

ADOPTION OF VIRTUAL CARE IN A MALAYSIAN GOVERNMENT HOSPITAL: A QUALITATIVE STUDY OF HEALTHCARE PROVIDERS' PERCEPTIONS, BARRIERS, AND FACILITATING CONDITIONS

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ABSTRACT

The COVID-19 pandemic marked a tipping point in the global adoption of virtual care (VC). In Malaysia, VC gained traction notably in primary healthcare, while adoption within hospital settings has yet to fully embrace its potential. This study aims to understand VC adoption in a tertiary government hospital, focusing on healthcare providers' perceptions, barriers, and facilitating conditions influencing integration. Informed by theoretical frameworks, this qualitative study examined provider characteristics, perceived ease of use (PEOU), perceived usefulness (PU), subjective norms (SN), barriers, and facilitating conditions. Semi-structured interviews with a diverse group of purposively sampled healthcare providers (HCPs) and administrators from outpatient departments were transcribed and analyzed through directed content analysis. Findings indicate that VC adoption and practice varied across departments, often driven by individual- or department-led initiatives. PEOU is shaped by patient digital literacy and infrastructure access, influencing platform and modality selection. PU—encompassing operational efficiency, safety, convenience, and accessibility—emerged as a salient influence on adoption intentions. However, organizational constraints, communication challenges, and particularly limitations in clinical assessment limit these perceived benefits, contributing to concerns regarding effectiveness, quality, and medicolegal risk. SN was shaped by the nature of the work and departmental expectations. Facilitating conditions, including organizational support, infrastructure, policies, and training, were described as supporting factors influencing SN for greater uptake of VC. Providers emphasized the need for comprehensive training covering technical, clinical, and ethical aspects, with a preference for a flexible and interactive approach. This study refines the understanding of VC adoption in a tertiary government hospital by highlighting the interconnected and non-linear relationship between perceptions, barriers, and facilitating conditions in the VC adoption framework. Targeted strategies may promote more comprehensive and sustainable VC implementation, benefiting both patients and HCPs while improving healthcare delivery.

Keywords: Telehealth, virtual care, healthcare providers, perceptions, barriers, training, government hospital.

INTRODUCTION

The integration of telemedicine has transformed healthcare, with virtual care (VC) emerging as a key tool for enhancing quality and equity in service delivery¹. VC refers to healthcare delivery using technology—including consultations and healthcare plans—enabling remote interaction and information exchange² when providers and recipients are not co-located. VC spans various modalities, including videoconferencing, telephone appointments, messaging, emails, and remote monitoring, with versatility in either synchronous or asynchronous delivery. Literature outlines the extensive benefits of VC, from practical and economic to psychological and personalized factors³. Nevertheless, adoption depends on several factors, such as provider characteristics, perceptions, social influences, facilitators, and barriers. Several theoretical frameworks contribute to understanding the

complexities involved; for example, the Diffusion of Innovation Theory by Everett Rogers, the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT)^{4, 5, 6}.

In Malaysia, telemedicine initiatives preceded COVID-19 but gained momentum during the pandemic in line with global trends. This is evidenced by the nationwide rollout of VC in primary healthcare settings⁷. However, implementation in hospitals remains non-comprehensive, preventing seamless integration in areas where VC could be most beneficial, particularly where rising patient loads exacerbate overcrowding. Despite this, literature on VC implementation in Malaysian hospitals remains scarce.

This study seeks to evaluate VC adoption, describe healthcare providers' (HCPs) perceptions, and

identify challenges, facilitating conditions, and HCP training needs. HCPs are the main actors at the forefront of digital transformation in healthcare. Understanding their practices, perceptions, and training needs is essential for overcoming barriers and leveraging facilitating conditions to enhance VC adoption. A conceptual framework was developed based on theory and the literature, outlining constructs that influence the intention to use and shape the adoption of VC among HCPs, as illustrated in Figure 1. Focusing on a government urban health facility, this study contributes insights to inform strategies for more coordinated and sustainable VC integration for better patient-centered care.

METHODOLOGY

This study employed a qualitative description approach as a standalone research method⁸ to provide a straightforward description of participants' perceptions and experiences⁹. This design is effective for studies with direct implications for healthcare improvement. The study was conducted at a tertiary government hospital in Malaysia's capital, comprising 17 outpatient specialist clinics, an emergency department (ED), and 12 ancillary services. The facility is managed by the Total Hospital Information System (THIS), which integrates clinical, administrative, and financial systems.

A purposive maximum-variation sampling strategy was used to recruit diverse HCPs and administrators from various departments, including doctors, nurses, assistant medical officers, and ancillary services. Participants were required to have at least three months' experience in outpatient specialist clinics. An initial sample size of 12-15 was estimated for maximum variation¹⁰. Recruitment and analysis proceeded iteratively until code saturation was reached at $n = 20$, at which point no new codes or categories emerged regarding the predefined conceptual constructs. Observation and field notes were used to contextualize the interview data by capturing non-verbal cues and supporting the interpretation of workflow processes, environmental context, and infrastructure limitations, thereby providing a better understanding of VC implementation within outpatient settings.

Data were collected through semi-structured key informant interviews that were pilot-tested for clarity and appropriate timing. These interviews used open-ended questions to allow flexible interaction while maintaining a focus on key topics. Interviews lasted between 45 and 90 minutes, were conducted in private hospital settings, were audio-recorded and transcribed, and were then checked for accuracy against the recordings.

Conceptual Constructs

The conceptual framework (Figure 1) consists of several key constructs, which follow these operational definitions: **Perceived Ease of Use (PEOU)** refers to the degree to which a person believes using VC would be free of effort, with a simple interface that is easy to learn and handle. **Perceived Usefulness (PU)** is defined as the degree to which a person believes that using VC would enhance performance, including benefits, reliability, and improved effectiveness. **Subjective Norms (SN)/Social Influence** represents a person's belief that others believe that they should use a system¹¹. **Barriers** are any obstacles viewed as hindering the adoption of VC. Meanwhile, **Facilitating Conditions** refer to the extent to which an individual believes that an organization and technical infrastructure exists to support the use of the system⁵.

Data analysis followed directed qualitative content analysis guided by a pre-developed conceptual framework. This ensured a structured process and allowed a conceptually driven examination of the relationships among constructs¹⁰. The initial codes were deductively drawn from the framework, followed by inductive coding to identify new categories and subcategories. Data were coded by the first researcher with consistency maintained through clear definitions and cross-checked by a secondary researcher, with discrepancies or doubts resolved through discussion and consensus. NVivo 12 software facilitated the iterative process. Findings were presented in qualitative narrative passages, adding tables where necessary⁹. Verbatim quotations align data with interpretation, while an audit trail, including coding logs and analytic memos, enhances transparency. Member checking was not done due to time constraints and high workloads in clinical settings.

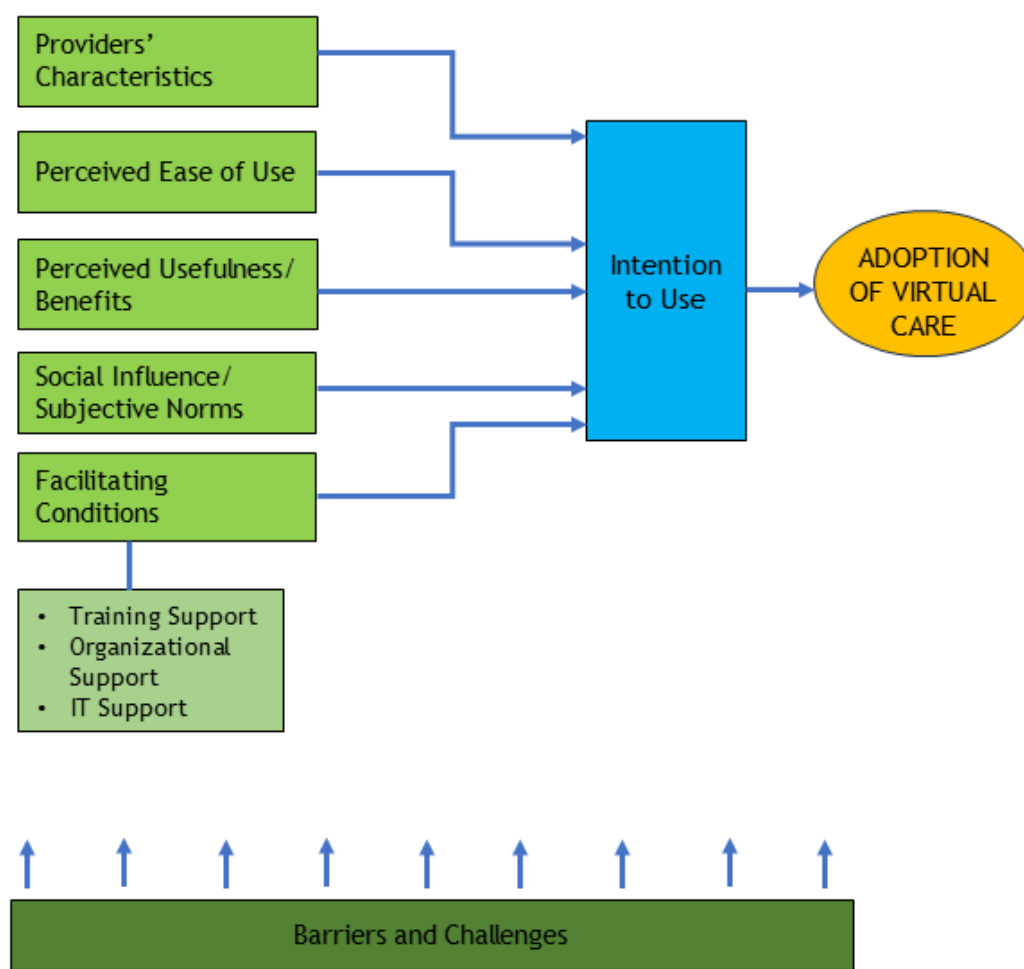


Figure 1: Conceptual framework of virtual care

The first researcher acknowledges prior experienced within the public health system, which possibly influenced interpretation. Reflexive journaling and peer debriefing were used to minimize bias and maintain analytic rigor.

Ethical approval was obtained from the Medical Research Ethics Committee (MREC) Malaysia, and the study was registered under the Malaysia National Medical Research Register (NMRR). Written informed consent was obtained, including permission for audio recording. All data were stored in a password-protected file and an encrypted secure drive with a maximum retention of 5 years, and all transcripts were de-identified to ensure confidentiality.

RESULTS

A total of 20 interviews were conducted with individuals from diverse demographic backgrounds. The providers' characteristics are shown in Table 1. The working experience and years of service in the hospital were right-skewed due to a small number of very senior staff with lengthy service records in the studied hospital.

Analysis of the interview transcripts identified four main themes: (1) practice of virtual care, (2) perceptions of virtual care, (3) barriers and challenges to adoption, and (4) facilitating conditions, as detailed in Tables 2a and 2b. Framework constructs were used as analytic lenses, with interpretations reflecting patterns and relationships described by participants rather than implying causal effects.

Practice of Virtual Care

The COVID-19 pandemic marked the initiation of VC in the studied hospital, ensuring care continuity amidst Movement Control Order (MCO) restrictions. It was primarily used for patient and family communication, rehabilitation, weight management, and supporting staff experiencing burnout, with practice varying based on departmental needs or regular scheduling. As HCPs emphasized, they "didn't want to leave the patients during the COVID-19 pandemic", making VC an appealing alternative to maintain engagement and reduce treatment delays while minimizing exposure risk.

Table 1: Providers' characteristics (N=20)

DEMOGRAPHICS	NUMBER (n)
Age (years)	
Mean	37.7
Median	37.0
Range	28.0
Education	
Diploma	3
Degree	9
Master's	7
PhD	1
Working experience (years)	
Mean	12.2
Median	11.0
Range	27.0
Years of service in the Hospital (years)	
Mean	4.8
Median	3.0
Range	19.7
Experience in virtual care	
Experienced	19
Inexperienced	1
Self- efficacy in technology	
Confident	16
Not confident	4
Departments	
Medical	2
Pediatrics	2
Surgery	2
Orthopedics	2
Obstetrics & Gynecology	2
Psychiatry	2
Pharmacy	1
Physiotherapy	2
Speech Therapy	1
Audiology	1
Dietetics	2
Administration	1

The transition from the pandemic to the endemic phase saw a gradual decline in VC usage. VC in the hospital currently supports workflow, particularly for remote monitoring (e.g., self-reported blood pressure, blood sugar, and post-operative drainage), evaluating test results, and managing cases not requiring physical examination or in-person interaction. Additionally, some departments manage appointments, including external referrals, virtually, while pharmacy services continue to provide virtual counselling

and adherence monitoring. The MyUbat app¹² helps manage prescriptions and enables flexible medicine collection methods such as drive-thru, park-and-go, Medibox (a 24-hour medicine collection locker), and postal delivery.

During the pandemic, WhatsApp video calls were the most commonly used; however, current practice has shifted towards phone calls, as they are perceived as "quick" and "easy."

Table 2a: Summary of themes, categories, and subcategories of virtual care

Themes	Categories	Subcategories and Descriptions
Practice of virtual care	• Use of virtual care	• Patient care. • Managing appointments and referrals. • Prescription management.
	• Intention to use	• High intention • Low intention
	• Modality and platform	• Video calls (WhatsApp/ Google Meet/ Zoom). • Phone calls • Text message (emails/ WhatsApp).
	• Perceived ease of use	• Experience • Self- efficacy
Perceptions influencing virtual care adoption	• Social influence (Subjective norms)	• Influenced • Partially influenced (depending on work nature.) • Not influenced
	• Perceived usefulness	• Access and convenience: Geographical, cost, and time efficiency; more frequent visits, timely intervention, flexible appointments, reduce loss to follow-up. • Operational and safety: Reduced overcrowding and infection risk; maintenance of essential healthcare. • Effectiveness and quality: Effective and comparable in quality to face-to-face for straightforward or follow-up cases.

Despite this shift in practice, video consultations, particularly using Google Meet, remain preferred by many HCPs.

Most participants who are not currently practicing VC expressed an intention to use it under suitable conditions. One HCP noted that they would consider using VC if “the hospital provided all the necessary” support. Subsequent findings describe HCP perceptions and subjective norms, alongside barriers and facilitating conditions shaping VC adoption.

Perception of Virtual Care

Perceptions were categorized into three main areas: (i) perceived ease of use, (ii) social influences or subjective norms, and (iii) perceived usefulness.

Perceived Ease of Use:

Most HCPs reported confidence in using VC technology and found it relatively easy to

operate. Phone calls were rated as the easiest and most widely available modality for patients, with landline phones and PCs readily accessible in clinic rooms. Nevertheless, some HCPs struggled with technical difficulties, particularly those requiring information technology (IT) support for initial setup, camera positioning, lighting, and troubleshooting.

Environmental distractions (noise and limited privacy) and difficulty engaging pediatric patients were also common concerns. Coordinating schedules also posed challenges, as stated by an HCP, “sometimes, the patient didn’t pick up calls and didn’t call back,” causing delays and forcing rescheduling.

Generational differences were also evident, with younger patients adapting quickly to WhatsApp, while elderly patients often required family assistance. As one HCP explained, they had “to change our timing to suit the family member,” disrupting workflow.

Table 2b: Summary of themes, categories, and subcategories of virtual care

Themes	Categories	Subcategories and Descriptions
Barriers constraining virtual care adoption	Provider domain	Resources constraints: Lack of trained human resources, infrastructure shortfalls, and limited funding in some departments. Legal and privacy issues: Medicolegal, privacy, and data security concern; HCP privacy intrusion. Workflow integration: Registration and billing; clinical workflow integration. Clinical assessment: Limited physical examination, interaction, and diagnostic procedures. Provider-patient interaction: - Communication challenges (lack of non-verbal cues, language barriers, cognitive/sensory limitations and internet disruption). - Provider-patient relationships (lack of rapport, bonding and trust).
	Provider-patient domain	
	Patient domain	Access to technology: Low SES groups with limited technology access and digital illiteracy. Potential for overreliance on virtual care.
Facilitating conditions supporting virtual care adoption	Organizational support	- Government or hospital policy. - Guidelines and standardized protocols. - Top management, administrative, and resource support.
	IT support	- Adequate infrastructure. - Technical support.
	Training support	- Training needs (technical, clinical, legal). - Training methods (interactive, simulation, role-play).

Participants described patient digital literacy, infrastructure access, and HCP self-efficacy as shaping the feasibility of different virtual modalities, thereby informing perceptions of ease of use.

Social Influence or Subjective Norms:

Many HCPs were influenced by their peers or departmental practices, especially when colleagues demonstrated successful VC use. However, some remained cautious due to differing work roles or departmental contexts, such as surgical versus medical practices. Others made decisions independently, based on patient needs and personal preferences, rather than peer influence. Nevertheless, the SN construct showed a clear link to VC adoption.

A participant described the social influence on their practice: “If they successfully manage to do virtual care within their time, we might follow; but it depends also on the department, whether the other peer has a similar work nature” (P14).

Perceived Usefulness:

HCPs described the benefits of VC—including improved access, convenience and safety—as contributing to smoother follow-ups, appointment compliance, and optimal resource utilization, which they associated with a greater willingness to use virtual care. VC allowed patients to avoid traffic, the hassle of parking and lengthy wait times, and to take less time off work, thereby easing emotional and logistical strain. One HCP noted, “patients like VC; they are happy because

it is easy", as VC reduces the need for a physical presence.

PU emerged as an important influence on adoption intentions, particularly when VC was seen to enhance efficiency, safety, and continuity of care. However, its usefulness was perceived as being constrained by clinical and contextual limitations, resulting in mixed perceptions of effectiveness and quality. While VC was regarded as an effective alternative, some HCPs reported dissatisfaction, citing concerns that "the effectiveness and quality are slightly lower" than in-person visits, primarily due to the physical limitations of VC. Some participants suggested that establishing an initial physical interaction would enhance the subsequent VC experience.

These constraints were further reflected in discussions of VC use in emergency and mental health contexts, where participants expressed a preference for physical visits to allow better physical and psychological interventions. Additionally, HCPs cautioned against overreliance, suggesting a provider-driven decision in determining consultation mode. In relation to virtual triaging, some HCPs proposed a dedicated virtual unit separate from the emergency department, similar to telecare services in private hospitals.

Barriers/Challenges

Barriers to VC adoption were categorized into three domains: (i) provider-system, (ii) patient, and (iii) mixed provider-patient factors. The subcategories and descriptions are outlined in Table 2b.

The most frequently cited challenge was the inability to conduct physical examinations and direct assessments, which limited diagnostic accuracy and treatment decisions. As one participant emphasized, "In a virtual session, it's quite difficult for us to assess. You have to palpate and hold the patient. It's not just looking at the patient and being able to diagnose it" (P5).

Substituting the examination by "doing an assessment based on the description by the patient" was difficult, because "the patient may not understand what we want to look for virtually," which further complicates diagnosis and treatment.

Other key barriers included communication difficulties, infrastructure limitations, and legal concerns, including unconsented recordings and data misuse. A participant expressed concern: "We are unsure whether VC sessions are recorded or used for personal interests. Our words might be misinterpreted or used against us without our

knowledge" (P13). Overall, participants predominantly attributed challenges to provider-related or mixed provider-patient domains.

Although PEOU, SN, and particularly PU were described as influential, clinical, organizational, and legal barriers continued to constraint VC use. Participants' accounts reflected interactions between these constructs, consistent with the conceptual framework. Nevertheless, facilitating conditions were described as supporting and guiding VC use, which was perceived as helping to reduce potential risks.

Facilitating Conditions and Training

Facilitating conditions encompass key categories: (i) organizational support, (ii) IT support, and (iii) training, with subcategories detailed in Table 2b.

Governance was viewed as important in setting the future rollout of VC adoption. A mandatory policy would likely increase compliance and adoption, as HCPs preferred maintaining the status quo in its absence. As a participant illustrated, "If it's not compulsory, things will remain the same. There's no effect on my practice right now" (P20).

At the same time, policies were expected to allow flexibility to accommodate department-specific needs. Clear guidelines and standardized protocols were considered necessary by HCPs to support consistent VC practices, particularly regarding patient selection and chronic disease management.

Participants described implementing VC as "the challenge in making changes," highlighting the importance of "top-down endorsement" and organizational support for VC establishment. Adequate resource allocation, structured scheduling, and strategic staff deployment were perceived as essential to facilitate coordinated VC implementation. While some departments reported sufficient infrastructure, others felt "they had to make do with existing resources" due to limited funding. Providers emphasized that a stable internet connection, appropriate devices, dedicated spaces, and robust IT support were needed for an effective VC setup, which was still lacking in certain departments. The THIS system was highlighted as a valuable tool, enabling easy access to patient records and timely decision-making. HCPs also expressed trust in government-led online platforms, reducing privacy and data security concerns. Some HCPs advocated for a more structured, hospital-managed VC platform to further streamline VC services.

Training emerged as a key facilitator for HCPs' readiness and confidence to engage in VC.

Participants emphasized the need for structured learning covering technical skills and patient interaction, including legal aspects and regulations. Familiarity with workflow navigation—from patient registration, billing, and payment to logging in, consultations, prescribing, and medication delivery—was among the key training topics mentioned by HCPs for seamless VC integration. This was clearly stated by a respondent:

“I think the overall flow has to be taught. From patient registration to documentation and how the patient takes their prescription? It’s not just seeing the patient, taking a history, giving advice, and plan of care. So, it’s the whole process from the beginning until the end” (P8).

Beyond technical training, other aspects of training included communication, soft skills, and legal, regulatory, and data security aspects, as they were deemed necessary by participants for ethical and professional practice. HCPs emphasized using clear and simple language to facilitate patient understanding and engagement. Furthermore, several HCPs noted that clinical assessment requires a distinct set of skills to navigate the nuances of remote patient management.

To enhance training effectiveness, respondents preferred hands-on practice and case-sharing sessions to prepare for real-life virtual consultations, improving skills and confidence. As P17 noted, “simulation and role-play help us assess the system’s fluidity before handling actual patients”.

Collectively, HCPs’ accounts described how facilitating conditions signal institutional support for VC practice within departments, thereby influencing SN and supporting HCP acceptance. Participants illustrated that training will prepare HCPs with the multiple skills needed to navigate the complexities of VC implementation.

Taken together, the findings suggest that VC adoption unfolds through a coherent pathway where perceived benefits are continually weighed against operational and clinical realities. While PU—particularly in improving efficiency and access—often motivates the intention to use, clinical assessment constraints, workflow demands, and legal concerns limit its translation into routine practice. Sustained implementation, therefore, depends on how departments address these challenges, with facilitating conditions acting as an important factor in reducing uncertainty and perceived risk, strengthening collective expectations and supporting consistent VC uptake.

DISCUSSION

Key Insights into Virtual Care Adoption

This study provides an in-depth understanding of how HCPs in a tertiary government hospital navigate VC adoption within complex organizational, clinical, and policy environments. Rather than following a linear process, adoption was shaped by a dynamic interaction between perceived ease of use, perceived benefits, contextual barriers, and facilitating conditions.

From a conceptual perspective, this study adds contextual insights to existing technology adoption models by illustrating how organizational, clinical, and patient-related factors shape perceptions of usefulness and ease of use. The findings suggest that within the studied hospital, provider acceptance alone may not be adequate for sustained adoption, highlighting the importance of aligning policy with parallel organizational support, infrastructure capacity, and structured training. This is particularly helpful in addressing context-specific barriers and normalizing use through subjective norms.

Efficiency and Convenience: Unlocking Future Potential to Address Fragmented Implementation

The study highlights the fragmented VC implementation across the hospital’s departments, potentially resulting in missed opportunities to alleviate overcrowding. While VC played a crucial role in maintaining service continuity during the pandemic¹³ and reducing infection risks, adoption rates declined post-pandemic¹⁴, reflecting reactive rather than strategic integration.

Current practices remain at a developmental stage¹⁵, which includes patient care and appointment management. In the studied hospital, the pharmacy department has established innovative virtual services, which appear to reduce wait times¹⁶. The advantages and practical usability of VC, consistent with previous studies^{17, 18}, were constrained by a lack of coordinated implementation, limiting the extension of these benefits across departments. While implementing other scopes of VC may take longer, expanding virtual referral management across disciplines may offer a feasible pathway toward a more comprehensive virtual system, potentially enhancing the patient experience and minimizing complaints through remote referral scheduling¹⁹.

Practicality, Accessibility, and Sociocultural Factors in Virtual Care Platforms

Beyond technical considerations, in this setting, the choice of VC mode and platform is influenced by HCP preferences, departmental initiatives, practical barriers, and sociocultural factors. Although providers valued video consultations for assisting with non-verbal communication²⁰, they described barriers related to technological inadequacy and difficulties²¹. Relying on simple landlines, phone calls remain the dominant mode due to their wide accessibility and workflow compatibility²². This suggests that platform choice was driven more by pragmatic considerations than technological advancement, highlighting the importance of balancing innovation with accessibility. The findings indicate that within similar public hospital settings, a policy approach may consider promoting flexible and inclusive platform designs, while maintaining data security and trust²³.

The Role of Policies and Comprehensive Organizational Support

Findings indicate that VC sustainability may benefit from a supportive policy framework. While other studies found that VC is influenced by financial incentives and rewards^{24, 25}, participants in this public tertiary hospital setting described compliance as being shaped more by mandatory policy. However, mandating VC may require parallel organizational support, including strengthened infrastructure²¹, adequate and trained human resources and effective role assignment²⁶, a clear regulatory framework for registration and billing¹⁸, attention to legal and security issues²⁷, and interoperability in data management²⁴. Importantly, VC should complement rather than replace physical visits, allowing flexibility across specialties.

Intersecting Challenges in Virtual Care: The Impact of Physical Limitations and the Role of Guidelines

Physical examination limitations were the most frequently cited challenges—consistent with other studies^{28,29}—contributing to reduced confidence and dissatisfaction among HCPs. These limitations warrant attention, as a previous study by Payne et al.³⁰ highlighted that such limitations may lead to potential safety incidents and adverse patient outcomes. Mobile health tools can potentially support examinations and diagnostics, as reported by other studies; unfortunately, high implementation costs may pose financial barriers^{18, 31}. Participants suggested that clear, specialty-specific guidelines could facilitate triage and diagnosis without a mandatory physical examination³². Previous studies indicate that such guidelines help outline best practices for VC implementation³³, promote appropriate use,

address medicolegal concerns³⁴, and mitigate overreliance³⁵. While patient privacy is commonly discussed, this study underscores the importance of HCP privacy, suggesting that guidelines should address personal device use and the recording of VC to prevent privacy intrusions.

Additionally, establishing initial trust and agreed-upon healthcare plans can enhance provider and patient expectations³².

From Screen to Skill: Fostering Effectiveness, Sustainability, and Ethical Integrity in Virtual Care Training

Participants reported limited VC training, necessitating structured and regular programs to address frequent staff turnover. Comprehensive training—from technical and clinical to ethical and medicolegal—was viewed as an important factor in supporting sustainable VC adoption^{36, 22}. Previous studies further suggest that to support the delivery of seamless, high-quality and safe healthcare, training programs should incorporate safety incident mitigation³⁰. Participants preferred an interactive approach and peer learning to simulate real-world practice, while other studies support continuous professional development programs and self-paced modules to improve skills and confidence²³. Adopting internationally recognized standards, including credentialing for practitioners, has also been highlighted in the literature as a potential factor for more comprehensive VC in the future³⁷.

Strengths and Limitations of the Study

This study provides valuable insights into VC adoption in a resource-constrained healthcare facility. Alongside the emerging advancements of VC in the literature, this study may inform virtual care strategies in comparable health-system environments. The findings are most applicable to similar urban, public hospital settings and should be interpreted within this context.

The first author's positionality as a public health practitioner and prior involvement in the public healthcare system may have influenced the interpretation. While reflexivity strategies were employed throughout the research process, some degree of interpretive influence may not be entirely excluded.

Future research should explore the long-term sustainability of VC, patient-centered research approaches and the relative cost of a course of treatment for VC versus in-person care, particularly in diverse healthcare environments.

CONCLUSION

This study highlights the complexity of VC adoption within a public tertiary hospital, revealing varied levels of engagement shaped by the interplay of technological, organizational, clinical, and policy-related factors. While significant barriers exist, the results show promising opportunities for targeted interventions, including better infrastructure, provider training, and clear guidelines to enhance VC integration. A coordinated effort involving the hospital leadership and HCPs is recommended to integrate VC effectively within the hospital services, complementing in-person care to provide quality and equitable healthcare delivery.

Conflict of interest

The authors declare that there is no conflict of interest. This study was self-funded.

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