

Digital Patient Engagement through WhatsApp and Patient Loyalty: A Qualitative Case Study in Private Medical Practices in West Bandung, Indonesia

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Article history:

Received March 11, 2026

Revised May 31, 2026

Accepted June 4, 2026

Abstract

The rapid development of digital communication technologies has significantly transformed interactions between healthcare providers and patients, creating new opportunities to strengthen patient engagement and improve healthcare service relationships. This study aims to explore how digital patient engagement through WhatsApp communication contributes to the development of patient loyalty in healthcare services. An intrinsic qualitative case study was conducted in two private medical practices in West Bandung Regency, Indonesia. Data were collected through in-depth interviews with 16 patients and 2 general practitioners, complemented by participant observation and document analysis of WhatsApp-based communications. The data were analyzed using thematic analysis to identify patterns and key themes related to digital communication, patient engagement, and loyalty. The findings reveal that WhatsApp facilitates clear, responsive, and personalized communication between physicians and patients, enhancing communication quality and patient satisfaction. These positive communication experiences strengthen patient trust in physicians' competence, integrity, and benevolence, which subsequently contribute to patient loyalty. Patient loyalty was reflected in repeat visits, emotional attachment to physicians, and willingness to recommend healthcare services to others. The study identifies a relational pathway in which communication quality fosters satisfaction and trust, ultimately supporting the development of long-term patient loyalty. The study highlights the importance of integrating simple digital communication platforms in healthcare services to strengthen patient relationships and improve service sustainability in the digital era.

Keywords:

Digital patient engagement; WhatsApp communication; Patient loyalty; Physician-patient communication; Patient trust.

1. INTRODUCTION

Digital transformation has brought significant changes across various service sectors, including healthcare. The integration of digital technology into healthcare systems enables greater communication efficiency, broader access to information for patients, and improved quality of interaction between healthcare professionals and patients. In recent years, the utilization of digital technology has continued to expand as part of strategies to enhance patient-centered healthcare services. Digital technology not only functions as a tool for information dissemination but also serves as a means to enhance patient engagement in the healthcare process and strengthen the relationship between healthcare providers and patients (West et al., 2025; Agarwal et al., 2022). Furthermore, the development of digital communication technologies has encouraged the emergence of various technology-based healthcare service models, such as telemedicine, mobile health (mHealth), and digital health platforms, which enable more flexible and responsive interactions between medical professionals and patients (Haleem et al., 2021; Rauschnabel et al., 2024).

The concept of patient engagement has become one of the key issues in modern healthcare systems. Patient engagement refers to the active participation of patients in understanding their health conditions, making decisions related to treatment, and interacting with healthcare professionals throughout the care process. A high level of patient engagement has been shown to improve patient satisfaction, increase adherence to treatment, and enhance the overall quality of healthcare outcomes (Barello et al., 2021; Crudu, 2025). In addition, patient engagement plays an important role in improving health literacy, strengthening the therapeutic relationship between patients and healthcare providers, and encouraging more participatory medical decision-making (Graffigna & Barello, 2022). In the context of digital transformation, patient engagement is increasingly facilitated through various digital communication platforms such as patient portals, health applications, telemedicine services, and internet-based communication tools that allow real-time interaction between healthcare professionals and patients (Ngwa et al., 2023; Haleem et al., 2021).

Along with the advancement of digital communication technologies, recent studies have begun to highlight the concept of digital patient engagement, which refers to patient involvement mediated by digital technologies within healthcare services. Digital patient engagement enables patients to become more actively involved in monitoring their health conditions, communicating with healthcare professionals, and independently accessing health information through digital platforms. Research indicates that patient engagement facilitated by digital technologies can improve communication efficiency, accelerate service responses, and enhance patients' experiences when interacting with healthcare providers (Kruse et al., 2023; Haluza & Jungwirth, 2023). Furthermore, the use of digital communication technologies can strengthen interpersonal relationships between healthcare professionals and patients, as communication can occur continuously beyond face-to-face consultations (Rauschnabel et al., 2024).

From a theoretical perspective, the concept of digital patient engagement can be explained through the Patient Health Engagement (PHE) Model, which emphasizes the active involvement of patients in managing their health conditions and participating in healthcare decision-making processes (Graffigna & Barello, 2022). The model suggests that greater engagement enables patients to develop stronger relationships with healthcare providers and become more committed to their healthcare journey. In digital healthcare environments, communication technologies facilitate this engagement by providing patients with timely access to information, opportunities for interaction, and continuous support beyond traditional face-to-face consultations. Consequently, digital communication platforms may play an important role in fostering patient participation and strengthening healthcare relationships.

In addition, trust and relationship marketing perspectives provide a useful framework for understanding how digital communication contributes to patient loyalty. According to Mayer et al.'s (1995) Trust Theory, trust develops when individuals perceive service providers as competent, reliable, and genuinely concerned about their well-being. Responsive, clear, and personalized communication can therefore strengthen patients' trust in healthcare professionals. Furthermore, relationship marketing theory emphasizes the importance of continuous interactions in developing long-term relational bonds between service providers and customers. Within healthcare services, patient satisfaction and trust are often considered important antecedents of loyalty, as satisfied and trusting patients are more likely to maintain long-term relationships, revisit the same healthcare provider, and recommend the service to others (Moliner-Tena et al., 2019).

One of the most widely used digital communication applications globally is WhatsApp. This application offers several advantages, including ease of use, broad accessibility, and real-time communication capabilities. With its extensive user base across many countries, WhatsApp has become one of the most frequently used communication platforms in everyday life, including in the context of healthcare services (Montag et al., 2021). Within healthcare settings, WhatsApp has increasingly been utilized as a communication medium between healthcare providers and patients for various purposes, such as initial consultations, the provision of health information, appointment reminders, and post-treatment follow-up communication. The use of instant messaging applications such as WhatsApp enables faster, more flexible, and more personalized communication between physicians and patients, thereby improving the quality of their relationship (Kapepoa et al., 2025).

Several studies have demonstrated that the use of instant messaging applications in healthcare services can improve communication effectiveness between healthcare professionals and patients. Messaging-based communication allows patients to receive quicker responses to their health-related questions or concerns. Additionally, digital communication provides patients with a more comfortable space to express health information openly because interactions do not always have to occur face-to-face (Johnston et al., 2022). In clinical practice, WhatsApp is also frequently used to facilitate follow-up communication after medical consultations, provide health education, and monitor patients' health conditions after treatment (Mars & Scott, 2022).

Effective communication between healthcare professionals and patients is one of the key factors in improving healthcare service quality. Good communication enables patients to gain a clearer understanding of their health conditions, treatment procedures, and necessary care measures. Furthermore, effective communication can increase patients' trust in healthcare professionals and strengthen their overall experience during the healthcare process. In the current digital era, the use of communication technology has become an important element in supporting these communication processes and enhancing the overall patient experience

(Ibáñez-Hernández et al., 2026). Other studies also indicate that responsive and empathetic digital communication can improve perceptions of healthcare service quality and strengthen long-term relationships between patients and healthcare providers (Menichetti et al., 2021).

From a healthcare management perspective, patient engagement through digital communication also has the potential to influence patient loyalty. Patient loyalty refers to the tendency of patients to return to the same healthcare provider for future services and to recommend the provider to others. In an increasingly competitive healthcare industry, patient loyalty has become a strategic factor for the sustainability of healthcare services. Previous studies suggest that positive patient experiences, high-quality communication, and effective service interactions can significantly contribute to the development of patient loyalty (Burhanuddin et al., 2025). Moreover, patient loyalty is influenced by patients' level of trust in healthcare professionals, their perceptions of service quality, and the emotional experiences they gain during healthcare interactions (Moliner-Tena et al., 2019).

Recent studies also emphasize that digital communication plays an important role in building patient loyalty. Continuous interactions through digital platforms enable patients to feel more valued and provide easier access to healthcare professionals. This condition can strengthen the interpersonal relationship between physicians and patients and enhance patients' emotional attachment to healthcare providers (Rauschnabel et al., 2024). Therefore, the use of digital communication technologies such as WhatsApp does not merely function as a communication tool but also serves as a strategic medium for building long-term relationships between patients and healthcare professionals.

Despite the growing body of literature on digital health communication, several important gaps remain. First, previous studies have predominantly examined formal digital health systems, including telemedicine platforms, patient portals, and hospital-based digital applications. Comparatively little attention has been given to WhatsApp as an informal yet widely used communication medium in everyday physician-patient interactions. Second, existing studies have focused primarily on healthcare institutions and digital service systems, while evidence from private medical practices remains limited. Third, although WhatsApp is deeply embedded in daily communication practices in Indonesia, empirical research exploring its role in fostering patient engagement and loyalty within the Indonesian healthcare context is still scarce. Finally, most previous studies have employed quantitative approaches to examine digital health technologies, leaving limited qualitative understanding of how communication quality, patient satisfaction, and trust contribute to the development of patient loyalty through everyday digital interactions.

From a theoretical perspective, this study draws upon the Patient Health Engagement (PHE) Model, which emphasizes patients' active involvement in healthcare processes, Mayer et al.'s Trust Theory, which explains the development of trust through perceptions of ability, integrity, and benevolence, and relationship marketing perspectives that highlight the importance of long-term relational exchanges in fostering customer loyalty. These theoretical perspectives provide a conceptual foundation for understanding how WhatsApp-based communication may facilitate patient engagement, strengthen trust and satisfaction, and ultimately support patient loyalty.

Based on these identified gaps, this study aims to explore the role of digital patient engagement through WhatsApp communication in fostering patient loyalty within private medical practices in West Bandung Regency, Indonesia. Specifically, the study examines how communication quality, patient satisfaction, and patient trust function as relational mechanisms that contribute to the development of patient loyalty. By focusing on an underexplored communication platform and contextual setting, this study seeks to extend the literature on digital health communication and provide empirical insights into patient-centered healthcare relationships in the Indonesian context.

2. RESEARCH METHOD

This study employed a qualitative approach using an instrumental case study design (Stake, 1995) to gain an in-depth understanding of how WhatsApp-based communication facilitates digital patient engagement and contributes to patient loyalty within healthcare services. A qualitative approach was selected because the study seeks to explore the experiences, perceptions, and social processes underlying digital interactions between physicians and patients. The instrumental case study design allows a specific case to be used as a means of understanding a broader phenomenon. In this research, two general practitioners, Dr. Yulbrin and Dr. Fuji, and their respective medical practices in West Bandung Regency served as the cases through which the phenomenon of digital patient engagement, communication quality, patient satisfaction, trust, and loyalty could be examined in depth.

The research participants consisted of patients who had communicated with the physician via WhatsApp, as well as the two physicians who served as the primary subjects of the case study. Participants were selected using a purposive sampling technique, which involves choosing informants who have direct experience with the phenomenon being studied. The study involved a total of 18 informants, consisting of 16 patients and 2 general practitioners. Participants were selected using purposive sampling because they possessed direct experience with WhatsApp-based healthcare communication. Eligible patients had

communicated with their physicians via WhatsApp on multiple occasions, had received healthcare services from the participating physicians for at least six months, and voluntarily agreed to participate in the study. Data collection continued until data saturation was achieved, indicated by the repetition of themes and the absence of substantially new information.

Data were collected through methodological triangulation, which included in-depth interviews, participant observation, and document analysis. Semi-structured interviews were conducted with patients and the two physicians to explore their experiences using WhatsApp as a medium for healthcare communication. The interviews focused on several key aspects, including the clarity of information provided by the physicians, the response speed to patient messages, empathy in communication, the level of patient satisfaction with digital communication, and patients' perceptions of trust and loyalty toward the physicians. In addition to interviews, participant observation was conducted to understand the natural dynamics of communication occurring in WhatsApp conversations between physicians and patients. Only WhatsApp conversations for which both physicians and patients had provided explicit consent were included in the observation and document analysis process. This observation examined communication interaction patterns, physicians' response time to patient messages, the types of messages exchanged, as well as the forms of emotional support and health education provided by physicians to their patients.

This study also utilized document analysis of various relevant digital data sources, including anonymized WhatsApp conversations, clinical practice notes related to patient communication, and the researcher's reflective notes recorded during the research process. The purpose of this document analysis was to identify communication patterns, the interaction style between physicians and patients, and the forms of informational and emotional support provided through digital communication. A summary of the data collection techniques used in this study is presented in Table 1.

Table 1. Data Collection Technique

Data Collection Technique	Data Source	Purpose of Data Collection	Number / Data Units
In-depth Interviews	Patients and physician	To explore experiences of WhatsApp communication, as well as patient satisfaction, trust, and loyalty	16 patients and 2 physicians
Participant Observation	WhatsApp interactions between physicians and patients	To identify communication patterns, response time, and forms of digital interaction	Observation of active conversations
Document Analysis	WhatsApp conversation threads, clinical practice notes, and researcher reflective journals	To identify communication patterns, interaction styles, and forms of informational and emotional support	34 conversation threads

The study was conducted over a two-month period, from November to December 2025, in two general medical practices located in West Bandung Regency. The research procedure began with a preparation phase, which included the development of research instruments, obtaining research permits, and securing participant consent through informed consent procedures. The subsequent stage involved data collection through interviews, observation of WhatsApp-based communication, and the collection of relevant conversation documents. After the data had been gathered, the process continued with transcription, coding, and the identification of emerging research themes.

Prior to data collection, informed consent was obtained from all participants. Participants were informed about the objectives of the study, the voluntary nature of participation, the use of interview and WhatsApp communication data, and their right to withdraw from the study at any time without consequences. Because the study involved private healthcare communication, particular attention was given to confidentiality and data protection. All identifying information was removed during transcription and analysis, pseudonyms were used in reporting the findings, and all digital data were stored in password-protected files accessible only to the research team. Only WhatsApp conversations for which both physicians and patients had provided explicit consent were included in the observation and document analysis process.

Data analysis in this study employed the interactive analysis model developed by Miles, Huberman, and Saldaña, which consists of three main stages: data reduction, data display, and conclusion drawing. In the data reduction stage, the data obtained from interviews, observations, and documents were analyzed through an open coding process. The initial codes were then categorized into the main research themes, namely communication quality, patient satisfaction, patient trust, and patient loyalty. In the data display stage, the analytical results were presented in the form of thematic matrices, descriptive narratives, and representative interview quotations.

One of the participating physicians occupied an insider position within the research context. Recognizing the potential influence of this position on data collection and interpretation, reflexive memos

were maintained throughout the research process. The research team regularly discussed emerging codes and themes to minimize subjective bias and enhance analytical rigor. Furthermore, member checking and triangulation were employed to ensure that the findings accurately represented participants' perspectives rather than the assumptions of the researchers.

The final stage involved drawing conclusions through the interpretation of relationships among the identified themes in order to understand how digital communication through WhatsApp contributes to the development of patient loyalty. To enhance the trustworthiness of the findings, several strategies were employed. Coding was initially conducted by the primary researcher and subsequently reviewed through discussions among the research team to ensure consistency in interpretation. An audit trail documenting analytical decisions, coding development, and theme refinement was maintained throughout the study. Member checking was conducted with selected participants to verify the accuracy of interpretations and ensure that the findings reflected their experiences. In addition, methodological triangulation through interviews, observations, and document analysis was used to strengthen the credibility and dependability of the results.

This study also adhered to research ethics principles by ensuring that all participants provided informed consent prior to participating in the study. The identities of participants as well as the content of WhatsApp conversations analyzed in this research were anonymized to protect the confidentiality of personal data. All research data were used solely for academic purposes and were securely stored to ensure data protection.

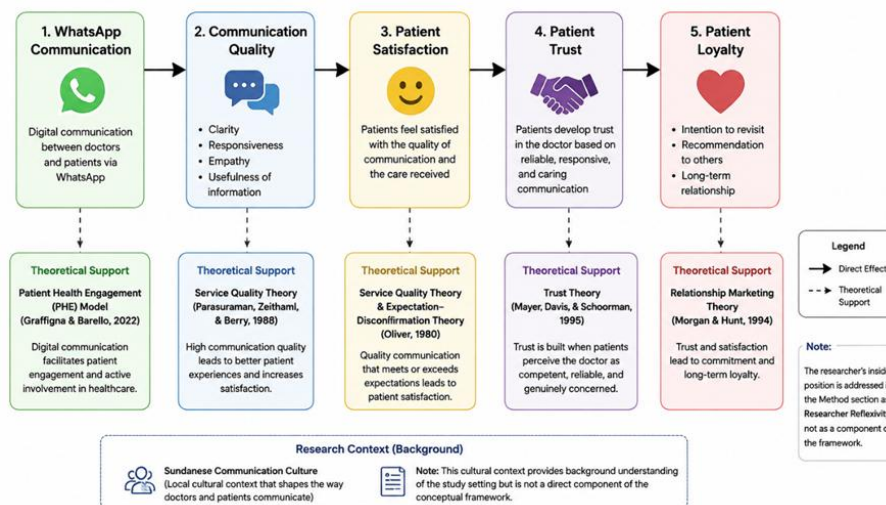


Figure 1. Research Framework: Digital Patient Engagement and Loyalty Through WhatsApp Communication

This research framework illustrates how WhatsApp-based communication contributes to the development of patient loyalty through a series of relational mechanisms. The process begins with digital communication between physicians and patients via WhatsApp, which facilitates timely, accessible, and personalized interactions. Effective communication subsequently enhances communication quality, reflected in clarity, responsiveness, empathy, and the usefulness of information provided by physicians. High communication quality contributes to greater patient satisfaction by improving patients' experiences during healthcare interactions. Satisfied patients are more likely to develop trust in their physicians, particularly when communication demonstrates competence, reliability, and genuine concern for patient well-being. In turn, patient trust serves as a key antecedent of patient loyalty, which is manifested through repeat visits, long-term relationships, and willingness to recommend the physician to others. The framework is supported by the Patient Health Engagement (PHE) Model, Trust Theory, Service Quality Theory, and Relationship Marketing Theory, which collectively explain the pathway through which digital communication strengthens patient engagement, satisfaction, trust, and ultimately patient loyalty.

3. RESULTS AND DISCUSSION

This study involved two groups of informants, namely patients and physicians who use WhatsApp as a communication medium in healthcare services. The patient informants consisted of 16 individuals who had communicated with the physicians through WhatsApp for health consultations, treatment follow-ups, or clarification of medical information. The physician informants included two general practitioners who actively utilize WhatsApp in their daily medical practice.

Table 2. Characteristics of Research Participants

Participant Code	Role	Gender	Age Range	Education Level	Occupation	Duration as Patient	Frequency of WhatsApp Communication
P1–P16	Patient	Male/Female	23–66 years	Secondary School to Postgraduate	Homemaker, Employee, Entrepreneur, Retiree	< 6 months to > 1 year	Weekly to Monthly
D1	Physician	Male	57 years	Medical Physician	General Practitioner	30+ years practice experience	Daily
D2	Physician	Female	36 years	Medical Physician	General Practitioner	5 years practice experience	Daily

The characteristics of the patient informants demonstrate diverse demographic backgrounds, providing a broad range of perspectives on digital communication experiences with physicians. The age of the participants ranged from 23 to 66 years, with the majority being female. The participants’ educational backgrounds varied from secondary education to postgraduate degrees, while their occupations included homemakers, private-sector employees, entrepreneurs, and retirees. The duration of their relationship as patients also varied, ranging from less than six months to more than one year.

The two physicians participating as research informants also have different levels of professional experience. Dr. Yulbrin Manurung has more than 30 years of medical practice experience and has been using WhatsApp as a communication medium with patients for the past six years. Meanwhile, Dr. Fuji has five years of medical practice experience and has utilized WhatsApp for the last five years to support communication with patients, particularly for conducting follow-ups with patients suffering from chronic conditions.

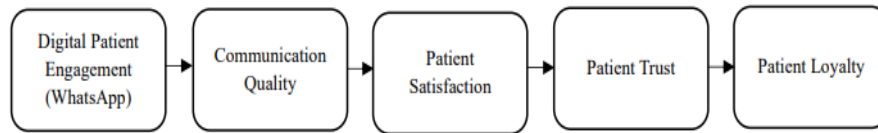


Figure 2. Research Finding Model

Figure 2 illustrates that digital patient engagement through WhatsApp begins with the establishment of high-quality communication between physicians and patients. Clear, responsive, and personalized communication enhances patient satisfaction. This satisfaction subsequently strengthens patient trust in the physician, which ultimately leads to patient loyalty manifested through repeat visits, emotional attachment, and recommendations to others. Therefore, WhatsApp functions as a digital engagement medium that strengthens long-term relationships between patients and healthcare providers.

3.1. Communicaitaion Quality

The findings of this study indicate that the use of WhatsApp contributes positively to the quality of communication between physicians and patients. From the patients’ perspective, communication quality is reflected in three main dimensions: clarity of information, response speed, and personal attention.

First, patients perceive that the information provided by physicians through WhatsApp is easy to understand and communicated using clear language. Information clarity is particularly important in healthcare communication as it helps patients better understand their medical conditions and the treatment instructions provided by physicians. In the context of digital communication, message clarity becomes even more crucial due to the limited presence of non-verbal cues in text-based interactions. Second, the speed of physicians’ responses to patient messages emerges as an important factor influencing patients’ perceptions of service quality. Prompt responses create a sense of security for patients and signal that physicians care about their health conditions. Responsiveness is widely recognized as one of the key dimensions of healthcare service quality that significantly influences patient satisfaction. Third, although communication occurs through a digital platform, patients still perceive a sense of personal attention from physicians. Physicians are able to demonstrate empathy and concern through the messages they deliver, which helps establish a closer interpersonal relationship with patients.

One patient explained:

"Whenever I have questions about my medication, the physician usually replies within a short time. Even when I am worried about my condition, I receive clear explanations that help me feel calmer." (P7)

Another participant stated:

"The messages are easy to understand because the physician uses simple language and provides detailed explanations. I rarely feel confused after receiving information through WhatsApp." (P12)

The physicians also emphasized the importance of responsiveness in maintaining communication quality. As one physician explained:

"WhatsApp allows me to respond quickly to patients' concerns and provide follow-up guidance without requiring them to visit the clinic immediately." (D1)

The findings demonstrate that WhatsApp serves as an effective communication channel that improves communication quality through clarity of information, responsiveness, and personalized interaction. Participants consistently emphasized that rapid responses and understandable explanations helped them feel more secure and supported throughout their healthcare journey.

These findings extend previous research on digital health communication by demonstrating that commonly used messaging applications can facilitate meaningful physician–patient interactions beyond formal telemedicine platforms. From the perspective of the Patient Health Engagement (PHE) Model, continuous communication enables patients to remain actively engaged in managing their health conditions and strengthens their involvement in healthcare decision-making processes (Graffigna & Barello, 2022).

3.2. Patient Satisfaction

The results indicate that high-quality communication through WhatsApp contributes to increased patient satisfaction. This satisfaction is reflected in three main aspects: fulfillment of patient expectations, added value compared to face-to-face consultations, and overall satisfaction with the communication experience.

First, communication through WhatsApp is perceived as meeting patients' expectations in obtaining additional information after face-to-face consultations. Patients feel that it is easier to ask follow-up questions regarding medication use, control schedules, or clarification of their health conditions.

Second, WhatsApp provides added value in healthcare services by enabling more flexible communication. Patients can revisit questions that they may have forgotten during in-person consultations. Nevertheless, some patients still view face-to-face consultations as essential, particularly for physical examinations or more complex medical conditions.

Third, overall patient satisfaction with WhatsApp communication is high. This satisfaction arises because digital communication improves the accessibility of healthcare services while also giving patients the feeling that they are receiving attention from their physicians.

A patient described the benefits of WhatsApp communication as follows:

"Sometimes I forget to ask certain questions during the consultation. Through WhatsApp, I can ask later and receive clarification without having to return immediately to the clinic." (P4)

Another participant noted:

"I feel more satisfied because communication is easier and more flexible. It saves time and gives me confidence that help is available when needed." (P9)

These statements indicate that accessibility and communication flexibility contribute significantly to patient satisfaction.

The study findings indicate that communication quality is an important antecedent of patient satisfaction. Participants valued WhatsApp because it allowed them to obtain clarification, ask follow-up questions, and maintain contact with physicians after face-to-face consultations. Unlike traditional healthcare interactions that are limited to clinic visits, WhatsApp communication provides ongoing access to healthcare information and support. This finding supports previous studies suggesting that accessibility and responsiveness are important determinants of patient satisfaction in digital healthcare environments (Alharthi, 2025).

Furthermore, the findings suggest that satisfaction is influenced not only by informational benefits but also by emotional reassurance, which has received less attention in previous studies on digital communication.

3.3. Patient Trust

Patient satisfaction with WhatsApp communication contributes to the development of trust in physicians. This trust is formed through three main dimensions proposed by Mayer et al., namely ability, integrity, and benevolence.

The ability dimension is reflected in patients' perceptions of physicians' competence in providing clear and accurate medical explanations. When explanations are easy to understand, patients feel more confident in the physician's professional capability. The integrity dimension is reflected in the consistency and honesty demonstrated by physicians when delivering medical information. Patients perceive that physicians provide transparent and trustworthy explanations. The benevolence dimension is reflected in physicians' concern for patients' well-being. Through WhatsApp communication, physicians are able to express empathy and care, which helps patients feel calmer and more comfortable when sharing their health concerns.

One participant explained:

"I trust the physician because the explanations are always consistent and honest. If there is something uncertain, the physician explains it clearly rather than making assumptions." (P3)

Another patient stated:

"The physician always asks about my condition after treatment. That makes me feel cared for and increases my confidence in the physician." (P11)

These narratives illustrate how patients develop trust through perceptions of physician competence, transparency, and genuine concern.

A key finding of this study is that patient trust emerged through perceptions of physician ability, integrity, and benevolence. Participants frequently associated trust with clear explanations, consistent information, and physicians' willingness to provide follow-up support through WhatsApp. This finding strongly aligns with Mayer et al.'s Trust Theory, which proposes that trust develops when individuals perceive competence, honesty, and genuine concern from service providers. The results suggest that digital communication can effectively support trust-building processes when interactions remain responsive, transparent, and patient-centered.

Importantly, this study extends existing literature by showing that trust can be strengthened not only during clinical encounters but also through continuous digital interactions outside the consultation setting.

3.4. Patient Loyalty

Patient trust established through WhatsApp communication contributes to the development of patient loyalty. This loyalty is reflected in three main dimensions: behavioral loyalty, attitudinal loyalty, and advocacy loyalty. First, behavioral loyalty is reflected in patients' intentions to continue consulting the same physician in the future. Patients with higher levels of trust tend to make repeat visits consistently. Second, attitudinal loyalty is reflected in patients' emotional attachment to their physicians. Patients feel comfortable communicating with physicians who understand their medical history and provide personalized attention. Third, advocacy loyalty is reflected in patients' willingness to recommend the physician to others. Patients who feel satisfied and trust their physician are more likely to share positive experiences with family members or friends.

One patient explained:

"I continue to consult the same physician because I already know that I can communicate easily whenever I need advice. It makes me feel comfortable and secure." (P8)

Another participant stated:

"I have recommended this physician to my family members because the communication is very good and the physician is always responsive." (P15)

These statements demonstrate that patient loyalty extends beyond repeat visits and includes emotional attachment and positive word-of-mouth recommendations.

The findings reveal that patient loyalty is developed through a relational process beginning with communication quality, followed by satisfaction and trust. Patients who experienced responsive and personalized communication reported stronger intentions to revisit the same physician and recommend healthcare services to others. This finding is consistent with Relationship Marketing Theory, which emphasizes the importance of long-term relational exchanges in fostering loyalty. The results indicate that WhatsApp functions not merely as a communication tool but as a relationship-building mechanism that strengthens emotional bonds between physicians and patients.

A particularly important contribution of this study is the identification of digital patient engagement as an intermediary mechanism linking communication practices to patient loyalty. While previous studies have primarily focused on telemedicine systems and patient portals, this study demonstrates that widely used messaging applications such as WhatsApp can also play a strategic role in sustaining long-term physician-patient relationships.

Table 3. Coding Framework and Thematic Matrix

Initial Codes	Categories	Themes
Fast response, immediate feedback, availability	Responsiveness	Communication Quality
Clear explanation, understandable language	Information Clarity	Communication Quality
Personalized messages, empathy, follow-up care	Personal Attention	Communication Quality
Easy access to physician, communication flexibility	Accessibility	Patient Satisfaction
Time saving, convenience, reassurance	Perceived Benefits	Patient Satisfaction
Competent explanation, medical expertise	Ability	Patient Trust
Honest information, consistency	Integrity	Patient Trust
Caring attitude, concern for patient well-being	Benevolence	Patient Trust
Repeat consultation intention	Behavioral Loyalty	Patient Loyalty
Emotional attachment to physician	Attitudinal Loyalty	Patient Loyalty
Recommending physician to others	Advocacy Loyalty	Patient Loyalty

3.5. Digital Patient Engagement and Its Role in Strengthening Patient Loyalty

Overall, the findings of this study suggest that the use of WhatsApp in physician-patient communication functions not only as a medium for exchanging medical information but also as a form of digital patient engagement that plays an important role in building long-term relationships between patients

and healthcare professionals. Digital patient engagement refers to the active involvement of patients in communication processes and health management through digital technologies. In the context of this study, such engagement is reflected in the intensity of patient communication with physicians through WhatsApp, the ease with which patients can ask questions, and patients' openness in expressing health concerns outside face-to-face consultations.

The findings indicate that digital patient engagement through WhatsApp enhances the quality of physician–physician relationships by enabling communication that is more responsive, personalized, and continuous. Consistent interaction through digital platforms allows patients to feel more attended to and provides easier access to health information. This condition contributes to the development of a more positive healthcare experience, which ultimately increases both patient satisfaction and trust in physicians. These findings are consistent with recent research showing that digital patient engagement strategies through healthcare communication platforms can enhance patient involvement in health management and strengthen therapeutic relationships between patients and healthcare professionals (Barello et al., 2022; Kruse et al., 2023).

Furthermore, this study demonstrates that patient engagement in digital communication through WhatsApp directly contributes to the development of patient loyalty. Patients who actively interact with physicians through WhatsApp tend to exhibit higher levels of trust and a stronger intention to continue using the same healthcare services in the future. This loyalty is reflected in patients' intentions to make repeat visits, psychological preferences for particular physicians, and willingness to recommend physicians to others. In other words, digital patient engagement through WhatsApp functions as a relational mechanism that strengthens emotional bonds between patients and physicians, thereby encouraging long-term patient loyalty.

These findings also support international studies highlighting that patient engagement through digital communication technologies can improve patient retention and strengthen patient-centered healthcare relationships (Haluza & Jungwirth, 2023; Rauschnabel et al., 2024). In the context of increasingly digitalized healthcare services, the use of communication platforms such as WhatsApp can serve as an effective strategy for healthcare professionals to improve the quality of interaction with patients while building sustainable service relationships.

The findings further reveal that patients perceive WhatsApp not merely as a communication tool but as an extension of healthcare support. As one participant explained:

"Being able to contact my physician through WhatsApp makes me feel that I am not facing my health problems alone. The communication feels continuous, even outside clinic visits." (P6)

This perception illustrates how digital patient engagement strengthens the relational bond between physicians and patients and contributes to sustained patient loyalty.

Therefore, this study confirms that digital patient engagement through WhatsApp plays a strategic role in influencing patient loyalty through a relational process that begins with communication quality, continues with patient satisfaction and trust, and ultimately results in patient loyalty manifested through repeat visits, emotional attachment, and recommendations to others. These findings reinforce the relevance of digital communication approaches in healthcare practice and provide practical implications for healthcare professionals in optimizing communication technologies to strengthen relationships with patients.

4. CONCLUSION

This study explored the role of WhatsApp-based digital patient engagement in strengthening patient loyalty within private medical practices in West Bandung, Indonesia. The findings reveal that clear, responsive, and personalized communication through WhatsApp enhances communication quality, which subsequently increases patient satisfaction and trust. These relational mechanisms ultimately contribute to patient loyalty, reflected in repeat consultations, emotional attachment, and willingness to recommend physicians to others.

The study contributes to the digital health communication literature by demonstrating how commonly used messaging applications can facilitate patient engagement and strengthen long-term physician–patient relationships. The findings also support the Patient Health Engagement Model, Trust Theory, and Relationship Marketing Theory by illustrating the pathway through which communication quality, satisfaction, and trust contribute to loyalty.

From a practical perspective, healthcare providers may consider developing structured guidelines for WhatsApp-based communication, including response-time expectations, digital informed consent procedures, confidentiality safeguards, and documentation of clinically relevant communications within medical records. Despite these contributions, this study has several limitations that provide opportunities for future research. The study was conducted in only two private medical practices and involved a relatively small number of participants. The findings are based on participants' subjective experiences and may have been influenced by physician characteristics, patient age, digital literacy, and pre-existing physician–patient relationships. In addition, the insider position of one participating physician may have affected participant responses despite the reflexivity measures employed. Future studies may involve broader healthcare settings, larger participant

groups, and comparative analyses across different digital communication platforms to enhance the transferability of findings.

ACKNOWLEDGEMENTS

The author would like to express their sincere gratitude to all patients and physicians who participated in this study and generously shared their experiences and perspectives. The authors also thank the participating medical practices in West Bandung Regency for their cooperation and support during the research process. The authors declare no financial or commercial conflicts of interest related to this study. One of the participating physicians was involved in the research context; however, measures such as researcher reflexivity, data triangulation, and collaborative review were employed to minimize potential bias during data collection and analysis. All participants voluntarily agreed to participate in this study and provided informed consent prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of participation, and the use of interview and WhatsApp communication data for research purposes. All identifying information was removed during transcription and analysis, and all data were anonymized to ensure participant confidentiality and privacy.

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