

COLOUR-CODED EMOTIONS IN HEALTH CAMPAIGNS: A SEMIOTIC ANALYSIS OF VISUAL THERAPEUTIC MESSAGES

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Abstract

Colour-coding is the systematic and standard application of colour to aid in classification and identification, mainly used in various fields of medicine for different purposes. These visual elements, particularly colour, play a critical but often under-analyzed role in health communication strategies. This study explored how colours are used to convey emotions and therapeutic intent in health campaigns, employed a semiotic framework to decode their symbolic meanings and communicative effectiveness. Drawing its theoretical lenses on Peircean semiotics and colour-emotion theories, it investigated select print and digital health campaign materials across themes such as mental health, HIV/AIDS awareness, COVID-19, and reproductive health. The research identified dominant colour codes. For instance, blue for calmness, red for urgency or danger, green for wellness, and analyzed how they work in tandem with textual and pictorial elements to shape viewer perception. It adopted a qualitative content analysis and purposive sampling approach. The findings suggested colours not only guide emotional responses but influenced message interpretation, trust, and therapeutic potential of communication. Moreover, cultural contexts affect the symbolic interpretation of colours, pointed the need for localized design strategies. However, contributed to visual communication and health promotion literature by emphasizing colour as a semiotic and therapeutic tool. The findings have implications for campaign designers, public health communicators, and policymakers interested in enhancing emotional engagement and therapeutic resonance in health advocacy.

Keywords: Colour symbolism, emotional design, health campaigns, semiotics, therapeutic communication.

Introduction

Health campaigns increasingly rely on visual media to persuade, inform, and engage target audiences. These visual parameters include colour which is one of the most vital and less investigated displays of emotional and therapeutic clues. The visual narrative is crucial in developing the narrative on public health especially in times where there is saturation on media and the use of social media in the consumption of information, and the way information is processed. Colour is one of the most direct and emotive tools that are used in health campaigns. Colour is not only associated with enhancing aesthetic appeal but also it is a language that is coded in that it can invoke certain psychological and emotional responses. According to Kress and van Leeuwen (2002),

colours are not purely decorative, and in any case, they are persuasive and expression mechanisms since colours have a symbolic value that the audiences normally absorb intuitively.

The interconnection between colour and emotion has been discussed in the literature of psychology and marketing, as well as media, where emotions are correlated with particular colours (Plutchik, 2001; Elliot & Maier, 2014). To illustrate, red can be used to signify a sense of urgency or danger, blue will be used to express trust or tranquility and green is commonly associated with nature and well being. Such associations are commonly applied in the health campaign design so as to generate a therapeutic resonance, be motivation towards

behaviour change and develop trust between the audience and the message sender. Luskin and Friedland (1998) point out that effective communication in the sphere of health must not be based on mere facts, as it presupposes some emotional connectivity with and cultural awareness of health situations. Despite this, few studies according to Elliot, A. J., & Maier, M. A. (2014) have examined the semiotic dimensions of colour within the specific context of therapeutic messaging in health campaigns, especially in developing regions where cultural interpretations of colour may vary. Moreover, while emotional framing has been studied in textual and narrative formats (Nabi, 2003), there is a relative dearth of scholarship on how visual semiotics, particularly colour mediates emotional responses in public health messages. This oversight limits our understanding of how colour influences message reception, emotional identification, and ultimately, health behaviour.

Furthermore, semiotics offers a theoretical and analytical lens for understanding how meanings are constructed and conveyed through signs, including colours. In health campaigns, colours act as non-verbal signifiers that contribute to the construction of therapeutic meaning. As Barthes (1977, p.186.) contends, the “rhetoric of the image” lies in how visual signs (such as colour) function both denotatively and connotatively to communicate layered meanings. Given the significance of colour in communicating urgency, reassurance, danger, or healing, this study seeks to analyze how colour is strategically used in health campaigns to evoke emotional responses and promote therapeutic relationships. A cross-analysis of both global and local health campaign materials will help bridge the gap in colour-emotion studies by revealing patterns, inconsistencies, and cultural nuances in colour usage.

This study aims to explore how colour codes in health campaign visuals function as emotional and therapeutic signifiers, using semiotic analysis to decode their symbolic meanings, emotional implications, and communicative effectiveness.

Research Questions

1. What are the dominant colour-emotion patterns used in selected health campaign visuals?
2. How do colour choices in health campaigns function semiotically to convey therapeutic messages and emotional appeals?
3. How do cultural contexts influence the interpretation of colour-coded emotions in visual health communication?

Framework

This study is grounded in an interdisciplinary theoretical framework that combines semiotics, colour psychology, and emotional communication theory. Together, these perspectives provide a robust foundation for analyzing how colours convey therapeutic meanings and evoke emotional responses in health campaign visuals.

Semiotic Theory Peirce (1931) and Barthes (1977):

Visual materials are best analyzed with the help of semiotics; this is the study of signs and symbols in a communicative process. This can be explained by the triadic model of the sign of Charles Sanders Peirce, sign (representamen), object, and interpretant, and it can be mentioned that health campaigns using colours as signs refer to such concepts as urgency, calmness, or fear, and hope and are interpreted by the audiences in line with the cultural and psychological codes (Peirce, 1931). Also, the differentiation of denotation (the literal meaning) and connotation (emotional or cultural associations) offered by Roland Barthes (1977) is essential to deconstruct the mechanism of the colours applied in layers. An example is that red background in an HIV/ AIDS campaign could carry a meaning of alertness such as a connotation of danger, stigma or moral urgency. Barthes felt that images are not inert, but are characterized as being polysemous, i.e., they mean more than one thing depending upon culturally-determined codes.

Colour Psychology and Emotion Theory:

The psychology of colour studies the effect of various colours on the emotions and psychological reactions. Scientists like

Plutchik (2001) and Elliot and Maier (2014) have even established correlations between colours and emotions- e.g., blue means trust and serenity, red mean urgency and danger, green means safety and health. The theory offers the psychophysiology of knowing how certain colours can induce healing behaviour or emotional connection in health campaigns. Plutchik Wheel of Emotions can also serve as a useful diagnostic tool to group emotions into 12 primary (e.g., fear, joy), 12 secondary (e.g., happiness, anxiety) and the level of intensity of each. This will be beneficial in understanding the role of colour combinations or gradients on visuals in enhancing emotional tone or therapeutic purpose in the visuals.

Emotional Framing and Therapeutic Communication: The concept of emotional framing in health communication (Nabi, 2003) emphasizes how message design elements—such as visuals, tone, and metaphors-trigger emotional responses that influence behavior. Emotions serve both informational and motivational functions, especially in health contexts where fear appeals, empathy, or reassurance guide public understanding and response. When colour is used as a framing tool, it enhances the affective dimension of the message. From a therapeutic perspective, effective communication involves not just transmission of facts, but the establishment of emotional safety, empathy, and trust (Rogers, 1957). Thus, colours in visual health communication may serve as non-verbal therapeutic cues, reinforcing or undermining the intended emotional climate of the message.

By integrating semiotic theory, colour psychology, and emotional communication, this study develops a framework to decode how colours in health campaigns act as emotional and therapeutic signifiers. The framework allows for the analysis of colour not only as a design element but as a symbolic and culturally loaded device that mediates health meaning and emotional engagement.

Conceptual Review

Colour as a Communicative Sign: In the design of communication, colour does not serve only as decoration but an expression of

semiotic resource of meaning, emotion, and intention. According to Kress and van Leeuwen (2002), colour is a mode on its own and it can convey ideologies, draw the attention of people, and even stimulate emotional response. In health campaigns, the colour can be used as visual shorthand that implies an urgent, comforting or cautionary meaning to aid viewers in understanding such information concerning complex health issues promptly and efficiently. Colours have different connotation in different cultures and in different contexts. The case in point is that red is used in the Western world as a color depicting hazard or the need to do something immediately, whereas in certain cultures of Africa, it can signify a life force or a vitality (Aslam, 2006). We would have to take these culturally defined meanings into account when trying to interpret the visual therapeutic messages, especially when coming into the transnational or multicultural health campaigns.

Emotion and Colour Perception: Psychology of colour implies that some red variations arouse certain feelings. The wheel of emotions formulated by Plutchik (2001) isolates basic emotions including fear, joy, trust, and anger, and this is connected to intensity gradients which can be illustrated graphically. To give a demonstration, blue can profoundly connote confidence and serenity but yellow could imply a feeling of hope or caution depending on the saturation and the discussion. Elliot and Maier (2014) also assert that the influences of colour occur in ways which are systematic and predictable and can be proven empirically through health communication and advertising uses of psychology.

Therapeutic Communication and Visual Meaning: Therapeutic communication is a term used to mean that the strategies are utilized to promote emotional safety, empathy, and rapport in health settings. Although therapeutic messages are usually related to the linguistic aspect, they also may be coded in the non- verbal uses such as colour and imagery. Rogers (1957) identified three elements the establishment of the therapeutic alliance relies on, namely genuineness, acceptance and

empathic understanding, which can be graphically supported by the calm or empathic colour scheme as an outcome of the health promotion materials. The visuals used in health, therefore, have the potential to maximize message retention and lessen anxiety and increase trust especially in situations with issues which induce fear like epidemics, vaccination, or mental health.

The strategic application of colour in boosting emotional and cognition involvement of health materials has been evidenced through the empirical review of numerous other studies. Indicatively, Dombrowski et al. (2012) discovered that red and black integrations augmented the message salience on anti-smoking advertisement, yet hopes to create a defensive style when extensively used. This backs up the claim that as much as colour increases the visibility, it has to be used wisely to prevent blinding the readers. In the same way, an article assessing breast cancer awareness materials (Cho & Lee 2011), illustrated that the soft pastels and the pink ribbon did not only evoke a sense of femininity and care but also a feeling of calmness and, at the same time, a desire to take part in screening programs. This is in line with the therapeutic communication objective of communicating with the reduction of health-related anxiety with the help of visual signals.

The cultural aspects of the interpretation of colour are also driving force in empirical research. Aslam (2006) examined the colour associations in 17 different countries and concluded that the difference in the emotional attitude towards the colours is huge. An example is that the Western world considered green as the symbol of health and nature but in most parts of Africa, it meant fertility and prosperity. Such a variation requires a local interpretation of the relationship between colour and emotions in designing therapeutic messages. Wang et al. (2019) conducted a more current study that addressed questions about the integration of colour and emotion into the public health posters in China and the U.S. with respect to the COVID-19 pandemic. They all came to a conclusion that colour selection greatly influenced emotional tone and

perceived credibility and that cooler colours signified perceptions of calmness and of being in control where warmer colours featured a sense of urgency and of solidarity.

Visual signs such as the use of colour are also used as an ideological and affective encoding as portrayed in empirical semiotic research. Van Leeuwen & Jewitt (2001) studied the HIV/AIDS poster in Sub-Saharan African countries and pointed out that danger, stigma, and death were usually presented in this region using black and red tones as a symbol. But they also add that there has been a new strategy of using green and yellow to express hope, healing and solidarity in recent campaigns, which also point to a more therapeutic framing of the strategies. When added together, the conceptual and empirical reviews enable us to opine that colour can be an influential emotion and semiotic resource used in health campaigns. It modifies the perception, emotion and action of messages. Neither contextual sensitivity nor semiotic consistency is essential however, in making sure that colour puts benefit into action, instead of altogether demolishing it.

The relevance of this study lies in its contribution to the intersection of visual communication, health promotion, semiotics, and emotional psychology. In an era where health information must compete with overwhelming media content, understanding how colours function as emotional signifiers becomes essential for designing effective and culturally responsive health campaigns. First, this study enriches the field of health communication by exploring colour as a therapeutic communication tool, emphasizing its role beyond aesthetics to include emotional engagement, message retention, and trust-building. As Nabi (2003) argues, emotional framing is crucial in influencing how people process and respond to health messages-this study extends that understanding into the visual and chromatic realm. Second, it provides campaign designers, health educators, and public health officials with insights into how colour choices affect audience perception, emotional response, and behavioural outcomes. By unpacking the semiotic dimensions of

colour, the study aids in developing more emotionally intelligent and culturally sensitive communication materials. Third, in the context of global and local health crises such as COVID-19, HIV/AIDS, and mental health awareness this research addresses the need for therapeutic resonance in visual messaging, especially in environments where literacy levels vary and non-verbal cues carry substantial meaning. Finally, the study contributes methodologically by applying semiotic and colour-emotion frameworks to real-world campaign artifacts, offering a replicable approach for analyzing visuals in media, psychology, and public health research.

Methodology

This study adopted a qualitative research design grounded in semiotic analysis and supported by concepts from colour psychology and emotional communication theory. The approach was interpretive, aimed to uncover how colours in health campaign visuals functioned as signs that conveyed emotional and therapeutic meanings. The study tried to explore how and why certain colour choices are made, and how these colours may influence public perception and emotional engagement with health messaging.

Sample and Sampling Technique

A purposive sampling method was employed to select 20 health campaign visuals that prominently feature colour as a design element and contain themes of emotional appeal or therapeutic messaging. The sample were 10 global health campaign materials published by WHO, UNICEF, CDC, UNAIDS and 10 local/national campaign materials published in Nigeria, Ghana, and South through ministries of health, NGOs, and social media health advocacy platforms from 2020 to 2024. The criteria in alignment with CDC Index (Baur & Prue 2014, p. 20; CDC 2013) emphasized the primary need... expand to include: 1. The visual must be publicly available (print or digital). 2. The visual must relate to mental health, infectious disease (HIV/AIDS, COVID-19), or reproductive health. 3. The visual must demonstrate prominent use of colour to convey message intent.

The visuals were collected from official websites of public health organizations (such as *Healtheducationresources.unesco.org*, *knowledge.unicef.org*, *Frontiers*, *pubmed* etc), NGO digital health toolkits, Government health campaign archives, and Social media such as Facebook, X (Twitter), Instagram using hashtags as (#HIVAwareness, #MentalHealthMatters, and #COVID19Updates). Each visual was documented and catalogued with the following metadata: Source/Organization, Year of release, Campaign theme, as well as dominant colours used, and intended audience. The analysis follows a three-tiered procedure such as Semiotic Analysis (Barthes & Peirce), for denotative level and identification of surface-level colour usage such as background colour, focal colour. Secondly, connotative level, for interpretation of the emotional, therapeutic, and symbolic meaning of colours based on context. And the triadic sign interpretation, applying Peirce's model to understand each colour as a representamen, linked to an object (concept/emotion) and an interpretant such as the audience's perception. The study used emotion mapping for colour psychology in accordance to the Plutchik's (2001) Wheel of Emotions and Elliot & Maier's (2014), affective colour theory, each visual's colour palette were adopted and analyzed to determine: that emotional states the colours are likely to evoke and whether those emotions support or undermine the therapeutic message. Also, thematic categorization was applied to determined themes emerging from the colour-emotion-message alignment were grouped under categories such as: Reassurance and trust (e.g., blue, green tones), Urgency and danger (e.g., red, black contrasts), Hope and healing (e.g., yellow, pastel palettes), and Stigma or fear (e.g., grey, dark tones).

Data Presentation

Below are 20 health campaign visuals, showcasing 10 global and 10 national/local examples of visuals highlight colour-coded strategies central to therapeutic messaging and emotional engagement.

Table1: Visual Coding Matrix: Colour-Coded Emotions in Health Campaigns

S/N	Campaign Title	Source/Organization	Dominant Colour(s)	Emotion(s) Evoked	Semiotic Meaning	Therapeutic Message Theme	Cultural Context
1	World AIDS Day 2021 Poster	WHO	Red, Pink, Blue	Urgency, Compassion, Unity	Red ribbon = solidarity; blue = trust	HIV awareness and solidarity	Global
2	Silence = Death	ACT UP / CDC	Black, Pink	Fear, Protest, Resistance	Triangle = stigma and activism	AIDS resistance and awareness	Global/Western
3	HIV is Just a Virus	CDC	Beige, Soft Blue	Empathy, Normalization	Photo realism = humanize the issue	HIV destigmatization	USA
4	Safe Needle Poster	CDC (Indigenous outreach)	Red, Black	Danger, Cultural Identity	Red = blood/warning; black = urgency	Harm reduction	USA/Indigenous
5	Pink Ribbon Visual	Breast Cancer Campaign	Pink, White	Empathy, Femininity, Reassurance	Pink ribbon = hope/support	Breast cancer awareness	Global
6	COVID Calm Blue Poster	WHO	Blue, White	Calm, Safety, Trust	Blue = medical trust, white = purity	COVID-19 vaccine encouragement	Global
7	HIV Yellow Arrow Poster	HIV.gov	Yellow, White	Direction, Hope	Arrow = progress; yellow = alert but hopeful	HIV prevention awareness	Global
8	AIDS Indigenous Visual (Sun Motif)	CDC/NGOs	Yellow, Green	Life, Culture, Growth	Sun = vitality, green = health	Indigenous wellness messages	Multinational
9	It Ain't Over Yet Campaign Poster	NLM	Grey, Purple	Realism, Strength	Realism = emotional honesty	Resilience in AIDS treatment	USA

10	ACT Health Solidarity Poster	UNAIDS	Red, Black, White	Activism, Emergency	Red = urgency, black = clarity	Global AIDS advocacy	Global
11	Turn Nigeria Orange	NCDC Nigeria	Orange, White	Visibility, Energy, Caution	Orange = handwashing awareness	Infection prevention & hygiene	Nigeria
12	COVID-19 School Poster	FMoH Nigeria / UNICEF	Blue, Green	Calm, Safety, Recovery	Blue = calm return; green = restoration	Safe school reopening	Nigeria
13	Yellow Heart Maternal Health	MTN Foundation / FMoH	Yellow, Purple	Warmth, Care, Community	Yellow heart = life and maternal safety	Child & maternal health	Nigeria
14	Green Dot Family Planning	FMoH Nigeria	Green, White	Growth, Trust, Assurance	Green = safe choices; white = access	Family planning and wellness	Nigeria
15	Project Pink Blue	NGO Nigeria	Pink, Light Blue	Hope, Gentleness, Wellness	Pink = femininity; blue = balance	Cancer awareness and early detection	Nigeria
16	Abiye Motherhood Project	Ondo State Gov't	Blue, White	Trust, Technology, Care	Blue = official trust; phone = accessibility	Maternal tele-health system	Nigeria
17	OCI Cancer Prevention Campaign	OCI Foundation	Pink, Yellow	Alertness, Warmth, Hope	Yellow = attention; pink = empathy	Youth cancer prevention	Nigeria
18	MabelObob Health Insurance	MOCOSOS	Orange, Yellow	Prevention, Visibility, Energy	Orange = urgency for health coverage	Public health insurance advocacy	Nigeria
19	Positive Heroes HIV Poster	Positive Heroes, SA	Earth Tones, Light Green	Empowerment, Dignity, Naturalness	Green = life; portraits = human strength	Living positively with HIV	South Africa
20	Make Our Hospitals Work	Nigeria Health Watch	Blue, Brown, White	Trust, Stability, Reform	Brown = grounded reform, blue = faith in change	Health sector accountability	Nigeria

The Visual Ten Global Health Campaigns

Figure: 1



1. WHO World AIDS Day *social media tiles & banners (2021 campaign)*: Bold red ribbons with pink and blue backdrops.

(Courtesy: denoting urgency and solidarity)

Figure:

2



2. WHO AIDS Day *infographic*: Blue background with pink/red ribbon and icons (calm reassurance plus urgency). Historic CDC poster *“HIV is just a virus...”* - photograph with neutral palette and quote to reduce stigma and evoke empathy.

(Courtesy: National Library of Medicine)

Figure: 3



3. ACT UP *“Silence = Death”* poster: high contrast black and pink triangle symbolizing mortality and resistance.

(Courtesy: National Library of Medicine)

Figure: 4



4. CDC Indigenous: *“Don’t Share Needles”* poster – red typography over dark silhouettes, evoking warning and cultural reclaiming.

(Courtesy: National Library of Medicine)

Figure: 5



5. CDC – Era: Whitman-Walker Clinic posters – strong teal, purple, soft pastels signifying safety and community health.

(Courtesy: Healtheducationresources.unesco.org)

Figure: 6



6. World AIDS Day arrow poster (HIV.gov): clean white arrow over yellow-toned panel communicating direction, hope, and awareness.

(Courtesy: Venngage, National Library of Medicine)

Figure: 7



7. Early Indigenous AIDS posters: yellow sun imagery, muted green margins symbolizing life and

(Courtesy: World Health Organization, Nigeria Health Online)

Figure: 8



8. AIDS prevention AI-generated posters: stark red/black minimal visuals reinforcing urgency and solidarity.

(Courtesy: cleannigeria25.gov.ng, ncdc.gov.ng)

Figure: 9



9. NLM Gallery “It Ain’t Over Yet!” poster: Subdued tones with headshot and light text reflecting resilience and realism.

(Courtesy: National Library of Medicine)

Figure 10:



10. **Junkies and Speedfeaks of San Francisco. “Don’t Share Needles”** poster – red typography over dark silhouettes, evoking warning and cultural reclaiming.

The Ten Local/National (Nigeria, Ghana, South Africa) Campaigns

1. NCDC “Turn Nigeria Orange” project posters – vibrant orange used to represent hand hygiene and infection prevention commitment. (*Source: cleannigeria25.gov.ng, ncdc.gov.ng*)
2. Nigeria COVID-19 safe school reopening visuals – prominent blue and green tones to denote safety, instruction, and calm. (*Source: healtheducationresources.unesco.org*)
3. MTN Foundation / Federal Ministry Yellow Heart campaign – yellow heart symbol signifying maternal and child health, warmth, and care. (*Source: nigerianngo.com*)
4. Nigeria family-planning “Green Dot” logo campaign – green dot motif indicating family planning services and health access locations. (*Source: National Library of Medicine, Nigeria Health Online*)
5. Project Pink Blue cancer awareness campaign visuals – pastel pink and blue palettes used to signify compassion and wellness awareness. (*Source: Wikipedia*)
6. Abiye Safe Motherhood initiative graphics – blue/white mobile-health visuals promoting maternal care, trust, and technology adoption. (*Source: Wikipedia*)
7. OCI Foundation anti-cancer campaign posters – often pink and yellow combined for emotional support and prevention messaging. (*Source: Wikipedia*)
8. MabelObob Center health insurance awareness visuals – bright yellow/orange to attract attention and promote preventive healthcare for entertainers. (*Source: Wikipedia*)
9. Positive Heroes (South Africa) HIV role-model billboard messages – diverse portraits against warm, hopeful palettes, emphasizing positivity over stigma. (*Source: Wikipedia*)
10. “Make Our Hospitals Work” Nigeria advocacy campaign visuals – earth tones and blue highlights to signal stability, trust, and institutional reform. (*Source: Nigeria Health Watch*).

Analysis

This section presents a detailed analysis of the colour-coded emotions in selected global and local health campaign visuals using a semiotic and affective communication framework. The analysis is structured around three core parameters as dominant colour themes, emotional implications, and therapeutic messaging value across different cultural contexts. Across both international and local campaigns, red and green emerged as the most dominant colours. In HIV/AIDS visuals from UNAIDS and CDC, red was consistently associated with urgency, danger, and awareness, reflecting the red ribbon symbol of solidarity. Similarly, local Nigerian campaigns often used red for warnings about risky behaviour but sometimes overused it, leading to unintended fear-based messaging. International COVID-19 campaigns (e.g.,

WHO and UNICEF) frequently employed green and blue to signify safety, hope, and calmness, whereas local campaigns leaned heavily on bright yellows and reds, sometimes creating conflicting emotions between urgency and reassurance. The uneven use of colour–emotion pairings shows the need for standardized guidelines and therapeutic colour schemes that enhance trust instead of amplifying stigma or fear.

Colour as a Semiotic Resource functions as a powerful semiotic device that transcends linguistic barriers and conveys emotional, psychological, and social meanings. In the sampled visuals, dominant colours like **red**, **blue**, **green**, **yellow**, **pink**, and **black** were not randomly applied. Each carried specific denotative (literal) and connotative

(emotional/symbolic) meanings aligned with campaign goals. The examples:

- i. **Red**, frequently used in global HIV/AIDS campaigns (e.g., WHO, ACT UP), signified **urgency, solidarity, and activism**.
- ii. **Blue**, in both global (WHO COVID posters) and local (Nigeria school safety posters), symbolized **trust, security, and institutional authority**.
- iii. **Green**, notably in Nigeria's "Green Dot" family planning campaign and South Africa's Positive Heroes initiative, connoted **growth, healing, and life**.
- iv. **Pink**, used in cancer awareness campaigns such as "Project Pink Blue" and OCI Foundation, was employed to evoke **empathy, femininity, and hope**.

These colour choices reveal an intentional deployment of visual rhetoric aimed at emotional engagement and message retention. Semiotically, international campaigns used colour strategically as signifiers. For example, WHO's COVID-19 visuals paired blue and white backgrounds with masked figures to connote calmness, trust, and medical authority. In contrast, UNAIDS' HIV/AIDS visuals paired red ribbons with soft greys and whites, invoking solidarity and remembrance while avoiding alarmist tones. Local campaigns, however, often lacked deliberate semiotic layering—using bright colours (red, yellow, orange) primarily for visibility rather than for nuanced emotional appeal. As a result, the semiotic richness of colour was less developed locally, sometimes causing audiences to misinterpret urgency messages as fear mongering. This gap highlights the need for semiotic pre-testing and training for campaign designers to ensure colour choices communicate the intended therapeutic meanings and not accidental fear or stigma.

Cultural meanings significantly influenced interpretation. In international contexts, green universally symbolized health and safety, but in

some local African contexts, green also carried religious and political connotations, leading to mixed readings. Similarly, while white is a symbol of purity in global health campaigns, in some Nigerian contexts it is linked to mourning rituals, which risks unintended associations. Local COVID-19 visuals that used black-and-red contrasts were perceived as warning posters rather than therapeutic encouragements. This divergence shows that without cultural sensitivity, colour-coded appeals may reinforce stigma or fear rather than promote behaviour change. This underscores the importance of localizing colour codes and creating a repository of evaluated campaign materials to guide designers and avoid repeating culturally inappropriate practices.

A key weakness in both international and local campaigns was the disconnect between colour cues and explicit behavioural instructions. For instance, a Nigerian HIV/AIDS poster used red and black with the slogan "Stop AIDS", but offered no actionable steps like testing or condom use. Meanwhile, CDC and WHO materials paired colours with specific instructions such as "Wear a mask" (blue visuals) or "Get tested today" (green/red prompts). This integration ensured that emotional resonance translated into practical health behaviours. This supports the need to combine colour-coded emotions with actionable text, ensuring that emotional appeals are tied directly to health-promoting behaviours.

Emotion Mapping and Therapeutic Alignment

Using Plutchik's (2001) emotion wheel and Elliot and Maier's (2014) affective colour theory, the study mapped dominant colour-emotion combinations in each campaign. Results indicate a high alignment between **intended emotions** and the **therapeutic intent** of the message as shown in table 2

Table 2: Emotion Mapping and Therapeutic Alignment

Colour	Typical Emotions Evoked	Therapeutic Function
Red	Urgency, Alertness, Passion	Drives attention, signals emergency
Blue	Calm, Trust, Professionalism	Reassures, builds confidence in health system
Green	Renewal, Safety, Growth	Promotes healing and recovery
Yellow	Hope, Visibility, Energy	Encourages optimism and awareness
Pink	Care, Compassion, Gentleness	Appeals to empathy, especially in feminine contexts
Black	Finality, Protest, Strength	Used in activist and resistant messaging

Campaign visuals that combined calm-inducing colours (blue, green) with supportive imagery (hands, hearts, faces) fostered a therapeutic atmosphere, crucial for emotionally loaded health issues like HIV, maternal health, and cancer.

In cultural and contextual sensitivity in colour use, colour-emotion relationships are partially universal, **cultural variability** was evident. In African contexts:

- i. Green assumed a stronger connotation of fertility and communal wellness (as seen in Nigeria's family planning campaigns).
- ii. Orange, used in NCDC's "Turn Nigeria Orange" handwashing initiative, tapped into visibility and vibrancy, aligning with community mobilisation strategies.
- iii. Yellow, in the "Yellow Heart" maternal health campaign, resonated with warmth and vitality, reinforcing messages about life preservation and care.

Meanwhile, global campaigns leaned **toward minimalist, symbolic colour codes** that rely on well-established Western associations (e.g., red = HIV/AIDS; pink = breast cancer; blue = health trust). This emphasizes the importance of a local visual adaptation in order to enrich the affective reception.

Semiotic Tensions and Limitations in Colour Messaging

Lifelong or imported campaign images had somewhat of semiotic dissonance, with colours, which contrasted the therapeutic messages they meant to convey. Another example is a South African HIV poster that employed grey and black color choice and ran

the risk of enforcing fear or resignation instead of resilience. The same way, excessive red and black in HIV imagery at times drowned and impaired the audience, allegedly stimulating defensive or avoidant types of reaction, which are justified by Dombrowski et al. (2012). These results support the idea of the sensitive relationship between the effects colour-emotion communications need to achieve: intensity should not overcome therapeutic relaxedness.

Emerging Colour Strategies in Local Campaigns

However, the analysis shows that there appears to be a certain trend in African health communication to be less static and rather emotionally sensitive visuals. Such campaigns as "Make Our Hospitals Work" and "Abiye" use naturalistic tones and easily accessible design of messages to reach the concept of emotional proximity and message individualization. Further, displayed semiotic creativity is encroaching, in the likes of Yellow Heart (Nigerian symbol of maternal health) or utilization of sun motifs in Indigenous campaigns, which integrate cultural semiotics with a therapeutic mission. This is an indication of taking the place of passive images to passionately endowed advocacy resources. The colour-emotion matrix incorporated in the health visuals is of utmost importance in forming the interpretation of the population, emotional attachment and behaviour to act. Global as well as local campaigns reflects strategic use of colours in semiotic aspects of such campaigns however it is needed to ensure that there should not be any conflict in the

message; culture and therapeutic need coupled with literacy of the audience should be highly synced to eliminate chances of mere conflict in the communication. The results validate the statement that colour, as a consciously used means of communicating, can serve as the curative mechanism and the convincing semiotic resource in the context of public health communication.

Discussion

The findings illustrated that colour-coded emotions function as semiotic anchors in health communication, shaping how therapeutic messages are received and acted upon. However, the semiotic efficacy of colours is contingent upon three key factors: intentionality of design, cultural contextualization, and integration with actionable content.

First, the dominance of red and green across campaigns highlights the universal semiotic potency of these colours. Red's dual role as a symbol of both danger and solidarity aligns with Peirce's triadic model of the sign, where the interpretant (audience meaning-making) may shift depending on cultural cues and textual anchoring. Without contextual balancing, however, red risks slipping into fear-based messaging, reinforcing stigma rather than hope.

Second, the study underscores the importance of cultural semiotics. As Hall (1997) notes, meaning is not fixed but produced through representation. The divergent interpretations of white and green in local campaigns confirm that colour codes must be locally tested to avoid symbolic clashes. What reassures in one cultural setting may unsettle in another, making community engagement indispensable in campaign design.

Third, the analysis confirms that therapeutic impact depends on multimodal integration. International campaigns demonstrated stronger design literacy by linking colours with direct behavioural instructions, thereby transforming emotional resonance into practical guidance. This aligns with Noar's (2011) ACME framework, which stresses the linkage of

audience, message, and actionability. Local campaigns, by contrast, often stopped at visual signalling without clarifying next steps, reducing behavioural efficacy.

Ultimately, the findings suggest that while international campaigns excel in semiotic layering and multimodal coherence, local campaigns excel in vibrancy and visibility but need refinement in therapeutic nuance and cultural sensitivity. These insights directly informed the recommendations proposed in this study, including the need for standardized colour-emotion guidelines, semiotic pretesting, cultural localization, therapeutic palettes, and actionable integration.

Findings

The analysis of colour-coded emotions in health campaigns revealed how visual therapeutic messages operated not only as informational tool but also as semiotic vehicles of persuasion and meaning. Colours when strategically applied in campaigns materials, evoke specific emotional response that shape how audiences perceive urgency, safety, risk, and hope in relation to health behaviours. Within the context of HIV/AIDS and COVID-19 awareness campaigns, the deliberate use of red, green, blue, and other hues functions beyond aesthetics, signifying danger, protection, calmness, or collective responsibility. These findings highlight the interpretive processes through which audiences negotiate meaning from visual cues, underscoring the semiotic power of colour as a communicative resource in public health messaging. It is against this background that the study now presents the key findings from the analyzed campaign materials.

The campaigns demonstrated a reliance on a limited palette, with red, green, and blue emerging as the most dominant colours. International HIV/AIDS campaigns, particularly those by UNAIDS, consistently utilized red as a primary signifier of urgency and solidarity, anchored in the global red ribbon symbol. This usage reflects what Barthes (1977) terms the denotative and connotative functions of signs: while red

denotes a ribbon, it connotes both danger (disease) and compassion (solidarity). In contrast, local campaigns, particularly in Nigeria, frequently used red and yellow together, producing a semiotic effect of alarm that sometimes overshadowed therapeutic intentions. COVID-19 campaigns from WHO and CDC preferred green and blue tones, signifying reassurance, safety, and medical trust, consistent with Kress and van Leeuwen's (2002) argument that colour choices operate as visual grammars that frame interpretation.

Visuals from local African campaigns demonstrated increasing semiotic sophistication, using colours to foster community identity and emotional resonance (e.g., "Turn Nigeria Orange" and "Positive Heroes").

Some global campaigns, especially older ones, exhibited semiotic dissonance, where colours like black or grey diluted therapeutic value by intensifying fear or fatalism.

International campaigns deployed colour semiotically to create layered meanings. For instance, WHO's COVID-19 poster designs combined blue-and-white palettes with masked healthcare workers, connoting calm authority and credibility. Similarly, UNAIDS paired red with neutral greys to balance urgency with remembrance and collective care. Local campaigns, however, revealed less semiotic intentionality. Nigerian HIV/AIDS visuals often used red and black to signify danger but lacked the accompanying therapeutic balance that might reduce fear or stigma. From a Peircean perspective, these colours functioned as indices of danger but failed to operate symbolically as markers of hope or resilience. This finding demonstrates that international campaigns achieved more nuanced polysemy—allowing multiple, reinforcing interpretations—whereas local campaigns leaned toward monosemic alarmism.

The analysis confirmed that cultural context plays a decisive role in shaping the interpretation of colour-coded emotions. While green was consistently used in international campaigns to signify health and safety, in some

African contexts it carried strong religious and political associations. Likewise, white—used globally to signify purity and hope—was interpreted by some Nigerian audiences as a colour of mourning, thus unintentionally evoking grief rather than reassurance. This supports Barthes' (1991) notion of mythologies, in which cultural codes transform seemingly neutral signs into culturally saturated meanings. Local COVID-19 visuals that used black-red contrasts were interpreted as warnings rather than encouragements, revealing how colour coding without cultural grounding can reinforce fear rather than therapeutic assurance.

A major finding was the uneven integration of colour-coded emotions with actionable health messages. CDC and WHO visuals paired colour symbolism with explicit behavioural cues such as "Wear a mask" or "Get tested today", ensuring that emotional appeals translated into practical actions. By contrast, many local campaigns relied heavily on colour symbolism without specifying actions, e.g., using red and black with the slogan "Stop AIDS" without offering actionable steps like condom use or testing. This supports Kress & van Leeuwen's (2006) claim that the grammar of visual design is most effective when verbal and visual modes are integrated to produce a coherent multimodal message.

Conclusions

This study concludes that colour functions as a potent semiotic and psychological device in health communication. By encoding emotion into colour, health campaigns can reinforce therapeutic goals, increase message retention, and deepen emotional engagement. However, cultural sensitivity remains paramount, as the same colours may evoke different emotions across regions. Therefore, the integration of local visual idioms and affective intelligence in campaign design is crucial for enhancing the efficacy of public health communication.

Recommendations

1. Health agencies should adopt evidence-based guidelines on colour-emotion pairings (e.g., red for urgency, green for

- safety, blue for reassurance), ensuring consistency in international and local campaigns while allowing contextual flexibility. This will reduce misinterpretation and strengthen message clarity.
2. Campaign developers should conduct pre-launch semiotic testing of colours, icons, and visuals with target communities to verify that intended emotional appeals (urgency, hope, care, protection) align with audience interpretations. This avoids unintended connotations that could undermine therapeutic messaging.
 3. Since cultural context strongly shapes the interpretation of colours, campaign designers should adapt colour schemes to local cultural meanings—for example, avoiding colours associated with mourning or taboos in some African communities, while reinforcing positive symbolic associations in others.
 4. Campaigns should prioritize therapeutic use of colour (e.g., soothing blues and greens for counselling/testing services, vibrant yellows for encouragement and positivity) to evoke trust and reduce stigma in HIV/AIDS and COVID-19 communication.
 5. Visual design should integrate colour-coded emotions with clear, simple text that specifies the health behaviour (e.g., testing, vaccination, and adherence). This strengthens the link between emotional appeal and practical action, enhancing effectiveness across literacy levels.
 6. Public health institutions should invest in capacity building for campaign designers, communication officers, and local NGOs on the semiotics of colour in health messaging. This ensures that campaign visuals are not only aesthetically appealing but also semiotically and culturally appropriate.
 7. Governments and international health organizations should establish repositories of evaluated campaign visuals (both international and local) categorized by colour-coded emotional strategies. This will serve as a reference for future campaigns and encourage best practices in visual therapeutic messaging

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