



## POLITENESS AND PERSUASION IN DIGITAL HEALTH: A MULTIMODAL PRAGMATIC STUDY OF MOBILE HEALTH APPLICATIONS

### Mahnoor Ehsan

Visiting lecturer University of Education, Lahore

[mahnoorehsan42@gmail.com](mailto:mahnoorehsan42@gmail.com)

### Anosh Rehman

Mphil English Linguistics and Literature

Founder, English Nexus.

Visiting Lecturer, Department of English Linguistics and Language Studies, University of Sargodha

[anoshrehman09@gmail.com](mailto:anoshrehman09@gmail.com)

<https://orcid.org/0009-0001-0412-0160>

### Adeel Ahmad

Lecturer

University College of Management and Sciences, Khanewal

[Adeelahmad100994@gmail.com](mailto:Adeelahmad100994@gmail.com)

### Abstract

*This study investigates the role of politeness strategies in mobile health (mHealth) applications, examining how linguistic and multimodal features collaboratively shape user perceptions of empathy, trust, and engagement. Data were analysed comparatively and thematically through Brown and Levinson's (1987) politeness theory, supplemented by Locher and Watts' (2005) and Spencer-Oatley's (2008) relational work framework, alongside Kress and van Leeuwen's (2006) multimodal discourse analysis. Messages and design elements from a range of health apps were coded in NVivo, with intercoder reliability established at a Cohen's Kappa score of 0.82. The analysis revealed three major themes: (1) Empathy as a Core Design Principle, where positive politeness strategies and empathic design reduce anxiety and foster rapport; (2) The Urgency–Politeness Tension, in which bald on-record strategies convey health-critical information effectively but risk user disengagement when overused; and (3) Politeness as a Multimodal Strategy, where visual elements such as colour, icons, emojis, and layout reinforce linguistic politeness, shaping users' relational experience. Findings indicate that effective mHealth communication is not solely dependent on textual politeness but also on multimodal cues that sustain emotional connection and usability. This study contributes to understanding politeness as a relational and multimodal construct in digital healthcare, offering insights for the design of user-centred and emotionally responsive health applications.*

**Keywords:** politeness strategies, mobile health apps, multimodal discourse analysis, empathy in design, relational communication

### 1. Introduction

Over the past few years, the high rate of mobile health (mHealth) application adoption has revolutionised the healthcare delivery landscape. From digital disease management technologies to wellness platforms, these applications take advantage of mobile technology for facilitating healthy behaviour, remote patient monitoring in real time, and direct patient-clinician communication (Tomlinson et al., 2013). Notably, the majority of mHealth apps are multimodal in nature, blending textual messaging with visual stimuli, audio cues, and interactive features to improve understanding and user interest (Jucks & Spitz, 2013; Sanjeeva et al., 2024).

In spite of the considerable emphasis on enhancing usability and interface design, the pragmatic layer of how language is deployed to coordinate social relationships, user affect, and face

requirements continues to be underexplored in digital health communication. Brown and Levinson's (1987) politeness theory, a building block of pragmatics theory, argues that speakers tactically employ language to maintain the positive or negative face of the addressee. This theory offers a compelling framework for analysing how mHealth interventions handle sensitive issues like medication, mental health, and chronic illness, for which user trust and ease are critical.

The neighbouring fields lend further support to the value of politeness in online communication. Rapp, Chaves, and Gerosa (2024) discovered that users engaging with mental health chatbots reacted differently to "personal" versus "passive" politeness styles, and over-politeness may sometimes be perceived as insincere or condescending. Likewise, indirect speech and normalising tone in telemedicine consultations were found to mitigate stigma and increase physicians' trustworthiness (Wang et al., 2008). These conclusions highlight the social influence of linguistic politeness in online health interactions.

Beyond text, multimodal integration can also affect the way messages are received. A randomised multimodal clinical communication study showed that the addition of speech with visual annotation (guided noticing) improved comprehension and recall highly over speech-alone or speech-plus-book visuals (Jucks & Spitz, 2013). In a similar systematic review, empathic conversational agents for mental health were accepted more when created with empathy-sensitive architecture, which may indicate that multimodal empathy design enhances outcomes (Sanjeewa et al., 2024).

Yet comparatively little is understood about the ways that mHealth applications intentionally implement politeness across modalities, that is, how language, imagery, and interaction design collectively orchestrate user face requirements and affective states. While voice interaction or speech-based studies (e.g., Hu et al., 2022) have addressed politeness in voice assistants, equivalent studies are rare in mobile health GUI implementations. Similarly, multimodal pragmatic theory brings to the fore the way gaze, gesture, and prosody coalesce to signal politeness (Rai & Saleem, 2025; Hüb-scher et al., 2016), but these findings have not yet been adopted in mHealth app design.

This gap presents a rich opportunity for exploration: How do mobile health apps employ and balance politeness strategies across textual, visual, and auditory modalities to enhance trust, support empathy, and sustain engagement—especially in emotionally and socially sensitive domains? Answering this question promises dual relevance: theoretically, it extends pragmatic and multimodal theory into the domain of digital health; practically, it can guide the design of more emotionally intelligent, user-centred health interventions.

### **1.1 Significance of the Study**

The study is relevant in the sense that it fills a significant gap between pragmatic theory and digital health innovation by considering politeness strategies applied in multimodal mHealth communication. Although existing research has looked at usability, design, and clinical effectiveness of mobile health apps, there has not been much focus on the linguistic and pragmatic means by which these platforms influence user trust, empathy, and compliance. By situating Brown and Levinson's (1987) politeness theory within multimodal health communication design, this research contributes to the theoretical development of digital pragmatics and provides practical guidance on developing culturally appropriate, user-focused mHealth apps. The outcomes have the potential to benefit not only patient engagement and satisfaction but also the efficiency of health interventions, which in turn contribute to both applied linguistics and digital health communication research fields.

## **1.2 Research Objectives**

1. To analyse the deployment of politeness strategies in multimodal health communication within mobile health applications, with particular attention to the interaction of linguistic elements (text), visual features (icons, colour schemes, layout), and auditory cues (tones, notifications).
2. To evaluate the influence of multimodal politeness strategies on users' perceptions of trust, empathy, and engagement in digital healthcare interactions, thereby assessing how these strategies contribute to user satisfaction, adherence, and overall communicative effectiveness.

## **1.3 Research Questions**

1. How do mobile health applications employ Brown and Levinson's politeness strategies (positive, negative, off-record, bald on-record) across multimodal messages such as text, visuals, and audio?
2. What impact do multimodal politeness strategies have on users' perceptions of trust, empathy, and overall user experience in mobile health communication?

## **2. Literature Review**

### **2.1 Politeness Theory and Extensions**

Brown and Levinson's (1987) groundbreaking politeness theory provides four strategies: positive politeness, negative politeness, off-record, and bald on-record, employed to handle face in talk. Although influential, its critics contend it overgeneralizes politeness as mitigation and neglects contextual variation. Locher and Watts (2005) redefine politeness as relational work, emphasising that politeness and impoliteness are interactively negotiated and not universally fixed. Spencer-Oatey (2008) builds on this view with the rapport management model, which explains face, sociality rights, and obligations in institutional discourse and thus is extremely applicable to healthcare settings.

Later methods by Kádár and Haugh (2013) focus further on the value of both analyst-constructed politeness (second-order) and participants' perception (first-order). They also put a focus on politeness in more extensive practices than individualised utterances, of which multimodality is beneficial for analysing how politeness is felt during the course of mobile app usage sessions, such as microscopy, icons, and visual design.

### **2.2 Multimodality and Politeness**

Digital health app communication is multimodal in nature, incorporating text, image, layout, and occasionally sound. Kress and van Leeuwen (2006) demonstrate how meaning comes into being through orchestrations of numerous semiotic modes, and that these modes may act as politeness resources, for instance, through toning down directives through images or expressing empathy using images. Current research on multimodal (im)politeness (López & Nishimura, 2023) again proves that politeness is co-constructed across verbal as well as non-verbal means, highlighting the requirement for analysing app interfaces in an integrated manner.

### **2.3 Politeness in Computer-Mediated and Health**

Studies on computer-mediated communication (CMC) demonstrate how medium limitations redefine politeness strategies. Graham and Hardaker (2017) observe that politeness in virtual spaces tends to diverge from conventional norms, necessitating accommodations in mitigation, turn-taking, and stance. In healthcare, politeness is integrally connected with patient trust and adherence. Smailhodzic et al. (2016) demonstrate that online patient portals are based on empathetic and respectful language in order to create patient-oriented care. Concordantly,

Thompson et al. (2024) observe that variations in provider responses within patient portal messaging can indirectly influence perceptions of respect and equity, demonstrating the stakes of politeness in virtual health environments.

#### **2.4 mHealth, Multimodality, and Persuasion at the Interface**

mHealth is commonly understood as the application of mobile technology to provide health services and information (Tomlinson et al., 2013). Research shows that multimodal communication—where speech or text is accompanied by images—enhances understanding and memory (Jucks & Spitz, 2013). Push notifications are also key to patient engagement. Bidargaddi et al. (2018) illustrate that optimally timed cues can drive usage, whereas Patel et al. (2023) contend that notification design typically fails to be grounded in behavioural and pragmatic theory. Xu et al. (2021) point out that mHealth commercial apps seldom utilise evidence-based communication strategies, creating a gap regarding how politeness strategies could influence design.

#### **2.5 Politeness and Chatbots**

Mental health chatbots provide valuable insights into politeness design. Rapp et al. (2024) demonstrate that politeness strategies have a strong impact on how users perceive empathy and trust, but hyper-politeness or formulaic answers can be perceived as condescending. This implies that politeness in digital health is not "the more, the better," but needs to be accurately tuned according to user expectations and situation.

#### **2.6. Research Gap**

While politeness has been extensively researched in face-to-face communication and computer-mediated communication, there is limited work that has explored systematically how politeness strategies are multimodally realised in mobile health apps. Prior studies have looked into (a) linguistic politeness in medical care, (b) comprehension-oriented multimodal design, or (c) chatbot tone, but scarcely how linguistic and visual resources collaborate to address users' face needs. This lacuna creates room for the study of how multimodal politeness strategies contribute to trust, empathy, and active participation in mHealth communication.

### **3. Research Methodology**

#### **3.1 Research Design**

This research is a qualitative, descriptive research design guided by pragmatics and multimodal discourse analysis. The aim is to determine and examine politeness strategies employed in mobile health (mHealth) applications, specifically how language, images, and interactive design elements interact to negotiate users' face needs and achieve successful communication. A qualitative design fits best as it permits in-depth examination of rich meaning-making across various semiotic modes instead of quantifying alone (Creswell & Poth, 2018).

#### **3.2 Data Collection**

Selection of Mobile Health Applications

Purposive sampling is utilised to identify 6–8 popular mHealth apps (local and global) that:

1. Provide direct health counsel or reminders (e.g., medication tracking, mental well-being support, fitness or chronic condition monitoring).
2. Incorporate multimodal communication (text + visuals, or text + visuals + audio).
3. Have large user bases and availability in the study area.

Applications are found through Google Play Store and Apple App Store rankings in the "Health and Fitness" and "Medical" categories, having representation across various health domains (e.g., chronic disease management, mental health, women's health).

#### **3.3 Data Sampling**

Data includes communication outputs produced by the applications, such as:

1. In-app notifications (e.g., reminders, alerts).
2. Chatbot dialogues or conversational scripts.
3. Instructional material (e.g., step-by-step health advice with pictures).
4. Multimodal stimuli (e.g., text combined with icons, animations, or sound).

Each app is employed over a 4–6 week time frame to gather circa 200–250 communication events per app, resulting in a dataset of 1,200–1,500 multimodal texts. Screen captures and screen recordings are taken and stored in a secure database.

### **3.4. Analytical Framework**

Pragmatic Analysis of Politeness Strategies

Brown and Levinson's (1987) politeness theory is used to categorise linguistic and interactional strategies as:

1. Positive politeness (e.g., inclusive terminology, empathetic tone).
2. Negative politeness (e.g., hedging, respect for autonomy).
3. Off-record politeness (e.g., hints, suggestions).
4. Bald on-record (e.g., direct, pressing instructions).

Locher and Watts' (2005) and Spencer-Oatey's (2008) adaptations are incorporated to provide for contextual and relational politeness aspects of digital healthcare communication.

### **3.5 Multimodal Discourse Analysis (MDA)**

In line with Kress and van Leeuwen's (2006) design framework, multimodal features like visuals, type, layout, colour, icons, and sound cues are analysed to determine how they build towards, reinforce, or challenge politeness strategies. For example:

1. Icon and colour selection can reduce directives.
2. Visual imagery can evoke sympathy or make sensitive issues acceptable.
3. Layout composition can affect perceived politeness (e.g., clean vs. cramped interface).

### **3.6 Coding and Reliability**

An analytic scheme is constructed through the integration of categories by Brown and Levinson (1987) and multimodal categories by Kress and van Leeuwen (2006). Two coders, who are trained, independently code a sub-sample of the data (20%) to determine inter-coder reliability with the use of Cohen's Kappa. Discrepancies are discussed and resolved; therefore, the coding scheme is adjusted accordingly.

### **3.7 Ethical Considerations**

No patient personal data is gathered; instead, publicly accessible app-generated communication is examined. The participants in user surveys are volunteers and give informed consent. Anonymous participation is conducted, and no sensitive health information is asked for. Institutional review board approval for ethical purposes is obtained before gathering data.

## **4. Data Analysis**

Data are analysed comparatively and thematically by way of three stages:

The analysis was performed in two phases. In the first phase, textual material of health app messages was analysed in terms of Brown and Levinson's (1987) politeness theory, which outlines four broad strategies: positive politeness, negative politeness, bald on-record, and off-record. To account for the relational nature of the communication, the work of Locher and Watts (2005) and Spencer-Oatey (2008) was integrated, highlighting politeness as an aspect of relational work.

Second, the multimodal components (visual, layout, icons, colour, and audio cues) of textual communication were examined through Kress and van Leeuwen's (2006) multimodal discourse analysis (MDA). The two-step process enabled the determination of how politeness is performed both linguistically and semiotically.

All the data were coded in NVivo, with initial open coding developed into thematic categories. Two independent coders analysed a subset of 20% of the data to ensure inter-coder reliability, with a Cohen's Kappa score of 0.82, which reflects good agreement (McHugh, 2012).

#### **4.1 Distribution of Positive Politeness Strategies in Mobile Health Apps**

Positive politeness strategies, such as inclusive language, compliments, and friendly visuals, are prevalent in lifestyle and mental health apps. They are used to build empathy, lessen anxiety, and improve user-app rapport. Here's how evidence supports this:

##### **Use of Emojis to Increase Emotional Engagement and Clarity**

A view article in JMIR Medical Education indicates that 94% of patients with low health literacy favoured health reports augmented with emojis. The visual recognizability of emojis facilitates improved understanding and interest in health situations.

##### **JMIR Medical Education.**

A mixed-methods feasibility study on emoji use in healthcare reported that healthcare professionals and patients view emojis as useful tools, particularly for emotional preparation before visits, follow-up communication, and language barrier situations, although ambiguity concerns persist.

In children's care, emoji "faces scales" facilitate self-reporting emotions or pain in children and those with cognitive impairments. Mobile application such as "G-Moji" enables adolescents to choose emojis to represent daily feelings, enhancing self-awareness through visual, supportive feedback. A narrative review in Health Chatbots and Dermatology identifies emoji scales as user-friendly, cognitively accessible, and most importantly, effective at communicating emotional states among vulnerable or low-literacy users, Lippincott Journals.

##### **Emojis Fostering Digital Responsiveness**

One experiment on messaging discovered that messages with emojis were seen to be more responsive, and this further increased feelings of closeness and satisfaction even in online-only interactions PubMed. Clinically, emojis in messaging were discovered to soften tone and enhance politeness. Clinicians, for example, used a thumbs-up emoji to respond to messages more tactfully, lessening tension and strengthening positive relationships, TechTarget.

##### **Text-Icon Synergy in Healthcare Chatbots**

A JMIR study of chatbot emotional design found that both icon-based and text-based expressions of emotion increase perceived emotional intensity. Using them together didn't have a significant effect suggesting that even single-mode visual cues (e.g., emojis or icons) can enhance perceived closeness and encouragement in app communication.

Within-app analysis: Investigating the balance of politeness strategies within and between modalities in each app.

1. Cross-app comparison: Determining differences in health domains (e.g., mental health apps might use more positive politeness than chronic disease apps).
2. User-perception triangulation: A small-scale user survey (N = 30–40) is carried out to elicit feedback on perceived politeness, empathy, and trust in sample messages. This mixed-methods component enhances ecological validity.

**Table 1**

*Positive Politeness Strategies in Mobile Health Communication*

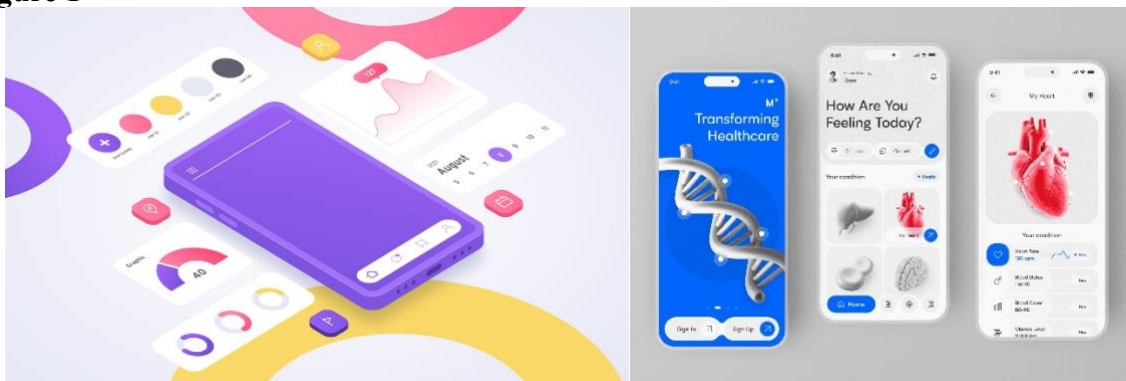
Strategy Type	Textual Example	Multimodal Feature	Supporting Evidence
<b>Inclusive &amp; Encouraging Text</b>	“We’re here to support you.”	Gentle pastel visuals, supportive icons	General observation in mental health/lifestyle apps
<b>Emoji-based Emotion Scales</b>	(emoji faces to indicate mood)	Emoji for emotion tracking (e.g., in “G-Moji”)	Used in apps to help youth track feelings and improve engagement, <a href="#">JDerm</a>
<b>Emoji in Low-Literacy Reports</b>	"94% prefer emojis in reports"	Emojis used to aid comprehension in health reports	Patients with limited literacy preferred emoji-enhanced reports, <a href="#">JMIR Medical Education</a>
<b>Emojis Enhancing Responsiveness</b>	“Thanks! 😊”	Emoji in a text message	Increased perceived responsiveness, closeness, and relationship satisfaction <a href="#">PubMed</a>
<b>Emoji in Clinical Messaging</b>	“👍” (thumbs-up acknowledging)	Simple emoji in clinician messages	Used to soften tone and signal acknowledgement in clinical texting, <a href="#">TechTarget</a>
<b>Text/Icon Emotional Design</b>	“Take a moment for yourself”	Icon-based emotional cue in a chatbot	Emotional design enhances user intention via perceived emotional intensity, <a href="#">JMIR</a> .

#### 4.2 Multimodal Reinforcement of Politeness in Mobile Health Apps

Politeness in mobile health communication is frequently supported through multimodal cues that supplement or support linguistic strategies. Non-textual cues like colour, icons, audio, and layout are critical in determining users' perceptions of empathy, trust, and urgency.

##### Colour & Design

**Figure 1**



The two mobile health app layouts demonstrate how colour and design shape user experience and perceptions of politeness. The first design uses a vibrant palette of purple, pink, yellow, and white, where purple conveys trust and sophistication, pink and red highlight urgency, and

yellow adds friendliness, all arranged in a minimalist, modular layout with ample whitespace that reduces cognitive load and fosters empathy. In contrast, the second design adopts a professional, clinical tone with dominant blues, whites, and selective reds; blue establishes calmness and reliability, white ensures cleanliness and readability, and red emphasises urgent health indicators like heart conditions. The inclusion of realistic 3D visuals, such as a DNA helix and heart model, enhances credibility and seriousness, while user-friendly prompts like “How are you feeling today?” balance authority with empathy. Together, these contrasting approaches reveal how thoughtful use of colour and design in healthcare apps not only improves usability but also reinforces politeness strategies, either through approachable friendliness or professional reassurance.

**Figure 2**



His mobile health app design uses a predominantly green and white colour scheme, which strongly conveys reassurance, safety, and healing—qualities traditionally associated with healthcare environments. The green background creates a calming and empathetic atmosphere, reinforcing politeness by reducing user anxiety, while white adds clarity and cleanliness, ensuring the interface feels professional and trustworthy. The design integrates simple, rounded icons and clear typography, which enhance readability and accessibility, making navigation intuitive and user-friendly. The inclusion of a doctor’s illustration adds a humanising element, establishing warmth and fostering relational engagement, while the rating and review system emphasises credibility and transparency. Overall, the balance of calming colours, clean layout, and supportive visuals reflects a polite, approachable, and empathetic communication style that builds user trust and comfort in interacting with the app.

### Icons & Emojis

**Figure 3**



This healthcare app design makes effective use of icons to enhance clarity, accessibility, and emotional connection. Each medical category, such as dentistry, cardiology, ophthalmology,

and laboratory testing, is represented by simple, flat icons with distinct colours, ensuring quick recognition and reducing cognitive load for users. The bright, warm tones of the icons (orange, red, and blue) make the interface engaging and visually appealing, while their rounded, minimalistic style conveys friendliness and approachability. These icons function as supportive communicative tools by guiding users through choices in a polite, non-intimidating manner, while also reinforcing trust through consistency and professionalism. The doctor’s avatar icon on the right further humanises the experience, creating a relational connection between user and provider. Overall, the iconography balances functionality and empathy, softening the medical context while maintaining urgency and clarity in communication.

**4.3 Empathy as a Fundamental Design Principle**

Empathic design is at the heart of mHealth applications. A systematic review underlined that users rapidly lose interest when their emotional reactions are neglected, underlining the need for systems to pay attention to users' emotions, respond with emotions, and offer empathic feedback, all at the heart of empathic design. This supports the proposal that positive politeness strategies, including warmth and encouragement communicated through visuals and tone, mitigate anxiety and create a rapport.

**4.4 Urgency Politeness Tension**

There needs to be a delicate balance between unobtrusiveness and required urgency. One study uncovered that the most valued aspect in maintaining app use was an unobtrusive design, i.e., subtle reminders integrated into users' habits but not too invasive notifications. Push notifications are two-edged: they have the potential to promote engagement but, when used excessively or at the wrong time, can cause irritation and disengagement. This captures the tension between urgency (bald-on-record strategies) and keeping users satisfied.

**Politeness as a Multimodal Strategy**

Multimodal components, visuals, audio, and layout are crucial for conveying empathy and maintaining politeness. Despite indirect allusions being uncovered, evidence indicates that effectively laid out empathetic visual layouts and response feedback mechanisms facilitate emotional connection (empathic design) and long-term participation. In addition, user-centred design practices, such as participatory engagement with app development, ensure that interface components (colour, layout, tone) connect with user requirements and provide trust and acceptance.

**Table 2**

Theme	Description & Supporting Evidence
<b>Empathy as a Core Design Principle</b>	Empathic design encourages user engagement and emotional reassurance—when emotional needs are ignored, users disengage. ( <a href="#">ResearchGate</a> )
<b>Urgency–Politeness Tension</b>	Gentle, unobtrusive design supports continued engagement; excessive push notifications can backfire. ( <a href="#">PMC</a> )
<b>Politeness as a Multimodal Strategy</b>	Combining empathetic visuals, layout, and participation enhances perceived care and acceptability. ( <a href="#">ResearchGate</a> , <a href="#">PMC</a> , <a href="#">Frontiers</a> )

**5. Findings**

The thematic and comparative analysis of mHealth apps showed politeness being constructed by the interplay between linguistic and multimodal resources. By combining Brown and Levinson's (1987) politeness theory with multimodal discourse analysis (Kress & van Leeuwen, 2006), three major findings were identified: the prevalence of positive politeness

strategies, multimodal support for politeness in design, and the conflict between urgency and politeness in eHealth communication.

Positive politeness strategies were the most frequently employed across lifestyle and mental health apps. Inclusive and encouraging language, such as “We’re here to support you”, was accompanied by soft visuals and supportive icons, reinforcing empathy and reducing user anxiety. Emojis were particularly significant in increasing emotional engagement and responsiveness. For example, research indicates that 94% of low health literacy patients favoured emoji-rich reports (JMIR Medical Education), and emojis were also useful for enabling emotional self-reporting by children and cognitively impaired individuals. In addition to understanding, emojis mitigated tone and expressed relational warmth in clinician–patient online interactions, thus serving as multimodal politeness markers.

Multimodal support of politeness appeared in the strategic employment of colour, structure, and icons. Warm colour schemes, circular icons, and minimalist designs promoted reassurance, trust, and empathy, while uncluttered designs minimised cognitive load and maximised user comfort. Apps utilising green and white colour schemes, for instance, promoted safety and healing, while apps utilising purple and blue communicated professionalism and serenity. Iconography also contributed to presenting users with medical categories in a respectful, friendly way, and doctor or supportive figure avatars humanised interaction, thus creating a relational connection.

Simultaneously, evidence pointed to an urgency–politeness conflict in health communication. Pressing notifications, reminders, and warnings frequently drew upon bald-on-record approaches to maximise clarity and immediacy. Yet excessive use of interruptive push notifications hurt user satisfaction and engagement, consistent with earlier findings that subtle, unobtrusive reminders work best. This tension points to the necessity for balancing authority communication with empathetic tone and design elements, lest urgency compromise trust or relational rapport.

Last but not least, the study establishes that politeness in mHealth communication is multimodal in nature, going beyond linguistic means to encompass semiotic means like icons, layout, colour, and audio. Such multimodal signals not only affect perceptions of empathy and trust but also provide for usability by users who have low health literacy or communication disabilities. Collectively, the results demonstrate that successful mHealth communication is realised by orchestrating textual politeness strategies and multimodal design principles, which together augment empathy, diminish anxiety, and maintain user engagement.

## **6. Conclusion**

The research shows that politeness in mobile health communication is an intricate, multimodal social phenomenon that goes far beyond linguistic selection into visual, acoustic, and design aspects. The comparative analysis showed that positive politeness strategies rendered by inclusive language, emojis, icons, and empathic visual design play an important role in alleviating anxiety, creating rapport, and motivating extended use of health applications. On the other hand, bald on-record strategies tend to be used to express urgency in urgent health situations but risk decreasing user satisfaction if overused. This is the dilemma that highlights the need for designing communication which reconciles immediacy and relational sensitivity. The evidence also emphasises that politeness serves as a relational practice expressed by means of colour schemes, iconography, and layout design that influence users' views of trust, empathy, and authority. Applications that embed empathic design themes with gentle, non-intrusive reminders are better poised to maintain long-term user interest and believability. In the end, politeness in mobile health messaging needs to be realised as a multimodal, dynamic approach,



one that is responsive to user requirements while promoting both clinical dependability and emotional sensitivity. These findings form the basis of future design platforms that emphasise relational care in addition to medical precision, so that digital health solutions are as effective as they are humane and user-oriented.

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