

# Effectiveness of instagram-based digital marketing in influencing outpatient decision in the BPJS Era: a quasi-experimental study

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**Abstract.** Digital marketing has become a strategic tool in modern healthcare, especially for BPJS patients, by enhancing access to information and supporting informed decision-making. Instagram is increasingly used by clinics to promote services and engage patients. This study aims to quantitatively assess the effectiveness of Instagram-based digital marketing in influencing outpatient decision-making at Citra Mulia Clinic using Kotler's 5A model. This study uses a quasi-experimental one-group pretest-posttest design was conducted involving 77 families of pediatric patients. The intervention consisted of Instagram content aligned with the five stages of the customer path. Data were analyzed using the Wilcoxon Signed-Rank Test and Paired Sample T-Test. The intervention significantly improved all five stages of decision-making: awareness ( $p = 0.002$ ), appeal ( $p = 0.002$ ), information seeking ( $p = 0.004$ ), action ( $p = 0.001$ ), advocacy ( $p = 0.006$ ), and patient decision ( $p = 0.000$ ). Visual education, testimonials, and embedded CTA elements were key drivers of engagement and conversion. Instagram-based digital marketing is effective in influencing outpatient decision-making and can enhance trust and responsiveness in BPJS healthcare settings.

## 1 Introduction

Health is a basic human need, and public awareness of the importance of health continues to increase [1]. This increased awareness has encouraged healthcare providers to design services that are increasingly varied and adaptive to patient demands, resulting in increased competition between healthcare facilities. Healthcare providers are required to offer high-quality and efficient services in order to gain public trust [2-3]. In response to the increasing demand for healthcare, the Government of Indonesia passed Law No. 24 of 2011, establishing the Social Security Organizing Agency (BPJS) to provide comprehensive national health insurance [3]. The National Health Insurance Program (JKN) creates a centralized payment system and increases competition among healthcare providers. As the program progresses towards Universal Health Coverage (UHC), BPJS Kesehatan has implemented the INA-CBGs system, which standardizes payment for services and demands efficiency at all levels of care [4]. This shift requires health facility managers to adjust their operational strategies to deliver effective services with limited resources [5]

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Digital transformation is a strategic necessity for healthcare facilities to face service competition. BPJS patients can choose between various healthcare providers, thus pushing clinics to increase visibility, trust, and patient loyalty. This is achieved not only through the quality of medical personnel, infrastructure, and service responsiveness, but also through strategic marketing and patient engagement [6]. In today's digital era, healthcare facilities are required to function as both public service entities and competitive business organizations. Promotion through digital marketing has become essential in gaining competitive advantage [7-8]. Social media platforms enable healthcare facilities to reach target audiences more effectively [8]. Digital marketing involves targeted, measurable and interactive promotions using digital technologies to attract, convert and retain patients [9]. In the context of healthcare, this increases the visibility of services and strengthens relationships with patients. This problem is not unique to Indonesia. Globally, healthcare providers are leveraging social media platforms to improve patient engagement and service accessibility in the face of similar pressures related to cost control and digital transformation [10].

Social media marketing is one of the most influential tools in health promotion among various existing strategies [10]. Social media enables the dissemination of health information to a wide range of audiences, regardless of age, education, or location due to its accessibility and wide reach. Platforms such as Facebook, Instagram, TikTok, Twitter and YouTube allow healthcare providers to share content through text, images and videos to engage patients and promote services. Instagram, in particular, has emerged as a powerful tool for healthcare marketing. It allows healthcare providers to post visually appealing content, patient testimonials, behind-the-scenes operations, and educational health messages, thus strengthening public awareness and brand trust. [11-12]

Patient visit decision refers to the process of choosing a particular healthcare provider based on individual preferences. Patients consider information and compare alternatives before making service decisions. These decisions are critical as they affect continuity of care and long-term patient loyalty [12]. Although previous studies have examined the use of social media in healthcare promotion, few have explored how Instagram content specifically influences outpatient decisions among BPJS patients in Indonesia. This study addresses that gap by analyzing the effectiveness of Instagram-based digital marketing in shaping outpatient visit decisions in the BPJS era. Therefore, this study aims to analyze the effectiveness of Instagram-based digital marketing strategies in influencing outpatient decisions at Citra Mulia Clinic through Kotler's customer path approach (*Aware, Appeal, Ask, Act, Advocate*). The findings are expected to support clinic management in designing digital strategies that are aligned with patient preferences that can ultimately strengthen patient trust and loyalty.

## **2 Methods**

### **2.1 Research design**

This study used a quasi-experimental one-group pretest-posttest design to evaluate the effectiveness of Instagram-based digital marketing in influencing outpatient decision-making at Citra Mulia Clinic. A total of 77 families of pediatric patients who met the inclusion criteria participated. The study began with a pretest conducted on May 5-9, 2025, followed by a digital campaign intervention on May 10-18, 2025, which included a child growth and development flyer, educational videos by pediatricians, pneumonia prevention tips, and parent testimonials. The posttest was then conducted on May 19-21, 2025.

## **2.2 Population and sample**

The quantitative phase targeted families of pediatric outpatients at Citra Mulia Clinic. The population consisted of 95 families of pediatric outpatients. The sample was calculated using the Slovin formula with an error rate of 5%, obtaining a sample of 77 respondents. Inclusion criteria were parents of general and BPJS pediatric patients who had visited the clinic at least once, aged 18-40 years, active Instagram users, and willing to give consent. Informants and respondents varied in age (28-40 years old), educational background (from high school to university level), and had made 2-3 visits to the clinic.

## **2.3 Sampling and Data Collection Technique**

Respondents were selected using probability sampling based on the Slovin formula, resulting in a sample of 77 people from a population of 95 families of pediatric outpatients. The sampling criteria required respondents to be 18-40 years old, active Instagram users, and have visited the clinic at least once. Data was collected using a structured questionnaire designed to measure patient decision-making across the five stages of the customer path (aware, appeal, ask, act, and advocate). The questionnaire was administered before and after exposure to Instagram content, which included: Child growth and development flayer, educational videos by pediatricians, Pneumonia prevention tips and Parent testimonials.

## **2.4 Data Analysis**

In this study, a one group pretest-posttest design was applied to evaluate the effectiveness of Instagram-based digital marketing. The Kolmogorov-Smirnov test was conducted to assess the normality of the data. The Aware, Appeal, Ask, Act, and Advocate variables were not normally distributed, so they were analyzed using the Wilcoxon Signed-Rank Test. Meanwhile, the overall patient decision score was normally distributed, so a Paired Sample T-Test was used to test for differences before and after the intervention. This statistical test aimed to determine whether there was a significant increase in the five stages of decision-making and the final decision variable after the Instagram-based digital marketing intervention.

## **2.5 Ethical Approval**

All participants gave informed consent before participating in this study. Ethical approval was obtained from the Health Research Ethics Commission, Universitas Muhammadiyah Yogyakarta, with reference number 096/EC-KEPK FKIK UMY/III/2025.

# **3 Results and discussion**

## **3.1 Results**

Quantitative analysis was conducted to test the effect of Instagram-based digital marketing strategies on awareness (aware), interest (appeal), information seeking (ask), action (act), advocacy (advocate), and patient decisions. Based on the normality test, aware, appeal, ask, act, and advocate data are not normally distributed so they are analyzed using the Wilcoxon test, while patient decision data is normally distributed so it is analyzed using the Paired Sample T-Test test. The statistical outcomes from the Wilcoxon Signed-Rank Test are summarized in Table 1.

**Table 1.** Wilcoxon test results

Variable	Wilcoxon Test			
	Group	Average	Number (n)	<i>p</i>
Aware	Pre-test	26,71	77	0,002
	Post-test	26,99	77	
Appeal	Pre-test	24,95	77	0,002
	Post-test	25,23	77	
Ask	Pre-test	26,66	77	0,004
	Post-test	26,90	77	
Act	Pre-test	24,96	77	0,001
	Post-test	25,31	77	
Advocate	Pre-test	26,71	77	0,006
	Post-test	26,94	77	

The mean awareness score increased from 26.71 to 26.99 ( $p = 0.002$ ). This increase indicates that educational content such as child health tips, growth and development information, and service testimonials successfully introduced the clinic's services to the audience.

The average appeal score increased from 24.95 to 25.23 ( $p = 0.002$ ). This increase indicates that the delivery of information through the doctor's educational videos and testimonial narratives was able to strengthen the audience's interest in the services.

The mean information seeking (ask) score increased from 26.66 to 26.90 ( $p = 0.004$ ). This result shows that after viewing Instagram content, patients are encouraged to seek further information through WhatsApp, direct messages, or live sessions.

The average act score increased from 24.96 to 25.31 ( $p = 0.001$ ). Strategies such as inserting Call to Action (CTA) in the form of "Click link in bio" and "Register now via WhatsApp" effectively encouraged patients to make reservations or come directly to the clinic.

The average advocacy score increased from 26.71 to 26.94 ( $p = 0.006$ ). This indicates that digital marketing strategies encourage patients to recommend services, share content, and provide positive testimonials.

Table 2 displays the Paired Sample T-Test results for the overall patient decision score, indicating a significant increase post-intervention.

**Table 2.** Paired Sample T-Test Results

Variable	Paired Sample T-Test			
	Group	Average	Number (n)	<i>p</i>
Patient decision	Pretest	130,00	77	0,000
	Posttest	131,36		

The average patient decision score increased from 130.00 to 131.36 ( $p = 0.000$ ). This significant increase shows that Instagram-based digital marketing strategies are able to convert interest into real decisions to use outpatient services at the Citra Mulia Main Clinic.

### 3.2 Discussion

The findings of this study provide robust empirical evidence that Instagram-based digital marketing significantly enhances outpatient decision-making across all five stages of Kotler's customer path. The statistically significant improvements in awareness, appeal, information seeking, action, and advocacy demonstrate that social media is not merely a

promotional tool, but a strategic instrument for shaping patient behavior in the BPJS healthcare context. This aligns with the growing body of literature that positions digital platforms as critical enablers of patient-centered communication and service accessibility [12]. The increase in awareness and appeal scores suggests that visual education and emotionally resonant content such as pediatric health tips and real-life testimonials effectively capture attention and build trust. These findings reinforce the importance of content relevance and emotional tone in healthcare marketing, especially when targeting digitally literate parents of pediatric patients. The ability of Instagram to deliver concise, visually engaging messages makes it an ideal platform for health promotion in a competitive outpatient market [13].

The significant rise in the “ask” and “act” stages highlights the role of interactive features and embedded Call to Action (CTA) elements in converting passive viewers into active participants. Patients were more likely to seek further information and take concrete steps such as booking appointments after engaging with Instagram content [13]. This underscores the importance of designing campaigns that not only inform but also facilitate seamless transitions from interest to action.

Furthermore, the improvement in advocacy scores indicates that satisfied patients are willing to share their experiences and recommend services to others. This organic digital advocacy is a powerful asset in the BPJS era, where trust and peer influence play a critical role in healthcare choices [14]. The study confirms that Instagram can foster a loyalty loop, where patients evolve into brand ambassadors who amplify the clinic’s reputation through their networks [15].

This study is limited by potential selection and reporting biases from social media analytics, a single-platform focus on Instagram, and limited generalizability across clinic types, regions, and age groups; causal inference is constrained by the likely cross-sectional/observational design and unmeasured confounders (e.g., offline marketing, seasonality, algorithm changes). Future work should use longitudinal and experimental designs (A/B tests or randomized rollouts), include multi-platform comparisons, and assess cost-effectiveness and equity impacts across demographics. Finally, integrate BPJS datasets (e.g., NIK-based registration and MJKN access logs) to validate conversions and test whether policy education content improves both engagement and service uptake.

## **4 Conclusion**

Instagram-based digital marketing has proven to be an effective strategy for influencing outpatient decision-making in the BPJS era. Through the application of Kotler’s 5A model, this study demonstrates that structured and emotionally engaging content can significantly enhance patient awareness, interest, interaction, action, and advocacy. These findings affirm the strategic value of Instagram as a health communication channel that not only informs but also drives measurable behavioral outcomes.

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