement	82	41.0%	41.0%	64.0%
Neutral	34	17.0%	17.0%	81.0%
Little improvement	22	11.0%	11.0%	92.0%
No improvement	16	8.0%	8.0%	100.0%
Total	200	100%	100%	

Interpretation:

Among respondents, 64% believe that digital marketing has led to at least some improvement in the quality of healthcare services, with 23% reporting a significant improvement. However, 17% remain neutral, while 19% feel there has been little to no improvement, suggesting that while digital marketing positively impacts healthcare quality for many, its effectiveness is not universal.

Table 23: Do you believe that personalized digital marketing can contribute to better healthcare outcomes?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	69	34.5%	34.5%	34.5%
Agree	73	36.5%	36.5%	71.0%
Neutral	32	16.0%	16.0%	87.0%
Disagree	18	9.0%	9.0%	96.0%
Strongly disagree	8	4.0%	4.0%	100.0%
Total	200	100%	100%	

Interpretation:

A strong majority, 71%, either agree or strongly agree that personalized digital marketing can contribute to better healthcare outcomes, indicating a widespread belief in the potential benefits of tailored marketing. However, 16% remain neutral, and 13% disagree or strongly disagree, suggesting that a portion of the population is skeptical about the impact of personalized marketing on healthcare outcomes.

Table 24: How likely are you to recommend a healthcare service based on a positive digital marketing experience?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very likely	62	31.0%	31.0%	31.0%
Likely	71	35.5%	35.5%	66.5%

Neutral	44	22.0%	22.0%	88.5%
Unlikely	15	7.5%	7.5%	96.0%
Very unlikely	8	4.0%	4.0%	100.0%
Total	200	100%	100%	

Interpretation:

Around 66.5% of respondents are either likely or very likely to recommend a healthcare service based on a positive digital marketing experience. However, 22% are neutral, suggesting that while digital marketing can drive recommendations, its influence may not be the sole factor for a significant portion of the population. A smaller group (11.5%) is unlikely to recommend healthcare services based solely on digital marketing.

Table 25: Do you think digital marketing in healthcare will continue to grow in importance over the next five years?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	82	41.0%	41.0%	41.0%
Agree	67	33.5%	33.5%	74.5%
Neutral	31	15.5%	15.5%	90.0%
Disagree	13	6.5%	6.5%	96.5%
Strongly disagree	7	3.5%	3.5%	100.0%

Total	200	100%	100%	
-------	-----	------	------	--

Interpretation:

An overwhelming majority of respondents (74.5%) agree or strongly agree that digital marketing in healthcare will grow in importance over the next five years, indicating strong confidence in the expanding role of digital tools in healthcare communication. Only 10% disagree or strongly disagree, while 15.5% remain neutral, reflecting some uncertainty about the long-term significance of digital marketing in the healthcare sector.

Hypothesis Testing

Hypothesis 1

H₀: “There is no significant association between the adoption of personalized digital marketing strategies and the enhancement of patient engagement in healthcare”.

H₁: “There is a significant association between the adoption of personalized digital marketing strategies and the enhancement of patient engagement in healthcare”.

Table 24: Chi-Square Test for Association Between Personalized Digital Marketing and Patient Engagement

Value	df	Asymp. Sig.
Pearson Chi-Square	21.475	3
Likelihood Ratio	22.519	3
N of Valid Cases	200	

Interpretation:

With 3 degrees of freedom, the Pearson Chi-Square value is 21.475, and the Asymptotic Significance (Asymp. Sig.) is 0.000, below the conventional significance limit of 0.05. The

results show a statistically significant correlation between improving patient engagement in healthcare and using personalized digital marketing strategies.

Thus, the alternative hypothesis (H1) is accepted and the null hypothesis (H0) is rejected, indicating a substantial correlation between improved patient engagement in healthcare and personalized digital marketing strategies.

Hypothesis 2

H₀: “There is no significant difference in the perceptions of healthcare professionals across various sectors with respect to the effectiveness of personalized online campaigns in healthcare marketing”.

H₂: “There is a significant difference in the perceptions of healthcare professionals across various sectors with respect to the effectiveness of personalized online campaigns in healthcare marketing”.

Table 25: Chi-Square Test for Differences in Perceptions of Personalized Campaign Effectiveness Among Healthcare Professional

Value	Df	Asymp. Sig.
Pearson Chi-Square	18.725	4
Likelihood Ratio	19.809	4
N of Valid Cases	200	

Interpretation:

With 4 degrees of freedom, the Pearson Chi-Square value is 18.725, and the Asymptotic Significance (Asymp. Sig.) is 0.014, which is less than 0.05. This suggests that there is a statistically significant variation in how healthcare professionals view the effectiveness of personalized online campaigns in healthcare marketing across different sectors.

As a result, the alternative hypothesis (H2) is supported and the null hypothesis (H0) is denied, showing that healthcare professionals from various sectors have varied perceptions of the effectiveness of personalized digital marketing campaigns.

5. Conclusion

The current study demonstrates the strong correlation between personalized digital patient engagement strategies and improved healthcare engagement. Results show that personalized information based on each patient's unique profile not only improves engagement with healthcare services but also makes patients and providers more trustworthy. This connection highlights how vital it is for healthcare organizations to apply personalised marketing techniques that appeal to their goal market. Healthcare entrepreneurs may additionally enhance the entire patient enjoy by using information analytics and artificial intelligence to present more relevant informations to patients.

The study also shows that healthcare professionals have different opinions on the effectiveness of personalized digital campaigns. Although a lot of people agree that customized communications have advantages, worries regarding data security and privacy are still common. For healthcare to successfully use personalized marketing strategies, these problems must be resolved. The research highlights the need of continuously evaluating digital marketing strategies to make sure they meet patient requirements and industry norms.

The use of self-said records, which is prone to biases like social desirability or reminiscence bias, is a major limitation of the contemporary research. Furthermore, since the study was restrained to a selected geographic place, its findings might not be as applicable to other areas or healthcare structures. To further understand the effectiveness of personalized healthcare marketing digital strategies across various populations and healthcare settings, future research might benefit from a bigger and more varied sample.

The long-term effects of personalized digital patient marketing on patient outcomes, such as treatment compliance and general health satisfaction, should be investigated in future research. Insights into improving healthcare communication strategies might also be gained by comparing the effectiveness of different digital marketing platforms, such as social media vs email campaigns. Lastly, in order to preserve patient trust and engagement in an

increasingly digital environment, it will be essential to investigate the ethical ramifications and privacy issues related to data-driven marketing in the healthcare industry.

References

1. Brothers, K. B., & Rothstein, M. A. (2015). Ethical, legal and social implications of incorporating personalized medicine into healthcare. *Personalized medicine*, 12(1), 43–51. <https://doi.org/10.2217/pme.14.65>
2. Chaudhari G, Anute N (2022). Digital Marketing Practices Adopted by Agricultural Service Companies in India. *International Journal of Research Publication and Reviews*, 3(1), 1338-1343.
3. Chen, J., & Wang, Y. (2021). Social Media Use for Health Purposes: Systematic Review. *Journal of medical Internet research*, 23(5), e17917. <https://doi.org/10.2196/17917>
4. Cuff, A. (2023). The evolution of digital health and its continuing challenges. *BMC Digital Health*, 1(3). <https://doi.org/10.1186/s44247-022-00004-x>
5. Golinelli D, Boetto E, Carullo G, Nuzzolese AG, Landini MP, Fantini MP. Adoption of Digital Technologies in Health Care During the COVID-19 Pandemic: Systematic Review of Early Scientific Literature. *J Med Internet Res*. 2020 Nov 6;22(11):e22280. doi: 10.2196/22280. PMID: 33079693; PMCID: PMC7652596.
6. Marques, I.C., & Ferreira, J.J. (2019). Digital transformation in the area of health: systematic review of 45 years of evolution. *Health and Technology*, 10, 575 - 586.
7. Ma, L., & Sun, B. (2020). Machine learning and AI in marketing – Connecting computing power to human insights. *International Journal of Research in Marketing*, 37(3), 481–504. <https://doi.org/10.1016/j.ijresmar.2020.04.005>
8. Massaro, M. (2021). Digital transformation in the healthcare sector through blockchain technology. Insights from academic research and business developments. *Technovation*, Volume 120, February 2023, 102386. <https://doi.org/10.1016/j.technovation.2021.102386>

9. Pasaribu, S. B., Novitasari, D., & Goestjahjanti, F. S. (2023). The impact and challenges of digital marketing in the healthcare industry during the digital era and the COVID-19 pandemic. *Frontiers in Digital Health*.
10. Purcarea V. L. (2019). The impact of marketing strategies in healthcare systems. *Journal of medicine and life*, 12(2), 93–96. <https://doi.org/10.25122/jml-2019-1003>
11. Sawesi, S., Rashrash, M., Phalakornkule, K., Carpenter, J. S., & Jones, J. F. (2016). The Impact of Information Technology on Patient Engagement and Health Behavior Change: A Systematic Review of the Literature. *JMIR medical informatics*, 4(1), e1. <https://doi.org/10.2196/medinform.4514>
12. Udeozor Onyebuchi Francis, Rasheedul Haque, Abdul Rahman, Ahmed Al-Hunaiyyan (2023). The Impact of Digital Marketing on Consumer Purchasing Behaviour. *International Journal of Operations and Quantitative Management* 29(2):378-405. DOI:10.46970/2023.29.2.1
13. Yuriy P, Anastasiya N (2021). The role of content marketing in the promotion of medical goods and services. *Health Economics and Management Review* 2(1):23-29. DOI:10.21272/hem.2021.1-02.