

Barriers to implementation of digital marketing in healthcare centers of Kohgiluyeh and Boyer-Ahmad Province

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Abstract

Background: The rapid advancement of digital technologies has made digital marketing a crucial tool for enhancing patient communication, expanding healthcare access, and improving the competitiveness of health institutions. This study aimed to identify and analyze managerial and educational barriers to implementing digital marketing in healthcare centers of Kohgiluyeh and Boyer-Ahmad province and to propose targeted strategies for improvement.

Methods: A mixed-methods design was employed in 2025. In the qualitative phase, semi-structured interviews were conducted with 14 purposively selected managers and staff to explore key implementation challenges. In the quantitative phase, 102 managers and employees were recruited through stratified random sampling. Data were gathered using a researcher-developed questionnaire covering six barrier dimensions—managerial, organizational, human resources, technical, financial, and infrastructural—with specific emphasis on digital skills and training-related factors. Instrument reliability was confirmed with a Cronbach's alpha of 0.87.

Results: Financial barriers ranked highest with a mean score of 4.12, followed by human resource and managerial obstacles. Limited digital literacy, inadequate training in digital marketing tools, and the absence of structured educational programs were identified as significant challenges. Correlation analysis revealed significant positive relationships among barrier dimensions, with the strongest association observed between managerial and human resource factors.

Conclusion: Successful digital marketing implementation in healthcare requires simultaneous attention to financial, managerial, human resource, educational, and infrastructural elements. Strengthening managerial support, investing in digital infrastructure, and developing continuous training programs to enhance staff digital competencies can significantly facilitate the adoption and effective utilization of digital marketing strategies in healthcare organizations.

Keywords: Delivery of Health Care; Digital Media; Health Information Management; Information Technology; Marketing; Staff Development.

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Introduction

Over the past several years, the wave of digital transformation has profoundly reshaped health systems across the globe. Breakthroughs in information and communication

technology have prompted medical institutions to embrace digital solutions aimed at elevating care standards, fostering deeper patient involvement, and streamlining organizational performance

(1–3). A central pillar of this shift is the integration of digital marketing within the healthcare domain. In essence, digital marketing encompasses leveraging online channels—websites, social networks, and various digital platforms—to educate, engage, and serve patients. These instruments hold considerable potential for broadening public access to health-related knowledge, strengthening provider–patient dialogue, and enriching the overall care experience (4, 5).

Research indicates that deploying digital promotional strategies can markedly boost patient awareness, fortify connections between caregivers and care seekers, and heighten satisfaction levels. Moreover, online platforms grant healthcare bodies the ability to showcase their offerings more compellingly, connect with wider population segments, and cultivate sustained, meaningful exchanges with their clientele (6–8). Beyond communicative gains, digital marketing also aids health administrators in strategic planning, service visibility, and maintaining institutional competitiveness within an increasingly digitized landscape.

Notwithstanding these advantages, embedding digital marketing into healthcare operations frequently encounters a spectrum of hurdles that curtail its effective uptake. Scholarly work has pinpointed obstacles such as budgetary shortfalls, underdeveloped technological backbone, weak executive backing, institutional inertia toward change, and a deficit of digital expertise among the workforce (9, 10). These impediments underscore that the challenge is not purely technical; rather, it is deeply rooted in managerial and educational shortcomings demanding sound leadership, organizational preparedness, and skill-building among personnel.

Another pivotal element shaping successful adoption is the extent of digital fluency and targeted instruction among health professionals. Staff members often possess

insufficient know-how and hands-on competence regarding digital interfaces, virtual communication methods, and the stewardship of online content. In the absence of well-designed instructional interventions and capacity-building efforts centered on digital upskilling, healthcare establishments may find it difficult to harness the power of digital outreach tools effectively. Consequently, ongoing professional growth and systematically structured training curricula are indispensable for weaving digital technologies into the fabric of health service management and provision (11–13).

Furthermore, anxieties surrounding information security, patient confidentiality, and ethical conduct within virtual spaces can temper organizational enthusiasm for embracing digital marketing. Tackling these issues demands not just technical protective measures but also transparent managerial protocols and awareness-raising campaigns focused on digital ethics, privacy safeguards, and the conscientious utilization of online media (14, 15).

Across numerous nations, especially those with emerging health infrastructures, the deployment of digital marketing in clinical settings remains patchy and frequently devoid of a coherent, strategic orientation. A thorough grasp of the managerial, structural, and pedagogical challenges impeding uptake in healthcare contexts is still lacking (16, 17). Likewise, in Iran, despite pervasive internet and social media penetration, many health centers have yet to tap into the full promise of digital marketing owing to constraints in administrative planning, technological readiness, and workforce digital aptitude.

Considering the mounting significance of digital tools in health administration, mapping the deterrents to digital marketing implementation can yield critical intelligence for policymakers and institutional leaders. Appreciating these barriers enables organizations to craft

sound administrative strategies and learning interventions geared toward bolstering digital capabilities and easing the seamless assimilation of digital marketing into healthcare delivery. Accordingly, this investigation set out to detect and scrutinize the managerial, organizational, and educational obstacles facing the rollout of digital marketing in healthcare facilities throughout Kohgiluyeh and Boyer-Ahmad Province, and to formulate administrative and pedagogical solutions to enhance its adoption.

Methods

Study Population

Participants were drawn from among hospital executives, public relations officers, IT professionals, and staff members handling marketing, communications, and digital services at public and private health centers in Kohgiluyeh and Boyer-Ahmad Province in 2024. Their selection was based on their practical knowledge of administrative procedures, digital technologies, and patient engagement, which made them valuable sources of insight regarding the obstacles hindering digital marketing implementation in healthcare organizations. *Sample Size and Sampling Method*

This study utilized a combined qualitative–quantitative methodology. For the qualitative strand, a purposive sampling strategy incorporating snowball techniques was adopted to recruit participants, with data gathering persisting until saturation was attained. Altogether, 14 knowledgeable informants—comprising healthcare executives, information technology professionals, and public relations officers—took part in this stage.

In the quantitative strand, the requisite sample size was calculated using Cochran's formula, resulting in the recruitment of 102 staff members and managers from various healthcare facilities. A stratified random sampling approach was applied to secure

proportionate representation across the different centers situated throughout the province.

Inclusion and Exclusion Criteria

Eligibility for enrollment required a minimum of one year of professional tenure within a healthcare facility, holding a position in administrative leadership, information technology, public relations, or digital service departments, and providing informed consent to take part in the research.

Participants were excluded from the study if they declined to proceed at any stage, returned questionnaires that were insufficiently completed, or failed to submit their responses within the specified deadline.

Study Variables

The main variable of this study was the barriers to implementing digital marketing in healthcare centers, examined across six dimensions:

- Managerial barriers
- Organizational barriers
- Human resource barriers
- Technical and technological barriers
- Financial barriers
- Infrastructural barriers

Additionally, demographic variables, including age, gender, education level, work experience, and type of organizational unit, were considered as contextual variables.

Data Collection Instruments

The process of gathering information was carried out in two distinct phases. The first, qualitative stage utilized semi-structured interviewing as a means of eliciting the key obstacles facing digital marketing uptake. The guiding questions for these interviews were crafted based on an extensive examination of existing literature,

supplemented by consultation with authorities in healthcare administration.

Moving to the quantitative stage, a bespoke questionnaire was designed by the research team, grounded in the insights that emerged from the qualitative phase and informed by earlier investigations. This instrument was organized into two sections: an initial portion devoted to demographic characteristics, followed by a main portion measuring perceived hindrances to digital marketing across six core dimensions. Participants indicated their level of agreement using a five-point Likert-type scale, extending from "strongly disagree" through to "strongly agree."

The tool's content validity was established through evaluation by a panel of ten specialists drawn from the fields of health services management and information technology. Its reliability was tested via Cronbach's alpha, which returned an overall value of 0.87, reflecting a solid degree of internal consistency for the questionnaire.

Research Procedure

During the initial stage, after securing the requisite institutional clearances, qualitative interviews were carried out with knowledgeable professionals and pertinent administrators. Each session was audio-recorded with the explicit consent of the participants and later transcribed verbatim. The resulting data were subjected to thematic content analysis, through which the principal themes were systematically extracted.

In the subsequent stage, drawing upon the outcomes of the qualitative inquiry, a structured questionnaire was designed and circulated among the sampled participants. The instruments were distributed in person at the respective healthcare facilities and retrieved once respondents had completed them.

Statistical Analysis

Quantitative data were entered into SPSS version 26 for analysis. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the variables. Inferential analyses included Pearson correlation tests to examine relationships between the dimensions of barriers and exploratory factor analysis to identify the underlying structure of digital marketing barriers. A significance level of 0.05 was applied for all tests.

Ethical Considerations

Ethical clearance for this study was granted by the Ethics Committee of Islamic Azad University, Shahr-e-Kord Branch, under the reference code IR.IAU.SHK.REC.1404.022. Prior to the commencement of data gathering, written informed consent was secured from every individual taking part. The privacy and confidentiality of all collected information were rigorously upheld, and the data were employed solely for the objectives of this investigation.

Results

In the quantitative strand of the study, 102 duly filled questionnaires were processed and examined. The analysis commenced with an exploration of the participants' demographic attributes.

The results indicated that male respondents constituted the majority, accounting for 56.9% of the sample. The predominant age bracket was 30 to 40 years, representing 45.1% of participants, which points to the substantial engagement of mid-career personnel in the investigation. With respect to educational qualifications, nearly half of the respondents held a master's degree (48%), signifying a comparatively elevated academic background within the study population. Concerning professional tenure, the largest segment reported between 5 and 10 years of work experience, comprising 33.3% of the sample. In terms

Table 1. Background Characteristics of the Participants

Variable	Category	Frequency	Percentage
Gender	Male	58	56.9
	Female	44	43.1
Age	Under 30 years	21	20.6
	30–40 years	46	45.1
	41–50 years	25	24.5
	Over 50 years	10	9.8
Education	Bachelor's degree	39	38.2
	Master's degree	49	48.0
	Doctorate	14	13.8
Work experience	Less than 5 years	19	18.6
	5–10 years	34	33.3
	11–15 years	29	28.4
	More than 15 years	20	19.6
Organizational unit	Management	27	26.5
	Information Technology	22	21.6
	Public Relations	24	23.5
	Other units	29	28.4

of departmental affiliation, staff drawn from administrative, public relations, and information technology units exhibited the highest levels of participation, a pattern consistent with the core emphasis of this inquiry.

Table 2. Summary Statistics for the Dimensions Hindering Digital Marketing Deployment

Barrier Dimension	Mean	SD
Financial Barriers	4.12	0.71
Human Resource Barriers	3.98	0.65
Managerial Barriers	3.84	0.68
Technical and Technological Barriers	3.72	0.74
Organizational Barriers	3.61	0.69
Infrastructure Barriers	3.54	0.73

The results demonstrated that, across the assessed dimensions, fiscal obstacles registered the highest average score at 4.12, underscoring the pivotal influence of constrained budgetary resources on the deployment of digital marketing within healthcare facilities. Trailing closely behind were workforce-related impediments, with a mean of 3.98, and governance-related hurdles at 3.84. These outcomes imply that a deficit of digitally competent personnel, coupled with inadequate executive backing and limited managerial awareness, stands among the foremost restrictions confronting efforts in this domain.

Table 3. Results of Exploratory Factor Analysis for Barrier Dimensions

Factor	Eigenvalue	% of Variance
Factor 1 (Financial)	4.31	21.4
Factor 2 (Human Resources)	3.68	18.2
Factor 3 (Managerial)	2.95	14.6
Factor 4 (Technology)	2.41	12.0
Factor 5 (Organizational)	2.07	10.3
Factor 6 (Infrastructure)	1.74	8.6

The results derived from exploratory factor analysis revealed that six principal factors collectively accounted for roughly 85% of the overall variance. Among these, the financial dimension yielded the largest eigenvalue at 4.31, signifying its predominant contribution to the explained variance. This finding reinforces the notion that fiscal constraints and limited budgetary allocations represent central impediments to the successful rollout of digital marketing initiatives within healthcare institutions.

Table 4. Comparison of Barrier Means by Education Level

Education Level	Mean of Overall Barriers	Standard Deviation
Bachelor's	3.89	0.66
Master's	3.71	0.63
Doctorate	3.54	0.59

Table 5. Correlation Matrix of Barrier Dimensions

Variable	Financial	Human Resources	Managerial	Technology	Organizational
Financial	1				
Human Resources	0.54	1			
Managerial	0.48	0.61	1		
Technology	0.42	0.46	0.53	1	
Organizational	0.39	0.57	0.44	0.53	1

The results indicated that respondents holding a bachelor's degree expressed a higher mean perception of hindrances relative to their counterparts with more advanced academic qualifications. This disparity may stem from differences in levels of awareness, professional exposure, or the character of occupational duties. Individuals possessing postgraduate degrees may enjoy a deeper familiarity with digital instruments and their potential, potentially leading them to view particular challenges as less formidable barriers.

The data displayed in Table 5 reveal meaningful positive associations across the different barrier dimensions. The strongest correlation emerged between workforce-related obstacles and governance-related impediments ($r = 0.61$), suggesting that shortcomings in staff digital competencies and expertise frequently coincide with deficiencies in executive backing and strategic policy formulation.

Table 6. Ranking of Barriers to the Implementation of Digital Marketing

Rank	Barrier Dimension	Mean
1	Financial	4.12
2	Human Resources	3.98
3	Managerial	3.84
4	Technical & Technological	3.72
5	Organizational	3.61
6	Infrastructure	3.54

The ranking outcomes demonstrated that budgetary limitations represent the foremost obstacle to deploying digital marketing within healthcare facilities across Kohgiluyeh and Boyer-Ahmad province. This was followed by a shortage of qualified workforce and difficulties rooted in management practices. The evidence implies that propelling digital marketing forward necessitates not merely

the earmarking of sufficient financial means, but also the elevation of personnel capabilities and the fortification of leadership endorsement.

Discussion

The present investigation set out to uncover and scrutinize the obstacles impeding the uptake of digital marketing within healthcare facilities across Kohgiluyeh and Boyer-Ahmad province, and to offer administrative guidance for enhancement. The outcomes demonstrated that the deployment of digital marketing in medical institutions is hindered by a constellation of fiscal, workforce, governance, technical, and structural factors. Prominent among these were monetary shortfalls, human capital deficits, and leadership-related hurdles. These insights underscore that advancing digital marketing in healthcare transcends mere technological adoption; it demands shifts in organizational culture, management practices, and workforce capabilities to yield meaningful results.

A principal revelation of this research is that budgetary limitations constitute the foremost impediment. Numerous health centers, particularly those situated in less affluent areas, grapple with insufficient funding for digital backbone systems, online promotional instruments, and the recruitment of qualified specialists. This observation echoes the work of Kraus et al., who stressed that capital investment stands as an essential precondition for digital evolution within organizations, most notably in the health domain (1). Correspondingly, Tortorella et al. documented that scarce fiscal means represent a primary factor decelerating technological uptake. In many care

facilities, monetary priorities are routinely channeled toward clinical apparatus and direct patient services, leaving initiatives such as digital marketing relegated to a lower tier of importance (18).

The second major category of obstacles pertained to human resources. The data revealed that a paucity of adept personnel in digital outreach, coupled with insufficient digital fluency among existing staff and meager training provisions, poses significant constraints. Competent digital marketing necessitates a diverse skill set—spanning data analytics, social network stewardship, content generation, and digital campaign orchestration—yet a considerable number of healthcare establishments continue to lean on conventional communication and outreach modalities. This finding is consonant with Dwivedi et al., who asserted that the fruition of digital marketing endeavors is heavily contingent upon the digital proficiency of the workforce (19). In a similar vein, Hwang et al. noted that deficient digital literacy among health workers acts as a key stumbling block to technological assimilation within the sector. Consequently, bolstering digital acumen and furnishing specialized instruction in digital marketing can serve as pivotal enablers for the successful embedding of such approaches in healthcare settings (8).

Another salient finding concerned the role of managerial impediments in curtailing digital marketing progress. Challenges encompassing the absence of long-range strategic roadmaps, limited cognizance among executives regarding the merits of digital marketing, and feeble leadership endorsement were singled out as core deterrents. The function of management in guiding institutions through digital metamorphosis is indispensable. When leaders fail to grasp the full significance of digital marketing or neglect to accord it strategic precedence, the prospects of fruitful implementation diminish

considerably. This aligns with Verhoef et al., who emphasized that executive commitment and a forward-looking vision are foundational to the triumph of digital transformation processes (2). Furthermore, Bokrantz et al. established that leadership behavior in resource distribution and the cultivation of an innovation-friendly climate directly shapes the outcomes of digital projects (20).

The investigation additionally brought to light that technological and infrastructural deficiencies represent pivotal factors shaping digital marketing execution. Shortcomings such as underdeveloped IT architecture, restricted access to digital interfaces, and complications in harmonizing information systems were identified by respondents as substantial hurdles. The effective rollout of digital marketing presupposes a sturdy IT foundation, capable data management frameworks, and sophisticated communication platforms. In this regard, Dash et al. demonstrated that technological preparedness constitutes a primary prerequisite for embracing digital novelties in the health sector (7). Likewise, Nguyen and Medjaher observed that a considerable share of digital transformation ventures falter due to fragile IT underpinnings (21).

The study further established that organizational and structural rigidities play a major constraining role. Bureaucratic hierarchies, aversion to change, and fragmented coordination among departmental units emerged as noteworthy factors cited by participants. Healthcare organizations are traditionally oriented toward clinical service provision, which frequently results in marketing functions being sidelined. This resonates with Carvalho et al., who contend that conventional organizational frameworks can obstruct the assimilation of digital innovations within service-oriented entities (22).

Moreover, correlation analyses uncovered robust positive interconnections among the

various barrier categories. A notably strong association was detected between human resource and managerial obstacles, suggesting that insufficient executive backing may precipitate diminished investment in personnel development and digital upskilling. The work of Kruse et al. similarly underscored that leadership dedication plays a critical part in fostering employee engagement and readying organizations for technological adoption (23).

Taken together, the results indicate that the effective integration of digital marketing within healthcare establishments calls for a holistic, multidimensional strategy that concurrently tackles fiscal, human, managerial, and technological dimensions. Channeling resources into technology alone, without parallel efforts to cultivate human talent and secure managerial advocacy, is unlikely to yield success. Zonta et al. likewise stress that digital transformation should be conceived as a broad organizational overhaul rather than a narrowly technical shift (24).

In light of these conclusions, health administrators and policymakers are advised to prioritize measures such as earmarking sufficient financial resources, upgrading IT infrastructure, delivering workforce training in digital competencies, and crafting dedicated digital marketing strategies. Such endeavors will help establish the groundwork for digital marketing expansion, strengthen patient engagement, widen access to health services, and ultimately elevate the standard of care.

Digital transformation has surfaced as a dominant trend across service industries, and healthcare in particular, in recent times. Digital marketing, specifically, is acknowledged as a potent mechanism for enhancing patient connectivity, broadening service accessibility, and sharpening the competitive edge of health institutions. Nevertheless, the findings from this study reveal that the embrace of digital marketing

in healthcare centers throughout Kohgiluyeh and Boyer-Ahmad province encounters an array of structural, administrative, and resource-based impediments that can present considerable implementation challenges.

The results further illuminated that the most critical deterrents encompass financial, workforce, and leadership constraints. Restricted monetary reserves, underinvestment in digital backbone, and the steep costs associated with novel technologies were pinpointed as factors that have curbed digital marketing advancement in numerous facilities. Additionally, the scarcity of digitally skilled staff and the generally modest level of digital literacy among personnel constituted key hurdles. Furthermore, tepid managerial endorsement, a narrow understanding of digital marketing's advantages, and the want of strategic foresight were underscored as major impediments to successful deployment.

Lastly, the study determined that technological and infrastructural barriers also stymie digital marketing growth. The want of sufficient IT infrastructure, constrained access to digital tools, and suboptimal integration of information systems were identified as core factors undermining the efficacy of digital marketing initiatives. Organizational difficulties, including entrenched bureaucratic processes and inertia toward change, were also found to complicate the absorption of digital novelties within healthcare environments.

Limitations of the Study

Despite efforts to ensure the accuracy of the research process, this study faced certain limitations that should be taken into account when interpreting the results. Firstly, the research was conducted exclusively in healthcare centers in Kohgiluyeh and Boyer-Ahmad provinces. Therefore, generalizing the findings to other provinces or the entire healthcare

system of the country should be done cautiously, as infrastructural, managerial, and technological development conditions may differ across regions. The data were collected based on the perspectives and perceptions of the managers and staff at these healthcare centers. In such studies, response bias may occur, meaning that some respondents might have expressed their views influenced by personal or organizational factors. As a result, the findings primarily reflect the participants' perceptions of the barriers to digital marketing. The study was cross-sectional, meaning data were collected at a single point in time. However, digital transformation and the implementation of digital marketing in organizations are dynamic processes that take time and may be affected by technological changes, organizational policies, and environmental factors over time.

Another limitation was the small sample size in the qualitative phase of the study. Although sampling continued until theoretical saturation was reached, increasing the number of participants or including a wider range of stakeholders, such as patients and IT experts, could have enriched the data further. Lastly, the focus of this study was mainly on identifying the barriers to the implementation of digital marketing, and it did not assess the effectiveness or practical outcomes of implementing this approach in healthcare centers. Investigating the practical implications of digital marketing implementation could provide a deeper understanding of its benefits and challenges.

Recommendations

Based on the findings and limitations of this study, it is suggested that future research examine digital marketing in the healthcare sector from multiple angles. First, conducting similar studies in other provinces or at the national level could facilitate comparisons of the implementation of digital marketing across

various regions, providing a broader view of the challenges and opportunities within the healthcare system. Future research could also benefit from using more advanced mixed-methods approaches or structural models, such as Structural Equation Modeling (SEM), to investigate the relationships between variables influencing the adoption of digital marketing. Such methods would help identify the key factors and assess the magnitude of their effects more accurately. Moreover, longitudinal studies tracking the progression of digital marketing adoption and development in healthcare centers could offer valuable insights into changes over time. These studies could shed light on how managerial policies, technological advancements, and environmental shifts impact the development of digital marketing.

It is also recommended that future research explore the perspectives of patients and users of healthcare services. Examining patient attitudes and behaviors toward digital tools, such as social media, medical websites, and health applications, could provide useful information for creating more effective digital marketing strategies within healthcare facilities.

Finally, research focused on evaluating the effectiveness of management strategies and digital interventions would be beneficial for healthcare managers and policymakers in selecting the most effective strategies for advancing digital marketing. Such studies could play a crucial role in improving communication between healthcare providers and patients, enhancing user satisfaction, and improving the overall quality of healthcare services.

Conclusion

The results of this study indicate that the successful implementation of digital marketing in healthcare centers requires a comprehensive organizational and managerial approach. In this context, healthcare managers and policymakers can

promote the development of digital marketing by adopting strategies such as increasing investments in digital infrastructure, organizing training programs to enhance the digital skills of staff, recruiting experts in digital marketing, and developing strategic plans for this field. Additionally, strengthening an organizational culture focused on innovation and providing managerial support for digital projects can play a key role in facilitating the digital transformation process in healthcare centers.

As digital technologies continue to play an increasingly vital role in healthcare service delivery, focusing on digital marketing can improve communication between healthcare centers and patients, raise public awareness of available healthcare services, and ultimately enhance the overall quality of care. Therefore, identifying and addressing existing barriers in this area could be a significant step towards advancing the healthcare system and improving the performance of healthcare organizations in the digital era.

Authors' contribution

Lida Gholizadeh and Mahdiye Zarepour developed the study concept and design. Mahnaz Shafakhah and Mahdiye Zarepour acquired the data. Lida Gholizadeh and Mahnaz Shafakhah analyzed and interpreted the data, and wrote the first draft of the manuscript. All authors contributed to the intellectual content, manuscript editing and read and approved the final manuscript.

Informed consent

Questionnaires were filled with the participants' satisfaction and written consent was obtained from the participants in this study.

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Conflict of interest

The authors declare that they have no conflict of interests.

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