

## Digital Marketing Strategies in Healthcare and Medical Device Industry

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### **Abstract**

Digital marketing enables a direct connection between patients and healthcare businesses and brands, establishing a communication channel that is absent in traditional marketing methods. By employing various digital marketing strategies, healthcare providers can effectively reach patients with enticing offers and timely updates. This not only aids in building brand awareness and expanding reach but also attracts potential patients. Besides, digital marketing plays a pivotal appeal in fostering positive relationships with existing patients and the community at large is far-reaching, encompassing increased engagement on social media platforms, serving as a key performance indicator for evaluating organizational values, driving demand for digital platforms, enhancing product searches among users, and fueling the need for content platforms. Healthcare numerical advertising comprehends an assortment of policies and performs that healthcare sellers employ determination patient magnetism, acquisition, and retention. This includes outreach and messaging across numerous networks such as email, SMS, social media, and search engines. By implementing a well-crafted digital marketing strategy, healthcare providers can elevate brand awareness, generate leads and conversions, establish trust with patients, and enhance patient engagement and retention rates. Medical devices are documented as a central constituent of health systems, as they play an energetic role in preventing, diagnosing, treating, and rehabilitating illnesses and diseases safely and effectively. Innovative marketing approaches leverage customer behavior data, relations, and comments to

regulate optimal branding, packaging, advertising, and target markets for specific healthcare commodities. The objectives of checking the effect of cardinal marketing in the healthcare segment on surgeons and corporate sector hospitals include exploring effective digital marketing campaigns within the medical device industry and delving into emerging technologies such as AI for personalized healthcare marketing.

**Key Words:** *Digital Advertising, Health Care, Technology, Device*

## **Introduction**

Due to the increasing dependence on digital technology, the industrial sector has undergone a transformation and the medical sector has been affected by the economic downturn. Whether it is a business, an institution, or a center, it needs the right audience to spread awareness about its products and services to increase its revenue. Adopting more customer support leads to the mounting of the firm. A well-functioning and well-structured website is very responsive to the growth of any business in the sector and should be able to cope with the most recent search algorithm updates and other cutting-edge techniques to establish a well-known brand image around the world. Most people prefer to search on digital platforms to find a trustworthy hospital, clinic, or center that offers quality medical services.

Patient-centered refers to how the drug development process includes the opinions, needs, and preferences of patients. Therefore, it is important for marketers to create relevant, relevant, and engaging content about your brand. Patient-centric marketing utilizes educational marketing strategies to engage patient audiences. A enduring-centric approach focuses on providing information about a specific disease or providing tips on how to effectively manage a specific condition, rather than generic health services. Leaders must create educational marketing strategies to engage patient populations to create a supportable brand and build a sturdier reputation. A persistent-first approach means that not only does the care experience become more engaging for patients, but that marketing efforts are as well. In addition to fulfilling the 'information-seeking' nature of modern patients, patient-centered strategies aim to create real and meaningful changes in patients' behaviors and outcomes, in a persevering-centered approach, you'll see patients taking more active roles in their health and seeking out a provider who is transparent and accessible. Understanding the role of modern patients in the clinical decision-making process is key to a patient-centered marketing strategy

## **Review of Literature**

Various technologies have the potential to decrease overall expenses accompanying with the prevention or organization of long-lasting ailments devices, Dimitrov (2016) automatically administers due to the increased availability of high-speed Internet and smartphones, a growing number of affected roles are utilizing mobile applications (apps) to address their diverse health needs.

Researcher in his study Park et al (2016) The intrinsic value comprises emotional, epistemic, and intrinsic social value. By employing this comprehensive and computerized system, tailored gadgets, rubrics, or metrics can be developed for exact kinds of healthcare services. We illustrate how this framework can be effectively utilized to create an assessment instrument for a particular healthcare facility in Korea – the Childhood Asthma Atopy Center in a general hospital situated in Korea.

The effect of cardinal technology on various industries has been significant, with many embracing it to remain competitive. In today's business landscape, digital is no longer just an enabler but is at the core of operations ambitious by the changing needs of customers, who are increasingly seeking digital solutions for their healthcare needs. This research paper aims to study the embracing of cardinal healthcare, exploring the factors driving this need and the differences in perception between patients and doctors. The study will be conducted through a structured questionnaire in Mumbai and Navi Mumbai, with hypothesis testing using F statistic. The outcome of this research will provide insight into future experimental research that can further explore these factors and minimize the gap between stakeholders, ultimately leading to greater adoption of digital healthcare.

Add to the existing literature on Keikhosrokiani et al (2018) healthcare advertising by improving the DeLone & McLean model to better understand the success factors for a patient-focused healthcare system like iHeart, as the existing model of information systems success was not suitable for evaluating the proposed system.

The goal of healthcare promotion was to learn and understand what prospective patients needed and desired to provide them with an excellent healthcare service that would ensure their satisfaction and increase their health facility to others. The main advantage of the automated media used by medical institutions to develop marketing strategies is its ability to target new and existing patients. Prasetyo & Sulistiadi (2019) study sought to analyze hospitals by using digital methods to promote, educate, and provide information about medical care services. The goal of the strategic approach was to attract both new and existing patients by offering them a low-cost and quality healthcare service.

Becker et al (2019) In this paper, the authors examine the relationship between the policy framework and the challenges faced by manufacturers and operators of medical devices, specifically medical software and artificial intelligence (AI) systems, in ensuring compliance. Additionally, the authors address practical limitations in implementation, such as the availability of notified bodies and the costs associated with the approval procedure.

The authors discuss Banerjee et al (2020) the emerging applications of IoT & big data analytics in various fields, highlighting the significant impact these technologies will have on biomedical and healthcare technology in the future. These technologies are expected to be major innovations and have already garnered substantial attention and funding from both public and private organizations. However, due to the vast number of technical reports available on technological advancements in this field, readers are encouraged to further explore and gain deeper insights into specific areas of interest.

In this paper, Aceto et al. (2020) describe the main technologies, paradigms, and application scenarios related to the emerging healthcare 4.0 concepts, the carried benefits, the novel cross-discipline challenges, and their lessons learned. In this paper, researchers and practitioners in info and communiqué technologies in the healthcare sector and those in healthcare information systems (HIS) and automation are encouraged to use their expertise to successfully and profitably address the emerging concepts and approaches of healthcare 4.0.

In the Prakash et al. (2020) study practitioners are encouraged to design patient-centered healthcare services by making use of integrated patient care (ISCP), coordinated care (COVID), and integrated quality of care (ISQ) in the process of value-creation. Understanding the interlinkages between these constructs can help in the early formulation of corrective measures and future policies, reinforcing the

importance of enduring-centered care as a foundation for delivering healthcare as an integral part of the social good.

Underscore the growing significance of the numerical budget, necessitating a reevaluation of marketing practices and a comprehensive overhaul of the marketing agenda to align with the demands and requirements of the 21st century. In this digital era, Kumar & Jaiswal (2020) companies are confronted with a plethora of innovative opportunities and challenges. Digital integration has developed an essential aspect of daily life, with various sectors swiftly adopting digital marketing. However, the pharmaceutical industry has yet to completely encirclement digital marketing, apart from the utilization of websites. While some organizations strive to comprehend the true value of digital marketing, others are incorporating it into their broader marketing strategies. The research conducted in this paper examines online sale of medicines and wellness program products, aiming to identify the factors that influence individuals to purchase these items online despite the availability of retail pharmacies. The findings of this study reveal that digital marketing holds immense potential in the current market, with digital direct marketing and discounts/offers exerting a significant influence on customers' decisions to purchase medicines.

Social media platforms who have experienced the same disease in the past can be contacted effectively to gain the interest of Asthma sufferers. Bharskar & Siddheshwar (2020) the case of medical products or medical devices, influencers may also be useful.

Innovative technologies are ever-changing. Silvera et al. (2020) There is a rising need to gain a healthier sympathy for the landscape of existing and emerging technologies relevant to the data collection of precision health. Drawing on academic literature and patent databases, as well as news sources, the present paper provides an overview of existing and emerging sensing & monitoring technologies relevant to precision health. High-demand technologies include mobile & portable devices, wearable & implantable sensors, etc.

In their paper, Liu et al (2021) healthcare professionals to explore the implications of responsible AI for businesses. By adhering to responsible AI principles, healthcare businesses can reap the benefits of increased effectiveness in social media marketing to their users. The analysis below provides research propositions and research conclusions, as well as contributions and limitations to the study.

In a Case study conducted by Wisetsri (2021) clinical research organization interviews were conducted with SEO professionals and business developers of healthcare organizations. The quantitative section includes two data-collection activities: a survey of SEO professionals and workers from various firms, and data collection from branch colleagues of top-volume keywords and traffic keywords. The outcome is that there is a lack of work being done within the digital marketing space. Another conclusion is that, in terms of digital marketing efforts, the healthcare sector lags behind other sectors.

This study shown by Weshah et al. (2021) seeks to assess the international patients in the Jordanian healthcare sector as well as e-mail marketing indicated that digital marketing strategies had a significant impact on international patients' satisfaction in the health service industry in Jordan. Furthermore, each of the digital marketing strategies had an impact on the satisfaction of the international patients in the Jordan health service industry. Social media systems were originate to be the most effective strategy for improving patient satisfaction in Health Service Organizations (HSOs). The findings of the study suggest

that HSOs should utilize digital marketing strategies to improve patient satisfaction. The practical implications of the study, as well as instructions for upcoming research, are outlined below.

As IoT adoption has skyrocketed around the world, it's become even more important to keep devices secure from hackers and external attacks. This is especially important in the medical field since data breaches have been common in healthcare facilities, labs, and insurance companies in recent years. Foley et al. (2022) looked at how operators of IoT campaigns feel about their devices and if they're taking the right security measures, especially for wireless medical devices. They found that there's a need for more policymakers to be aware of security issues that affect some IoT devices, like training to spot breaches and cyber security blunders, better features for protecting devices, and better passwords. They also came up with some recommendations for device makers.

This comprehensive review by Zhang et al (2022) explores a range for cIMDs, including conventional batteries, vigor reapers, and wireless power transfer schemes. The authors highlight the potential of WPT to eliminate percutaneous wires and reduce the need for frequent battery removal. The review covers the fundamentals of WPT, including power transfer efficiency, antenna design, miniaturization, and operating frequencies. Additionally, the review investigates wireless facts broadcast practices for implantable devices and presents advanced in-vivo and in vitro research.

In a study directed by Hammad et al (2022), the acceptance of digital marketing by healthcare providers, provided by companies in the medical field, was examined. The research aimed to achieve its goals through the utilization of a descriptive and analytical approach. The sample consisted of 400 healthcare providers in Amman, selected through convenience sampling. Data collection was primarily done through the use of a questionnaire. The key finding of the study revealed that apparent ease of use, apparent usefulness, perceived enjoyment, and perceived trust had a significant impact on the acceptance of digital marketing by healthcare providers, as provided by companies in the medical field. The study also providing endorsements for imminent determine in this area.

In the study shown by Huarng et al (2022), an expansion investigation is needed to comprehend the intent to use these devices, such as monetary cargo, data confidentiality, apparent ease of use, and supposed usefulness. The participants in this study were surveyed through a questionnaire, and path analysis was employed to analyze causality. The findings indicated that the intention to adopt wearable medical devices is more possible to be higher when they offer high data privacy, are supposed as easy to use, and provide reliable data for physical health references the economic burden associated with these devices and services is likely to decrease the intention to adopt them. Therefore, it is crucial to carefully evaluate the payment mechanism.

The researchers conducted a literature review Khiong (2022), using databases such as Google Scholar, Biomed Central, NCBI, and Proquests. They then grouped pertinent articles and prioritized those published within the previous 5 centuries, but also included articles from the last 10 years used secondary data from previous research, specifically journal articles about research variables a momentous bearing on increasing engagement on social media and marketing, analyzing organizational values, and increasing demand for digital platforms and content. During the pandemic, digital marketing has become even more important and has helped hospitals attract new patients.

Tarricone et al (2023) This paper looks at the issues that have been seen in drug and medical device approval programs around the world, like more uncertainty when it comes to getting clinical evidence

and not enough oversight for post-approval evidence. It also looks at the implications for medical device approval, healthcare-as-a-service, and coverage.

In their 2023 study, Huang et al aimed to investigate how the location of innovation impacts consumers' adoption of artificial intelligence products in healthcare. Through four experiments, the authors found rather than core products. This trend is influenced by perceived risk and is moderated by cultural norms, while tight and loose cultures moderate both direct and mediating effects.

This study, steered by Gupta (2023), seeks to digital marketing techniques in the Healthcare Services Sector of India, as well as the challenges and effectiveness of digital marketing. The methodology used in the study is a deconstructed version of the TAM (Technology Acceptance Model) using the PSL-SEM technique. Perceived Usefulness and Apparent Comfort of Use – have been analyzed as sub-dimensions derived from existing literature, thus supplementing the existing literature that does not use TAM, that the perceived usefulness of digital marketing and the perceived challenges to it have a considerable impact on the attitude towards it and its adoption.

In his recent research, Sonawane et al. (2023) examined pharmaceutical business operations and its effect on social wellbeing. The research examined both the positive and negative societal implications of digital marketing within the pharmaceutical industry. The study aimed to quantify the centrality of digital advertising in pharmaceuticals and its relationship to social issues. Interestingly, the study revealed that the influence of Digital promotion in pharmaceuticals is not always directly proportional to its out-of-the-box promotion; the acceptance of Pharmaceutical Digital Promotion by culture varies from a traditional perspective, but cannot be oversimplified. This paper provides an opportunity to investigate the contribution of Digital Marketing to the well-being of society by reducing healthcare costs insight into the fundamental connection between Digital Marketing as a platform for knowledge and information, social media Pharmaceutical Marketing, Aid to Salesforce, and Mobile Marketing.

Sheikh & Kanyal (2023) bridge the gap between traditional marketing strategies and digital marketing by providing corrective information and developing a bridge among the persistent and the hospital. The purpose of the study is to introduce the healthcare facilities obtainable by the hospital to the patient and to track the patient's flow from where they are coming from. The objectives of the study are to establish a leadership position in the hospital service field and to differentiate from competitors.

### **Key Objectives**

- 1) Investigate the impact of digital marketing in the healthcare sector on surgeons and corporate sector hospitals.
- 2) Identify successful case studies and examples of effective digital marketing campaigns within the medical device industry.
- 3) Explore emerging technologies such as AI and advanced technologies for personalized healthcare marketing, advancement in surgeries, etc & examine the role of patient-centric marketing of their care output and how it can enhance customer experience.

### **Methodology**

Research methodology attempts to approach scientifically to validate the research design. In this process, the researcher produces authentic research findings. The secondary data for the study were collected from dissimilar foundations such as technical and trade journals, articles, newspapers, magazines, the internet, periodicals, books, and reports. Provides information about the methodology typically used in research for the study, various types of sources from which the data were collected for the research purpose, and a description of the instrument of research utilized in this study. In this chapter, the details of the usage of various variables and information related to different tests are done to emphasize the nature of data validity- reliability which needs to be collected to do the analysis and interpretation of the research. Finally, the chapter gives a description of the different statistical tools and packages for analyzing the various hypotheses selected and developed with the information from the collected reviews. The descriptive research methodology was used to carry out the study. This research major deals with the description of facts. It is an explanation of the state of businesses as they exist. This comprises market surveys and real fact-finding inquiries. This study is called descriptive since it describes the different aspects of the people. The South India of Tamil Nadu, Kerala, Andhra Pradesh, and Karnataka have all geographical locations. The sample design that is used to articulate this research is Stratified Random Sampling. The sample size of which survey was 382. Statistical tools such as descriptive analysis, ANOVA, correlation analysis, regression analysis, and Factor analysis.

**TABLE - 1**  
***Population And Sample Size***

<b>States</b>	<b>Distributors</b>	<b>Sample Size</b>
Andhra Pradesh	2589	27
Karnataka	4325	46
Kerala	2295	24
Tamil Nadu	22355	232
Telangana	5215	54
<b>Total Population</b>	<b>36779</b>	<b>382</b>

**Data Analysis**

Males have 60%, the age of the respondents is 40-49 Years. Bachelor's degrees are very high. Associate Sales Representative was the highest Position to sell the medical device. Tamil Nadu has 30% of respondents. An emerging technology in the healthcare sector is the Internet of Things.

**Table - 2**  
***Profile of the Respondents***

Category	Classification	Frequency	Percentage
Gender	Male	230	60.2
	Female	152	39.8
Age	19-29 Years	105	27.5
	30-39 Years	69	18.1
	40-49 Years	122	31.9
	50-60 Years	34	8.9
	Above 60 Years	52	13.6
Education qualification	No formal qualification	94	24.6
	Diploma	103	27.0
	Undergraduate	141	36.9
	Postgraduate	44	11.5
Marital Status	Single	252	66.0
	Married	130	34.0
Position of Medical Device Sales Representative	Sales Representative	111	29
	Associate Sales Representative	123	32
	Sales Consultant	93	24
	Sales Manager	55	14
Which States are you from	Andhra Pradesh	72	18.8
	Karnataka	104	27.2
	Kerala	90	23.6
	Tamil Nadu	116	30.4
Emerging technologies in the health care sector	Smart Sensor	10	2.6
	Cloud computing	59	15.4
	Artificial intelligence	75	19.6
	Internet of Things	173	45.3
	Blockchain	65	17.0



**Table - 3**  
***Descriptive Statistics - Skills for Medical Representatives***

Skills	Mean	Standard Deviation	RANK
Commercial consciousness	4.41	.855	I
Performance skills	4.13	.894	IV
Ability to work self-sufficiently	4.01	1.217	VI
Ability to build contacts with customers	4.07	1.162	V
The ability to exchange and collaborate	4.00	1.179	VII
Patience	4.14	1.040	III
Durable relational and communiqué skills	4.20	.895	II
Organizational skills	3.75	1.030	IX
Good listening skill	3.91	1.214	VIII
Expert in selling skills	3.61	1.068	X
<b>Total</b>	<b>40.23</b>	<b>10.554</b>	

Skills for medical representatives' variables are Commercial consciousness, Performance skills, Ability to work self-sufficiently, Ability to build contacts with customers, The ability to exchange and collaborate, Patience, Durable relational and communiqué skills, Organizational skills, good listening skills, and expertise in selling skills. The first rank of the respondents is Commercial consciousness.

**Table - 4**  
***Emerging Technologies - Impact of Digital Marketing in the Healthcare Sector***

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Strengthen Relationships	Between Groups	45.334	4	11.334	12.455	<b>.000</b>
	Within Groups	343.064	377	.910		
	Total	388.398	381			
Reduce Marketing Budget	Between Groups	15.463	4	3.866	5.452	<b>.000</b>
	Within Groups	267.333	377	.709		
	Total	282.796	381			
Target Marketing Efforts	Between Groups	27.659	4	6.915	7.382	<b>.000</b>
	Within Groups	353.129	377	.937		
	Total	380.788	381			
Improve Brand Metrics	Between Groups	13.072	4	3.268	3.909	<b>.004</b>
	Within Groups	315.193	377	.836		
	Total	328.264	381			
Optimize Customer Experience	Between Groups	38.780	4	9.695	6.545	<b>.000</b>
	Within Groups	558.479	377	1.481		
	Total	597.259	381			
Personalize Marketing Activity	Between Groups	16.767	4	4.192	5.178	<b>.000</b>
	Within Groups	305.170	377	.809		
	Total	321.937	381			
Flexible Marketing Campaign	Between Groups	42.218	4	10.554	5.303	<b>.000</b>
	Within Groups	750.369	377	1.990		
	Total	792.586	381			

From the above table, it is conditional that relating to the emerging technologies - the impact of digital advertising in the healthcare sector, out of seven factors Strengthen Relationships, Reduce Marketing Budget, Target Marketing Efforts, Improve Brand Metrics, Optimize Customer Experience, Personalize Marketing Activity, Flexible Marketing Campaign show a significant difference with the location of the suspects since the significant frequency is less than the “P” value (0.05%). Hence the null theory is forbidden.

**Effective Digital Marketing Campaigns Within The Medical Device Industry**

- EDM1 - Search Engine Optimization (SEO)
- EDM2 - Pay-Per-Click (PPC) Advertising
- EDM3 - Social Media Marketing
- EDM4 - Content Marketing
- EDM5 - Email Marketing
- EDM6 - Mobile Marketing
- EDM7 - Video Marketing
- EDM8 - Automated Chatbots
- Pearson Correlation- PC
- Sig. - Significant (2-tailed)

**Table - 5**  
**Effective Digital Marketing Campaigns Within the Medical Device Industry**

Correlations									
		ED M1	ED M2	ED M3	ED M4	ED M5	ED M6	ED M7	ED M8
Search Engine Optimization (SEO)	P C	1							
	S i g								
	N	382							
Pay-Per-Click (PPC) Advertising	P C	.423**	1						
	S i g	.000							
	N	382	382						

Social Media Marketing	P C	.01 9	.22 5**	1				
	S i g	.71 3	.00 0					
	N	382	382	382				
Content Marketing	P C	.00 4	.23 0**	.71 6**	1			
	S i g	.93 6	.00 0	.00 0				
	N	382	382	382	382			
Email Marketing	P C	.02 6	.20 1**	.57 4**	.66 6**	1		
	S i g	.61 1	.00 0	.00 0	.00 0			
	N	382	382	382	382	382		
Mobile Marketing	P C	.11 5*	.24 9**	.63 5**	.81 7**	.62 5**	1	
	S i g	.02 4	.00 0	.00 0	.00 0	.00 0		
	N	382	382	382	382	382	382	
Video Marketing	P C	.13 5**	.25 2**	.73 1**	.65 6**	.62 2**	.80 0**	1
	S i g	.00 8	.00 0	.00 0	.00 0	.00 0	.00 0	
	N	382	382	382	382	382	382	382

Automated Chatbots	P	.08	.24	.66	.84	.54	.85	.71	1
	C	0	1**	0**	5**	8**	2**	2**	
	S	.11	.00	.00	.00	.00	.00	.00	
	i	8	0	0	0	0	0	0	
	g								
	N	382	382	382	382	382	382	382	382

Here, these numbers measure the strength and course of the linear rapport among the two variables. The relationship constant can range from -1 to +1, with -1 demonstrating a seamless undesirable parallel, +1 indicating a perfect positive correlation, and 0 indicating no correlation at all the factors indicate the significant value is less than 0.05. This is the p-value linked with the correlation; therefore, the conjecture is rejected.

**Table - 6**  
***Advantages Of Investing in Healthcare Digital Marketing***

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.232 <sup>a</sup>	.054	.041	1.024
a. Predictors: (Constant), Increased patient referrals, Better visibility on Search Engine, Location-based targeting, Cost-Per-Acquisition (CPA), Data-driven decisions				

The multiple regressions are shown in the table Model Summary. The perfect rapid table demonstrates that the R square for this model is 0.54. This means that 41 % of the variation in the overall advantages of investing in healthcare digital marketing can be clarified by the five independent variables. The table also shows that the adjusted R-squared of the model is 0.54.

Any time another sovereign mutable is supplementary to a multiple regression model, the R-Square will increase consequently; it becomes difficult to determine which models do the best job of explaining variation in the same dependent variable. The adjusted R Square by the number of variables is in the model. The adjustment allows the easy comparison of the descriptive authority of models with different numbers of interpreter variables. It also helps us decide how many variables to be included in our regression classic.

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.521	5	4.504	4.297	.001 <sup>b</sup>
	Residual	394.128	376	1.048		
	Total	416.649	381			
a. Dependent Variable: Which States are you from						
b. Predictors: (Constant), Increased patient referrals, Better visibility on Search Engine, Location-based targeting, Cost-Per-Acquisition (CPA), Data-driven decisions						

F ratio for the regression model which indicates the numerical significance of the overall regression model. The variance-independent variable that is related with the dependent mutable is devoted to as explained variance. The remainder of the total variance in the independent variable that is not allied with the dependent variable is stated as unexplained variance.

The larger the F ratio, the more will be the alteration in the dependent variable that is connected with the independent variable. The F ratio=4.297. The statistical significance is .001 the Significant". So, we can reject the conjecture which means there is an affiliation between independent and dependent variables.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.509	.272		5.544	.000
	Cost-Per-Acquisition (CPA)	.093	.120	.076	.774	.440
	Location-based targeting	.017	.087	.016	.196	.845
	Data-driven decisions	.151	.121	.134	1.248	.213
	Better visibility on Search Engine	-.127	.061	-.153	-2.089	.037
	Increased patient referrals	.112	.102	.098	1.099	.272
a. Dependent Variable: Which States are you from						

To regulate if single or more self-governing variables are significant predictors of factors influencing, we examine the statistics provided in the coefficient table. Out of five independent statements. Cost-per-acquisition (CPA), Location-based targeting, Data-driven decisions, Better visibility on Search engines, Increased patient referrals, .440, .845, .213, .037, .272 respectively.

**Table - 7**  
**Role of Patient-Centric Marketing**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.733
Bartlett's Test of Sphericity	Approx. Chi-Square	4039.695
	df	36
	Sig.	.000

shows that the KMO value of 0.733, indicates that the degree of common variance among the variable is quite high, therefore factor analysis can be conducted.

The principal component analysis has been administered to group the role of patient-centric marketing. It is a method of data reduction. The quantity of the modification of a particular item due to a common factor is called commonality. The preliminary price of communality in a main component investigation is 1. The role of patient-centric marketing is placed in the component's column. The extraction communalities estimate the discrepancy in each adjustable reported for the factors in the aspect solution. The smaller is less than 0.5 which indicates variables do not fit well with the aspect answer and should perhaps be fell from the analysis.

<b>Communalities</b>		
	Initial	Extraction
Conducting In-Depth Patient Research	1.000	.651
Developing Personalized Communication and Engagement Tactics	1.000	.793
Enhancing the Patient Experiences across Touch points	1.000	.728
Permitting Patients and Shared Decision-Making	1.000	.555
Building Strong Patient-Provider Relationships	1.000	.807
Improving Patient Acquisition and Retention	1.000	.833
Incorporating Patient Perspectives	1.000	.895
Tailoring Marketing Efforts	1.000	.633
Collaborating with Patient Promotion Assemblies and Influencers	1.000	.876
Extraction Method: Principal Component Analysis.		

Explicates the alteration of the 9 variables ranging from .555 to .895. It shows that the 9 variables exhibit a considerable variance from 55 percent to 89 percent. Hence it is clinched that these entire 9 variables are capable of segmenting themselves concerning the role of patient-centric marketing.

### Role Of Patient-Centric Marketing- Total Variance

The total variance analysis is important to know the rotated sum of the square value. The rotated three factors are determined based on the total Eigen values if the factor should be greater than one. The total cumulative variance is elucidated by the total percentage of variance by each retained by three factors. Gives the individual variances of the noticeable factors that emerged out of 9 factors.

Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.411	60.125	60.125	5.411	60.125	60.125	3.568	39.648	39.648
2	1.362	15.134	75.259	1.362	15.134	75.259	3.205	35.611	75.259

Extraction Method: Principal Component Analysis.

Eigen values are greater than one for two factors it is long-established that the nine variables are grouped into two factors. The rotated sum of squared loading should be greater than 55 percent. The nine variables were reduced into two predominant factors with an individual variance of 39.648 and 75.259. It is also originate that the total variance of the two variables is found to be 75.259 percent which is greater than the benchmark value of 55 percent.

### The Role of Patient-Centric Marketing - Rotated Compound Matrix

The rotated sum of the square value indicates the cumulative percentage of the variance is 79.010. Hence factorization is more suitable for the cost involved in the role of patient-centric marketing explains the value of the rotated component matrix for the role of patient-centric marketing.



**The Role of Patient-Centric Marketing - Rotated Component Matrix**

Rotated Component Matrix <sup>a</sup>		
	Component	
	1	2
Conducting In-Depth Patient Research		.661
Building Strong Patient-Provider Relationships		.682
Incorporating Patient Perspectives		.937
Collaborating with Patient Promotion Assemblies and Influencers		.927
Developing Personalized Communication and Engagement Tactics	.851	
Enhancing the Patient Experiences across Touchpoints	.616	
Empowering Patients and Shared Decision-Making	.742	
Improving Patient Acquisition and Retention	.857	
Tailoring Marketing Efforts	.768	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Factor loadings of two factors extracted through factor analysis. The first factor consists of four sub-factors; Conducting In-Depth Patient Research, Building Strong Patient-Provider Relationships, Incorporating Patient Perspectives, Collaborating with Patient Promotion Assemblies and Influencers. The first factor is named **“Health Care Marketing”**. The second factor contains six subfactors; Developing Personalized Communication and Engagement Tactics, Enhancing the Patient Experiences across Touch points, Empowering Patients and Shared Decision-Making, Improving Patient Acquisition and Retention, and Tailoring Marketing Efforts. Hence, it is named **“Patient engagement”**.

**Conclusion and Recommendations**

Implementing digital marketing strategies in hospitals during the pandemic can yield numerous benefits such as attracting new patients, expanding business, increasing customer / patient trust, strengthening customer/patient loyalty, increasing brand awareness, encouraging patients to use hospital services, and promoting services to patients' relatives and families. The selection of appropriate approaches or networks for numerical advancement be contingent on the hospital's goals and targets. Once the goals are established, the hospital can choose the appropriate digital media channels and determine the purposes to be accomplished from each channel. It is also important to analyze the market share and audience, determine the budget and marketing frequency, and assign responsibilities for executing the

chosen marketing strategy. Additionally, monitoring and evaluating each digital advertising policy is crucial to ensure that the hospital achieves its goals effectively and efficiently.

The impression of cardinal technology marketing is vast, encompassing increased engagement on social media and marketing, serving as a crucial performance indicator for analyzing organizational values, growing demand for digital, and increasing product searches among users. These benefits have been demonstrated in numerous companies and organizations digital marketing has experienced exponential growth and has made technological advancements worldwide. In hospitals, digital marketing is a strategy that offers many advantages. The selection of digital selling methods or channels depends on the hospital's goals or targets. After determining the objectives, the hospital selects the appropriate digital media channels and assigns the marketing strategy's implementation to a designated team. Additionally, monitoring and evaluating each digital marketing strategy's effectiveness is crucial to achieving the hospital's goals or targets efficiently unlocking the huge potential in emerging markets – particularly China and India.

It is essential to incorporate patient-centricity into healthcare marketing solutions to provide tailored, patient-oriented care. By adhering to enduring-centered strategies, healthcare organizations can gain a better understanding of patients' requirements, interact with them more effectively, and foster stronger patient-provider connections. Treatment promotion is a key factor in promoting patient-oriented care by increasing awareness, fostering trust, and improving patient satisfaction. Within the pharmaceutical industry, the patient-centric tactic is essential for the development and marketing of medications that meet the individual needs of patients. With the right marketing strategies and dedication to patient-centricity, the treatment sector can bring about positive change and enhance patient results. The comprehensive therapeutic campaigns sector is probable to grasp US\$400 billion this year, however, India, being a major player in the pharmaceuticals industry on this growth, accounted for approximately 7-8% of total healthcare expenditure in the country in 2013, whereas pharmaceuticals accounted for 18%. With per capita expenditure estimated to be below US\$3, the government thinks that foreign direct investment (FDI) is the only option to drive domestic growth projected to witness unparalleled growth over the subsequent X years, with the industry estimated to be worth US\$50 billion by 2025. This is largely due to the increasing middle class, the proliferation of hospitals, and the growing demand for advanced medical devices and improved healthcare.

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