



Research Article

Understanding Nigerian Students' Reactions to AI-Driven Health Advertising on Social Media

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ABSTRACT

This qualitative study examined how Nigerian university students make sense of AI-generated health advertising on Instagram and TikTok. Using purposive sampling, twelve students took part in online semi-structured interviews. Thematic analysis showed three consistent patterns. First, most students quickly recognised synthetic cues by stacking signals such as flat vocal timbre, repeated avatars, and micro-expression gaps. Secondly, engagement depended less on polish and more on cultural fit. Local voice, humour, everyday Nigerian settings, and clear naming of institutions held attention, while foreign voice-overs and generic stock scenes triggered doubt. Thirdly, intention to act followed credibility checks. Students shared, clicked, or visited clinics only when posts linked to verifiable sources such as known hospitals, NGOs, or government handles. These findings align with the Elaboration Likelihood Model: in a high-stakes health context, students adopt central processing and test arguments before they move. We conclude that trust, cultural resonance, and traceable provenance are necessary bridges from attention to behaviour. We recommend co-branding with verified health institutions, systematic cultural localisation of creative assets, and campus-level AI literacy to support responsible engagement. The study contributes a Nigeria-specific account of youth verification practices that refine ELM for AI-mediated health persuasion.

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1. Introduction

The study sits at the junction of three shifts in Nigeria. First, generative systems now produce a rising share of persuasive messages, yet audience responses remain inconsistent. Evidence from Nigeria shows that personalisation can increase attention while doubts about authorship, data use, and cultural fit depress trust and action, which makes credibility the hinge variable [1]. Sector syntheses describe uneven organisational capability, shallow transparency practices, and skills gaps that complicate Integrated Marketing Communications, so execution quality varies across firms and platforms [2-4]. At the content level, studies disagree on whether synthetic messages outperform human work. Some report higher arousal, novelty, and

purchase intention when creativity and informativeness are salient, although effectiveness depends on appeal type and disclosure choices [5-8]. Others show penalties once audiences infer AI authorship or sense a synthetic look, with authenticity and moral disgust lowering loyalty and willingness to consume in domains as varied as destination marketing, fashion, charity appeals, and food imagery, which underscores the fragility of trust in visual persuasion [9-13]. These frictions are not only psychological. They are also institutional and ethical, given thin governance, copyright uncertainty, and disclosure dilemmas that surround synthetic advertising in practice, where organisational policy often lags everyday use of multiple tools inside marketing teams [14-17,19]. Nigerian youth culture adds another layer. Reviews and mixed methods work with Gen Z Nigerians find that humour, relatability, and personalisation raise effectiveness, yet scepticism persists and unsolicited digital promotion rarely converts on its own, which suggests that context, creative fit, and agency matter more than volume [20-22].

Despite this growing body of work, three problems remain. First, most studies aggregate consumer responses across sectors or countries, so they rarely isolate health messages aimed at young Nigerians, even though health communication heightens concerns about accuracy and manipulation and may punish perceived synthetic gloss more than entertainment does [24-27]. Secondly, platform mechanics are under-theorised. Experimental and survey evidence shows that disclosure, appeal type, and perceived agency shift outcomes, yet we lack qualitative accounts of how Nigerian students actually recognise, process, and talk back to AI-generated health content in everyday feeds where repetition, trend sounds, and creator vernaculars guide attention and credibility judgements [8,5,13,28]. Thirdly, the Nigerian implementation gap makes it unclear whether capability constraints in firms and institutions translate into distinctive audience heuristics about authenticity and data risk, which could re-weight the routes to persuasion predicted by classic models and reinforce demands for cultural congruence and procedural transparency in health-related appeals [1,2,18,29,30].

This study addresses these gaps by focusing on Nigerian students as a critical audience segment and by concentrating on AI-generated health advertising in their native social spaces. It will map recognition and understanding of synthetic cues, test which creative and cultural elements drive engagement and trust, and assess effects on attitudes and intentions across gender and usage patterns, thereby connecting audience talk, platform features, and persuasion pathways to the stated objectives with specific attention to credibility, cultural fit, and disclosure. Instagram and TikTok are justified because they are the leading visual and short-form ecosystems for Nigerian youth, and because TikTok already reaches about 37.4 million Nigerians while Instagram remains a key venue for visual commerce even at a smaller base, which concentrates relevant encounters with health content and paid promotion among students [31,32]. By anchoring analysis in these platforms, the study can evaluate how synthetic authorship interacts with creator conventions, humour, and trend grammar that shape reception among young Nigerians, closing the loop between creative practice and real audience sense-making in a local context where trust is contested and governance is thin.

Research objectives

The study seeks to;

- i. examine students' levels of awareness and understanding of AI-generated health advertisements;
- ii. investigate how message design elements (such as visuals, tone, and cultural alignment) influence engagement with AI-generated ads;
- iii. evaluate the impact of AI-generated health advertising on students' attitudes and behavioural intentions toward health practices.

2. Literature Review

2.1. Generative AI in Marketing

Serious marketing value from generative AI comes not from novelty but from disciplined use that links tools to outcomes. Adoption is already high in the United Kingdom, where 61 percent of professionals use generative

systems at work, 83 percent weekly, and 79 percent on ChatGPT, yet only 24 percent understand tool terms, while 90 percent of external shares embed third-party material, which makes copyright and provenance a material risk rather than an academic talking point [16]. Ethical audits flag parallel dangers around bias, privacy, and synthetic media that can undermine brand trust if firms chase scale without safeguards [15]. Nigerian copyright doctrine is not yet fit for machine-authored outputs, which raises the stakes for brands that export content across jurisdictions [33]. Strategy research warns that without alignment to business goals and decision rights, firms automate noise and amplify risk rather than advantage [19].

The literature promises creativity gains because foundation models combine breadth of training with randomness, which can yield ideas that are both novel and appropriate, yet that promise is context sensitive and not automatic [34]. Rigorous tests show state-of-the-art image models beating human creatives on quality and even click through in the field, which implies the supply of persuasive visuals is no longer the bottleneck for many campaigns [35]. Nigerian interview data complicate this optimism, since authenticity doubts, privacy anxiety, and weak cultural fit cut through personalisation benefits and dampen engagement, which means pixel-level excellence does not guarantee cultural resonance [1]. Fashion work in Southeast Nigeria finds Instagram as daily inspiration yet also shows active remixing to keep identity and resist conformity, which indicates audiences are not passive recipients of machine-made style cues [36]. Beauty sector synthesis reaches a similar caution, virtual try on and predictive creative can lift experience, yet data privacy, bias, and unrealistic standards create legitimacy risks unless datasets and consent are inclusive and explicit [37].

Managers report real productivity from text and code drafting, but they also impose human review where mistake costs are high, which fits an input choice and augmentation continuum that trades speed against control and risk [17]. Marketing education echoes this by treating ChatGPT as a draft partner that must be checked for bias and facticity and disclosed to stakeholders, a discipline content teams should mirror in production pipelines [38,18]. Channel dynamics demand further restraint. Platforms and search engines can penalise generic or error-prone outputs, so brand teams need channel-specific prompting, editing, and measurement rather than blind scale [39]. Practical playbooks for content planning, personalisation, repurposing, SEO, and performance analysis converge on human AI collaboration, not automation for its own sake [40,41].

Context finally determines feasibility. Many Nigerian SMEs still operate manually, so any promise of automation needs investment in skills, data, and infrastructure before content factories are realistic [42]. Integrated marketing communication work shows emerging uses across analytics, chatbots, and targeting, yet progress is limited by infrastructure, privacy gaps, and a skills vacuum, which also constrains logistics where resistance to change and regulation slow deployment [2,43]. E-commerce cases record both growth and anxiety about jobs and fairness, so responsible integration is not window dressing but central to the licence to operate [23]. Policy analysis on misinformation insists that detection and moderation must be transparent and culturally adaptive, or they will miss code-switching and regional nuance [44]. Media scholarship cautions that speed can deskill and homogenise creativity unless bounded by ethics, audits, and data protection, and use AI to augment craft rather than replace it [45]. Public policy frames this as action to capability to transformation to impact, moderated by infrastructure, talent, data, and adaptive leadership, which turns tool choice into institutional design rather than procurement [26]. That lens also covers public health and education, where AI-generated memes can help drug abuse prevention if interpretable and local, and where children's radio can gain access while demanding privacy by design and cultural fit [46,47].

2.2. Awareness and Understanding of AI-generated Advertisements

Public awareness of AI-generated adverts is not a simple matter of recognition. It is a moving target shaped by authenticity cues, disclosure, culture, and platform context. Nigerian interviews show that personalisation can lift attention, yet doubts about authenticity and data use quickly erode trust, especially when cultural nuance is missed, which means awareness often arrives with suspicion rather than acceptance [1]. Laboratory evidence points to a similar pattern. When people know an image is synthetic, they often judge it less natural

and less healthy, and they say they are less willing to consume, although some processed items like hamburgers can buck the trend, which implies that category norms moderate reactions to AI visuals [13].

Design choices matter for understanding as well as liking. Ads that look lifelike and imaginative are seen as less eerie and more intelligent, which raises acceptance, while obvious synthesis raises eeriness and lowers perceived intelligence, so execution quality is not cosmetic; it is causal [5]. Field-facing work in luxury shows that what persuades is not a vague sense of magic but clear informativeness and genuine novelty, which travel through trust and perceived humanness to purchase intent, so brands must earn cognitive respect, not just aesthetic praise [6]. Yet other experiments warn that once people think an emotional message is authored by a machine, they reduce word of mouth and loyalty, with effects explained by lower authenticity and even moral disgust, which suggests disclosure without design for credibility can backfire [9]. Travel research adds that perceived authenticity of synthetic images still builds trust and patronage when content is congruent and especially when not explicitly labelled, which creates a real disclosure dilemma for regulators and firms [10].

Audience context then tilts outcomes. Qualitative work with Thai consumers finds end users and agencies can like AI adverts and read them as practical and confidence-building, yet professionals still flag questions about bias and workflow fit, which aligns with broader warnings about manipulation, privacy, and autonomy in algorithmic persuasion [48,14,26]. Mixed evidence on labels and emotion shows why: AI content can raise psychological engagement and even behaviour, but strong emotion and explicit labels often dampen that lift, so firms must match appeal to the perceived mind of the source and sometimes assign a social role to the system to restore communal credibility [8,28]. In fashion, early interviews report that trust and engagement are plastic and shaped by personalisation quality, echoing claims that product type, age, and innovativeness moderate effects, which means one-size-fits-all conclusions about awareness are naive [11,24].

Platform realities in Nigeria further complicate comprehension. With Facebook at 38.7 million users and TikTok at 37.4 million users in January 2025, creators face feed cultures where short video norms educate audiences to expect slick synthesis, while Instagram at 9.9 million users remains important yet smaller, which changes what disclosure signals mean across channels [31]. Gen Z surveys in Nigeria find that humour and relatability increase effectiveness on TikTok and Instagram, but trust remains fragile and gains are only moderate, which supports the view that scale without cultural fit breeds doubt rather than loyalty [20]. Broader IMC work notes infrastructure, skills, and privacy gaps that lower literacy about how AI works, while unsolicited ads rarely create patronage, which together imply that raising public understanding requires better relevance and consent, not more volume [2,21,22].

Across sectors, the same lesson repeats. Health and PR studies show uneven AI knowledge and early adoption, so audiences and communicators may both misread machine roles, which feeds misperception of AI authorship and intent [29,30]. Nigerian education and skill gaps widen the risk that citizens remain content consumers rather than critical evaluators, which depresses meaningful awareness of how AI adverts are made and why they look persuasive [3,49]. Finally, emerging studies on creator labels show AI only and human plus AI can trigger higher arousal and perceived innovativeness but also signal lower company effort, which splits interpretation between admiration and scepticism and therefore demands a transparent narrative about human oversight and benefit to the viewer [7,25,27,50].

2.3. Engagement with AI-generated ads

Engagement with AI-generated ads is not a single construct. It is a moving mix of attention, trust, emotion, and context, and the mix changes across cultures and platforms. Interviews with ten Nigerians show that personalisation improves attention, yet doubts about authenticity and data use depress trust, so engagement rises and falls within the same exposure, and the local fit of language and imagery is decisive [1]. Evidence that audiences read synthetic cues quickly also matters. In a food image test with 154 participants, identification of AI images lowered willingness to consume and perceptions of health and naturalness, except for two categories, which implies that engagement is category bound rather than uniformly dampened by the AI label [13].

Design choices shape responses in measurable ways. Lifelike and imaginative executions reduce eeriness and raise perceived intelligence which in turn lifts acceptance, while visible synthesis does the opposite, hence creative craft is not cosmetic but causal for engagement paths [5]. Where luxury ads are concerned, perceived artificial creativity works through trust and perceived humanness to drive purchase intent mainly via informativeness and novelty, not mere entertainment, so audiences reward cognitive value more than spectacle [6]. Yet emotional copy that audiences think is written by a machine reduces word of mouth and loyalty, an authorship effect explained by lower authenticity and even moral disgust, which weakens engagement unless the message is factual or the AI is framed transparently as an editor or a speaking agent [8,9]. Travel images add a twist. Perceived authenticity still builds trust and patronage, especially when content is congruent and not labelled, which creates a disclosure trade off for both ethics and effectiveness [10].

Platform and audience structure set the ceiling for any tactic. Nigeria counts 38.7 million Facebook users and 37.4 million on TikTok in January 2025, while Instagram reaches 9.9 million, so short video cultures normalise slick synthesis for youth while also intensifying scrutiny of motive and effort [31,32]. A survey of 205 Gen Z Nigerians reports that humour, relatability and personalisation raise effectiveness on TikTok and Instagram, yet trust remains fragile and overall impact is only moderate, which signals that relevance without credibility stalls deeper engagement [20]. Broader Nigerian studies identify adoption barriers in skills, infrastructure and privacy which blunt both the supply of well made AI creatives and the public's literacy to assess them, so engagement deficits are partly systemic rather than purely creative [2,3,29,30].

The remaining puzzle is when AI-generated ads outperform human work. Agency and expert interviews claim stronger consumer engagement and buying intent because AI balances and varies visuals, while social media experiments find that AI increases psychological engagement, but strong emotion and explicit labels can mute behaviour, so claimed lifts depend on message tone and disclosure design [28,50]. Studies of creator labels show AI-only and co-created content raise arousal and perceived innovation, yet also signal lower company effort, which splits interpretation between admiration and scepticism [7]. Green marketing results add a boundary condition. Moderate green improves purchase intention while excessive green triggers greenwashing scepticism, so engagement is maximised by restraint and credible agency cues [27]. Health and behaviour work shows people prefer human agents for anger yet choose chatbots for embarrassment, so matching affect to perceived agency can protect attention without moral backlash [51]. Finally, ethical critiques warn that manipulation and privacy threats erode autonomy, which means that any engagement gains are contingent on transparency and choice, not only on creative novelty or scale [4,14,24,25,26,49].

2.4. Impact of AI-generated Advertising

The evidence on the impact of AI-generated advertising is fractured, and the fractures matter. In Nigeria, ten interviews show gains in attention from personalisation yet losses in trust from opacity and weak cultural fit, which means engagement is contingent on transparency and local nuance rather than scale alone [1]. This trust problem is not only African. When 154 people viewed AI food images, accurate detection of synthetic cues reduced willingness to consume and dampened health and naturalness judgements, with only hamburgers and apples escaping the penalty, which implies category-specific exceptions rather than a general benefit from AI sheen [13]. The mechanism aligns with work that links verisimilitude and imagination to lower eeriness and higher perceived intelligence, while visible synthesis does the reverse, so creative craft is not window dressing; it changes acceptance pathways [5,14].

Claims of universal uplift are overstated. Interviews with marketers and directors report stronger engagement and buying behaviour from AI content, yet these accounts lack behavioural baselines and sit uneasily beside experiments that show labels and high emotion can mute behaviour even when psychological engagement rises [50,28]. In luxury settings, purchase intention flows mainly through informativeness and novelty, not entertainment, via twin routes of trust and perceived humanness, which narrows where AI can win without harming authenticity expectations [6]. Where copy is emotional, the authorship effect cuts loyalty and

word of mouth, partly due to moral disgust, unless the message is factual or the AI role is limited to editing or is explicitly framed as a non-human speaker, which again stresses message context over tool novelty [8-9]. Travel studies show authenticity still builds trust and patronage, especially when content is not labelled, which sharpens the ethics versus effectiveness trade-off flagged in synthetic media frameworks and charity appeals, where awareness of falsity depresses empathy and giving except under exceptional circumstances with salient ethical motives [10,12,14].

Market structure and capability set the ceiling. Nigeria records 38.7 million on Facebook, 37.4 million on TikTok, and 9.9 million on Instagram, so short video cultures dominate reach among youth, yet a survey of 205 Gen Z users finds only moderate impact, with humour and personal relevance helping, while doubt persists, which suggests relevance without credibility stalls deeper outcomes [31,20]. Adoption studies report infrastructural limits, privacy anxieties, and skills gaps that slow both quality supply and critical literacy, so weak engagement is partly systemic rather than merely creative, and unsolicited ads show little effect on patronage, which cautions against volume strategies in any format, including AI [2-4,21,22,29,30]. Managerial optimism that AI or co-creation signals innovation and arouses emotion is real, yet audiences also infer lower company effort which splits interpretation between admiration and scepticism, while green marketing shows that moderate cues raise purchase intention but excess triggers greenwashing accusations, so restraint, disclosure design and human oversight are not optional, they are causal levers [5,7,11,24-27].

2.5. Elaboration Likelihood Model (ELM)

The Elaboration Likelihood Model was advanced by Richard Petty and John Cacioppo in 1986. Its kernel is that persuasion follows two routes. The central route relies on thoughtful scrutiny of message arguments when people have motivation and ability. The peripheral route relies on surface cues such as attractiveness, music, or social proof when motivation or ability is low. Central processing yields attitudes that are more stable, predictive of behaviour, and resistant to counter persuasion, while peripheral processing produces more fragile shifts that fade or flip when cues change [52].

In advertising research, ELM explains when design choices matter as evidence versus when they work as shortcuts. It implies that involvement, prior knowledge, and cognitive load shape which route dominates. For AI advertising, the model connects creative properties to processing outcomes. If synthetic artefacts raise eeriness or reduce authenticity, audiences lean on shortcuts that can suppress acceptance, while perceived intelligence can move viewers toward deeper appraisal when relevance is high [5,8].

ELM suits the present study because the aims map cleanly to route drivers and outcomes. Awareness and recognition shape the ability and motivation to elaborate. Visuals, tone, and cultural alignment operate as arguments when culturally resonant, or as mere cues when they feel generic, which matters for Nigerian contexts with sensitivity to local signals [1]. Attitudes and behavioural intentions track the durability difference between central and peripheral change, which lets the study test whether AI health ads on Instagram and TikTok prompt informed choices or only cue-driven clicks [52,5].

3. Methodology

3.1. Paradigm

The study was guided by an interpretivist paradigm, which assumed that reality is socially constructed and that individuals interpret messages in different ways based on their cultural and experiential backgrounds. This orientation was appropriate because the study sought to understand how Nigerian students made sense of AI-generated health advertisements on Instagram and TikTok. Interpretivism focuses on meaning and lived experience rather than measurable variables, and it allows for flexible, context-rich exploration [53]. This approach supported an interest in subjective perceptions, not statistical generalisation. It was also shaped by the

researcher's belief that attitudes toward AI health content depend on the intersection of technology, culture, and trust, which could best be captured through participants' own words. Thus, the paradigm guided the use of qualitative interviews that allowed meaning to unfold from dialogue.

3.2. Study Design

A qualitative descriptive design was adopted to explore how students recognised, interpreted, and reacted to AI-driven health advertisements. Qualitative description helps researchers to provide straightforward accounts of participants' experiences and meanings in everyday language [54]. This design was selected because it allowed the researcher to capture nuanced interpretations of visual and textual cues in AI-generated content. The semi-structured interview method encouraged participants to reflect on specific examples of ads they had encountered, explain their reactions, and discuss how they judged authenticity. This design was flexible enough to let new ideas emerge, while still focusing on the core objectives. It also suited the online nature of the data collection, as conversational interviews could occur in accessible digital spaces where participants already engaged with the phenomena being studied.

3.3. Sampling and Recruitment

The study used purposive sampling to recruit 12 participants who were Nigerian university students with varying exposure to AI-generated health content. This non-probability method was suitable because participants needed to have experienced or interacted with AI-generated material to contribute relevant insights. Diversity in gender, institution type, study level, and platform usage was deliberately built into recruitment to allow comparison across user groups. Six participants were male and six female, balancing perspectives on authenticity and trust. Equal numbers were drawn from public and private universities to reflect different digital access levels. Participants were contacted through student networks and social media calls that briefly explained the study purpose. Willing respondents completed an online consent form before scheduling interviews. This approach maintained ethical clarity and participant autonomy while ensuring that the sample captured a range of experiences representative of Nigeria's university demographic.

3.4. Setting

The study was conducted entirely online, using Zoom and WhatsApp video calls. This decision reflected both the digital nature of the research topic and the practical considerations of reaching students across different Nigerian universities. Online interviewing also mirrored the digital spaces in which participants encountered AI-generated ads, making the setting contextually coherent [55]. Conducting interviews in familiar virtual environments helped participants feel relaxed and encouraged them to share their screens to show specific examples of ads they referenced. Internet connectivity occasionally disrupted conversations, but this challenge was managed by allowing follow-up voice notes and short clarifying messages. The researcher found that the online setting enhanced openness, as participants appeared less self-conscious and more willing to describe their digital habits honestly.

3.5. Data Collection

Data were collected through semi-structured online interviews lasting between 45 and 70 minutes each. The researcher developed an interview guide aligned with the study's three objectives, covering recognition of AI cues, design preferences, and credibility judgments. Questions were open-ended to invite depth and reflection. During interviews, the researcher actively encouraged examples, often prompting participants to recall specific posts or describe what made them pause, like, share, or distrust a health advert. Being both interviewer and listener, the researcher adapted follow-up questions dynamically. When participants struggled to recall

examples, screen-sharing or verbal walkthroughs helped refresh their memory. This responsive approach supported richer data, consistent with interpretivist practice where the researcher and participant co-construct meaning [56].

After each interview, immediate field notes were written to capture tone, emotion, and researcher's impressions. For example, the researcher noticed that students from science backgrounds tended to analyse ad design more technically, while non-science students focused on cultural voice and humour. This early noticing shaped later probes and revealed the value of flexibility during interviewing. All interviews were recorded with consent and transcribed verbatim to preserve linguistic authenticity and local expressions.

3.6. Data Analysis

The data were analysed thematically using Braun and Clarke's [57] six-phase framework. The process began with repeated reading and familiarisation, followed by initial coding that labelled recurring ideas such as "AI detection cues," "cultural resonance," and "trust testing." Codes were then reviewed, clustered, and refined into broader themes that captured recognition patterns, design preferences, and credibility pathways. MaxQda software was used for organisation, but interpretation relied on manual reading and reflection to ensure closeness to the data.

The researcher found this stage both demanding and revealing. It was surprising how quickly participants could detect AI cues, and challenging to distinguish between genuine scepticism and performance of digital literacy. During theme refinement, it became clear that humour, cultural fit, and institutional tagging repeatedly surfaced as determinants of engagement and trust. The iterative process of reading, coding, and revisiting transcripts allowed a deeper appreciation of participants' subtle reasoning processes. The final thematic structure emerged organically, balancing descriptive fidelity with interpretive depth.

3.7. Ethical Considerations

Ethical approval was obtained from the University of Uyo Institutional Human Research Ethics Committee (UNIUYO-IHREC). Participants received a detailed information sheet explaining the study's purpose, procedures, and voluntary nature. Written informed consent was obtained electronically before each interview. Confidentiality was ensured by assigning pseudonyms and removing identifying details from transcripts. Data were stored on a password-protected drive accessible only to the researchers. Because the topic involved online media consumption, participants were reminded not to share personal accounts or private messages. They were also informed that they could withdraw at any point without penalty. Ethical mindfulness was sustained throughout, especially during discussions of sensitive health topics or perceived misinformation, where the researcher clarified that the study was about perception, not medical advice.

3.8. Reflexivity and Researcher Positionality

Both researchers were Nigerians who shared cultural proximity with participants. One researcher is an academic researcher, while the other is a health content writer and pharmacy student. This insider position offered distinct advantages. It enabled rapport, cultural understanding, and authentic dialogue. Participants often used informal expressions, knowing they would be understood, which enriched the data. Being familiar with the linguistic and media landscape of Nigerian students also helped the researchers interpret subtle cues about humour, accent, and trust.

However, insider status also carried risks of assumption and bias. As a teacher, the first researcher risked over-interpreting responses through an educational lens, while the second, as a health communicator, could have unconsciously evaluated messages by professional standards rather than audience perception. To manage these risks, both maintained reflexive journals throughout data collection and analysis, noting preconceptions

and emotional reactions. They discussed their reflections after each interview to challenge emerging biases and keep interpretation grounded in participants' voices. This self-awareness reinforced the credibility and transparency of the study, ensuring that findings reflected genuine participant meanings rather than researcher expectations.

4. Result

4.1. Characteristics of Respondents

This study involved 12 students, split by gender: six males and six females (see table 4.1). Half attended public universities and half private. Eight were undergraduates and four postgraduates, across science and non-science fields. Platform use varied: three heavy TikTok users, three heavy Instagram users, three dual heavy users, and three light or moderate users. Exposure to AI health ads ranged from high (five) to moderate (four) to low (three). Four participants created content, while eight were consumers only. Ages ranged 19 to 28, mostly urban with some peri-urban. For anonymity, participants were coded as M1 to M6 and F1 to F6 overall.

Table 4.1. Characteristics of Respondents

| Category | Sub-category | Number of Respondents (N = 12) | Description / Rationale |
|-------------------------------------|---------------------------------------|--------------------------------|--|
| Gender | Male | 6 | Enables comparison of perceptions and engagement patterns. |
| | Female | 6 | Supports gender-based analysis of authenticity and trust. |
| Institution Type | Public Students | University 6 | Captures views from federal/state universities with more organic exposure. |
| | Private Students | University 6 | Reflects different digital literacy and media habits. |
| Level of Study | Undergraduate | 8 | Focus on the majority user group and frequent social-media users. |
| | Postgraduate | 4 | Adds maturity and more critical interpretation of AI content. |
| Platform Pattern | Usage Heavy TikTok Users | 3 | Emphasises short-form video engagement patterns. |
| | Heavy Instagram Users | 3 | Captures image-led and aesthetic ad interpretation. |
| | Dual Heavy Users (TikTok + Instagram) | 3 | Enables cross-platform comparative insights. |
| | Light / Moderate Users | 3 | Provides a contrast group with lower exposure and weaker recall. |
| Exposure to AI-Generated Health Ads | High exposure | 5 | Encounters AI-generated health ads weekly or more; can recall 2 or more specific examples. |
| | Moderate exposure | 4 | Encounters monthly; can recall 1 clear example with basic details. |
| | Low exposure | 3 | Encounters sporadically; recalls a recent example with limited detail. |
| Content Role | Content Creators | 4 | More aware of algorithmic patterns and authenticity cues. |
| | Content Consumers Only | 8 | Mirrors the general student audience and everyday ad reception. |

4.2. Themes

4.2.1. Recognition and Understanding of AI-Generated Ads

In discussion, most participants showed that they can spot tell-tale AI cues in health ads, though a few mixed them up with polished human edits. M1 (Non-Science, Heavy TikTok) recalled a TikTok Reel on blood donation and said, *"I knew it was AI because the nurse's smile did not move with her cheeks... the voice said 'Donate today' like a robot reading."* M4 (Non-Science, Heavy Instagram) added, *"That nutrition carousel had a perfect glow on every plate and the hands were always cropped; stock avatar vibes."* F1 (Non-Science, Heavy Instagram) noted Instagram Stories on period health and said, *"The captions were flawless and instant in three languages... that auto-translate look gave it away."*

Science students tended to name mechanisms. M2 (Science, Dual Heavy) reflected on a malaria-tips Reel, *"The vocal timbre was synthetic and the B-roll looped; it looked like text-to-speech over diffusion-generated frames."* F2 (Science, Heavy TikTok) was precise, *"You see face smoothing plus zero micro-expressions during emphasis; that is classic generative output."* F6 (Science, Heavy TikTok; Creator) tied cues to data provenance, *"The script recycled the same three claims across different pages; that repetition signals a common prompt and model."*

Creators were the quickest to triangulate cues across platforms. M5 (Non-Science, Dual Heavy; Creator) remembered HIV testing week content, *"I checked the page history and found the same presenter face pasted on four accounts; same jawline, same blink pattern."* F4 (Non-Science, Heavy Instagram; Health Creator) said, *"Healthy cooking reels with impossible steam behaviour give it away... the steam flows backwards between cuts."*

Four voices pushed back in useful ways. M3 (Non-Science, Light/Moderate) cautioned, *"Some mental health helpline posts looked AI but the NGO confirmed a human editor; high-end colour grading fooled me."* M6 (Science, Light/Moderate) on vaccination notices said, *"Templates can look synthetic; without a model watermark I cannot be sure."* F3 (Non-Science, Dual Heavy) recalled a COVID booster Story, *"The motion felt uncanny, yet the hospital logo checked out; maybe it was just 60 fps smoothing."* F5 (Non-Science, Light/Moderate) on an eye-screening flyer observed, *"It was clean, centred and sharp... I thought AI, but it could be a Canva layout."*

Concrete recall grounded these judgments. F6 pointed to a TikTok campus fitness challenge on her FYP, *"The coach talks while never inhaling... the waveform is too flat."* M1 cited TikTok ads, *"The subtitles appear in perfect timing, even on slang; no human editor does that for freebies."* F2 remembered a mental wellbeing challenge on TikTok, *"Cutaway hands had six fingers in one frame."* M4 described Instagram Reels, *"Shadows were identical across three scenes shot indoors and outdoors."* M5 compared identical avatars across pages, *"Same face across pages is my red flag."* F1's Instagram Stories example reinforced the same point, *"Auto-translated captions were instant and flawless."* M2 summed up a working test, *"If motion is smooth but joints hitch on turns, I mark it as AI."*

Overall, most students accurately separated AI-generated from heavily edited human content by stacking multiple cues. The minority asked for verification or accepted uncertainty. As M6 concluded, *"I need either provenance tags or traceable links; otherwise, it stays in the maybe bucket."*

4.2.2. Design Cues, Cultural Fit, and Engagement Pathways

Across both platforms, respondents linked their engagement with AI-generated health adverts to visual design, tone, and cultural alignment. Most described a quick visual test before deciding to watch, save, or skip. M1 (Non-Science, Heavy TikTok) explained that *"If the voice sounds like home and the person looks like they are in Nigeria, I watch to the end... but when it sounds foreign, I just scroll."* F1 (Non-Science, Heavy Instagram) agreed, *"Simple captions and Nigerian English keep me; the moment it switches to accent or slang from abroad, I lose interest."* Both indicated that cultural resonance and language inform immediate reactions more than technical polish.

For creators, pacing, music, and hook timing dominated their thinking. M4 (Non-Science, Heavy Instagram; Creator) noted, *"Instagram users stop fast, so you must hit with colour and clarity in the first three seconds."* M5 (Non-Science, Dual Heavy; Creator) added, *"I make mine with a catchy Afrobeat underlay and quick CTA... people save it when they feel the beat fits the message."* F4 (Non-Science, Heavy Instagram; Health Creator) used culinary examples: *"Healthy cooking reels with local vegetables and pidgin captions always get comments; if I use imported ingredients, it flops."* F6 (Science, Heavy TikTok; Health Creator) shared a parallel: *"In my campus fitness clips, I pick tracks trending among students; once the music connects, the message rides on it."*

Science students tied engagement to visual realism and narrative logic. M2 (Science, Dual Heavy) recalled a malaria prevention video, *"It used slow drone shots that felt imported, so I skipped halfway... when they used market scenes, I re-watched."* F2 (Science, Heavy TikTok) echoed this, *"Too polished means fake; I prefer rough edits that look real."* Such comments suggest that over-produced visuals may undercut credibility. Similarly, M6 (Science, Light/Moderate) explained that *"The vaccination clinic poster had neat design but lacked a location; so even though it looked good, I ignored it."*

Other respondents emphasised humour and relatability. F3 (Non-Science, Dual Heavy) said, *"The COVID booster ad made me smile because the nurse spoke pidgin and said 'no dull yourself'; I shared it."* M1 mentioned similar humour in a blood donation drive, *"They used one guy joking about 'Naija blood strong pass'; that made people comment."* F1, M5, and F4 all credited Naija humour for driving shares, with M5 summarising, *"When it feels like our gist, we respond; when it looks like textbook talk, we scroll."*

Four participants displayed ambivalence. F5 (Non-Science, Light/Moderate) commented, *"Sometimes too many emojis or slang make it childish... I skip when it feels unserious."* M3 (Non-Science, Light/Moderate) admitted, *"I saved a mental health clip because of the colours, not the message."* F2 doubted one upbeat clip, saying, *"They added comedy to serious mental topics; it looked tone-deaf."* F6 also reflected, *"When fitness videos use Western gym scenes, I do not relate; it feels like copy-and-paste."*

Overall, participants associated high engagement with authenticity cues: local accent, humour, relatable settings, and balanced editing. Over-polish, foreign voiceovers, or generic imagery weakened credibility. As M4 concluded, *"You must look and sound Nigerian before we even listen."*

4.2.3. Credibility, Attitudes, and Behavioural Intentions

Students linked their trust and intended behaviour toward AI-generated health adverts to whether the message appeared credible, traceable, and locally grounded. Most respondents said they only acted when the content came from a known clinic, NGO, or government agency. M1 (Non-Science, Heavy TikTok) explained, *"When I saw the blood donation ad and it had the Red Cross logo, I shared it with my group... I even checked their page to confirm it was real before reposting."* F1 (Non-Science, Heavy Instagram) added, *"If it looks official or tagged with the Ministry of Health, I am more likely to follow the link or tell someone else to."* Both described an active process of checking credibility before taking any step.

For some, AI-generated posts inspired meaningful action when they looked grounded in Nigerian contexts. M2 (Science, Dual Heavy) said, *"The malaria prevention post linked to NCDC; that was when I trusted it enough to check the nearest test centre."* Similarly, F6 (Science, Heavy TikTok; Creator) explained, *"When I made a campus fitness clip with the school health office's handle, people joined the challenge... they trust when there is a name they know."* These examples reveal that institutional or social verification increases willingness to act.

Peer validation also shaped trust decisions. F2 (Science, Heavy TikTok) said, *"Before I try anything from TikTok health pages, I send it to my group chat and ask, 'Who has seen this?'... if two or three people confirm, I take it serious."* M5 (Non-Science, Dual Heavy; Creator) described how *"People commented 'Is this real?' under my HIV testing video until I tagged a known NGO; only then did the shares grow."* F4 (Non-Science, Heavy Instagram; Health Creator) reinforced this: *"Once followers see me mention a real hospital or product, they engage... before that, they only like and scroll."*

Four participants, however, described hesitancy and doubt. M3 (Non-Science, Light/Moderate) said, *"The mental health helpline ad looked okay but I didn't call because I don't trust giving my number to an unknown page."* M6 (Science, Light/Moderate) shared a similar concern: *"I read the vaccination post but didn't click; they asked for name and ID... that*

felt too invasive." F3 (Non-Science, Dual Heavy) remarked, "*I saw the COVID booster notice, but the voice sounded too perfect; it made me think it was made by AI, so I skipped it.*" F5 (Non-Science, Light/Moderate) added, "*Eye-care ad was nice but no phone number or location; I just ignored it.*" Their responses suggest that uncertainty about data handling and authorship discourages action even when the message is clear.

Most participants described discussing ads in informal social settings before deciding to act. M1 and F1 both mentioned forwarding posts to hostel or class groups to "confirm if others had tried it." M2 explained, "*Sometimes we talk about these things in the lab before anyone books an appointment.*" Trust therefore appears communal and negotiated, rather than individual.

Overall, credibility emerged as the bridge between attention and behaviour. As F6 concluded, "*If it looks real, named properly, and my friends confirm, I can even go for the test... but if it feels made-up, I scroll past.*"

5. Discussion & Conclusions

5.1. Discussion of Findings

The first objective asks whether students recognise, differentiate, and comprehend AI-generated health content on Instagram and TikTok. The data show rapid, cue-stacking judgements rather than blind acceptance, which aligns with studies that treat awareness as a moving target shaped by authenticity cues, disclosure, culture, and platform context rather than a simple yes or no recognition task [1,13]. Participants' reliance on micro-anomalies in faces, audio timbre, motion and cross-page avatar duplication fits laboratory evidence that visible synthesis raises eeriness and lowers perceived intelligence, while lifelike and imaginative renderings reduce eeriness and can lift perceived intelligence and acceptance [5]. Yet there is a telling divergence. A minority foregrounded uncertainty and asked for provenance tags before deciding, which departs from experiments that assume labels move people cleanly toward rejection or acceptance [9,10]. That hesitation resembles the disclosure dilemma reported in travel contexts where unlabelled but congruent synthetic images can still build trust and patronage, while explicit labels sometimes depress it, especially for emotionally loaded content [9,10,14]. The coding table, which groups those cautionary judgments under credibility tests rather than pure recognition, therefore suggests that awareness is already being operationalised by students as a verification practice. This verification instinct is consistent with ELM's premise that when motivation and ability are high, audiences seek argument quality over surface cues, and they resist persuasion until credibility concerns are resolved [52]. In other words, recognition here triggers central processing rather than a reflexive peripheral shortcut.

The second objective concerns how design elements and cultural alignment shape engagement. Students consistently privileged local voice, accent, humour, place, and institution names over technical polish. That pattern supports luxury advertising findings where purchase intention flows through informativeness and novelty via perceived humanness and trust, not through spectacle, and it challenges managerial intuitions that more polish always converts to more engagement [6,8]. It also refines Gu et al. [5] by implying that the path from perceived intelligence to acceptance depends on whether the intelligence is culturally grounded. Over-produced visuals, foreign voices, and generic stock scenery were read as evidence of low authenticity and therefore skipped, which echoes Nigerian interview work that finds personalisation gains are often cancelled by weak cultural fit and privacy doubts [1]. The contradiction with field tests showing state-of-the-art images beating humans on click-through is important [35,13]. Those results imply that visual quality can carry campaigns where the audience is not primed for authenticity checks or where category norms welcome sheen, yet the present analysis suggests that for health, polish without cultural localness can trigger scepticism and reduce completion or action, particularly among science students who foreground narrative logic and setting [35,13]. Under ELM, those students look motivated and able to elaborate. They treat tone, visuals, and language as arguments to be evaluated, not as shortcuts. Where cues are incongruent with Nigerian life, processing shifts toward counter-arguing rather than liking.

Creators in the dataset stress pacing, hook timing, and musical fit, and they report higher saves when Afrobeat underlays and local vegetables or campus settings are used. This is not merely a craft anecdote. It aligns with Gen Z evidence in Nigeria that humour, relatability, and personalisation can raise effectiveness on TikTok and Instagram, although the overall impact remains moderate because trust is fragile [20]. The moderation matters. Strong emotion combined with machine authorship has been shown to depress word-of-mouth and loyalty through reduced authenticity and even moral disgust, so a creator strategy that tones down melodrama and leans on relatable humour and credible naming is theoretically coherent as a way of protecting central-route acceptance while still securing initial attention [8,9,28,50]. The clearest divergence from parts of the international literature appears in how quickly students detect synthetic cues and use peer verification before acting. Agency interviews elsewhere sometimes celebrate AI for balancing and varying visuals to raise engagement, yet our analysis shows that the same balancing is read as templated sameness when avatars repeat across pages, which reduces engagement unless the post is grounded in a recognised institution [50]. The “new knowledge” here is that repetition across accounts, which optimises production for scale, doubles as a credibility alarm in youth networks that are good at side-by-side comparison. That is a platform-culture effect, and it fits channel research that warns generic or error-prone outputs can be penalised by users and algorithms alike [25,39].

The third objective asks whether AI health ads motivate informed choices, dialogue, or resistance. The pathway identified in the analysis tables runs from attention to credibility checks to communal validation and then to behaviour, which is strongly consistent with ELM’s view that durable attitude change follows argument scrutiny and social reinforcement under conditions of involvement [52]. Students reported action when content was traceable to named hospitals, NGOs, or government pages. That finding aligns with public health and education work that frames effective AI use as movement from action to capability to transformation moderated by infrastructure, talent, and data stewardship, because institutional naming supplies the governance signal that bridges attention and behaviour [26,46,47]. At the same time, the data surface sharp divergences from optimistic claims about AI’s behavioural lift. Labels, perfect voices, or invasive data requests were described as reasons not to click or call, which sits with controlled studies where identification of AI reduces willingness to consume and dampens naturalness judgements, with exceptions that depend on category norms and expectations of artifice [13,28,50]. The contradiction with managerial optimism is again instructive. Interviews that celebrate stronger buying behaviour often lack baselines and ignore disclosure design. Where our respondents encountered explicit signals of automation, they slowed down, consulted peers, and often withheld action. This does not disprove uplift claims. It specifies boundary conditions. Health is a high-stakes category in which agency, privacy, and accountability loom larger than in fashion or impulse goods. Under those conditions, central processing dominates, and credibility deficits lead to resistance even when the creative is attractive.

Two structural realities widen the gap between attention and behaviour. First, Nigerian capability constraints in infrastructure, privacy governance, and skills depress both the supply of culturally precise AI creatives and the public’s literacy to assess them, which keeps the impact moderate despite large youth audiences on TikTok and Instagram [2,3,31]. Second, legal and ethical uncertainty around copyright, data provenance, and synthetic media raises the perceived risk of engagement for students who must share personal details to act. This echoes ethical audits that warn about bias, privacy, and provenance risks, as well as Nigerian doctrinal gaps on machine authorship that complicate cross-border campaign reuse [15,16,33]. The analysis shows students anticipating those risks in miniature when they ask for traceable links, official handles, or clear contacts before they click. That anticipatory caution is a form of central-route defence against perceived manipulation, a pattern consistent with concerns that algorithmic persuasion can threaten autonomy unless transparency and choice are built in from the outset [14,24,25,49].

5.2. Implications for Theory

Students treat AI cues as arguments to be verified, not as peripheral gloss, which extends the Elaboration Likelihood Model by showing recognition triggers central processing in high-stakes health contexts [52]. The dataset's "stacking" of cues such as avatar repetition, micro-expression absence, and identical shadows reframes awareness as a verification routine rather than a label effect, diverging from lab work that assumes disclosure alone settles judgment [5,13]. Central-route movement appears when institutional anchors are present, with action following tags to Red Cross or NCDC pages, which aligns with trust-and-humanness pathways to intention in luxury settings yet with stronger demand for provenance in health [6]. Platform scale raises exposure but not persuasion. TikTok's 37.4 million users and Instagram's 9.9 million in Nigeria do not erase scepticism, and a survey of 205 Gen Z students still found only moderate impact, despite humour and relatability gains [20,31].

5.3. Managerial Implications

Managers should design for credibility first, creativity second. Tie AI health ads to named institutions and verifiable handles before any call to action. In our data, students moved from viewing to sharing or clinic visits only after seeing official logos or tagged NGOs, a pattern consistent with trust pathways where informativeness and perceived humanness drive intention rather than spectacle [6]. Avoid over-polished, foreign voice-overs and stock scenery that students read as synthetic; these cues suppressed engagement and mirror experiments where identified AI reduced willingness to act among 154 participants, except in a few categories [13]. Build culturally local voice, humour, and settings, then disclose AI with a clear human-oversight note to prevent authenticity penalties documented for emotional copy attributed to machines [8,9]. Invest in skills and privacy protocols to fit Nigerian capability gaps, or scale will amplify risk rather than results [2,15,33].

5.4. Conclusion

The study shows that Nigerian students are neither passive nor easily persuaded by AI-generated health advertising on Instagram and TikTok. They recognise synthetic cues, question authenticity, and verify content before engagement, reflecting a high degree of cognitive involvement consistent with the Elaboration Likelihood Model [52]. Attention alone did not guarantee behavioural change; credibility, cultural fit, and institutional anchors were decisive. Students trusted and acted only when ads featured verifiable sources such as the Red Cross, NCDC, or their university health centres. Over-polished visuals, foreign voice-overs, and generic imagery triggered scepticism, while humour, relatable language, and Nigerian accents enhanced retention and sharing. This mix of caution and engagement suggests awareness is now tied to verification rather than simple recognition. The study, therefore, broadens ELM by showing that in AI-mediated health communication, persuasion depends not on tool novelty or emotional pull, but on trustworthiness, local resonance, and human oversight that safeguard meaning and ethical integrity.

5.5. Recommendations

First, health agencies and NGOs should co-brand AI-generated health adverts with verified institutional handles. Findings showed students acted only when content carried traceable logos or official links. The UK's NHS "AI for Good" campaigns successfully combine verified seals with relatable narratives. Implementing this in Nigeria would enhance trust and action. It requires verified social media pages, co-creation partnerships, and clear privacy policies. The challenge is bureaucratic delay, which can be reduced by inter-agency digital task forces.

Second, content creators and social media marketers should prioritise cultural localisation. Students in this study preferred Nigerian English, local humour, and familiar settings. Campaigns like Kenya's "Twende Digital" health drive show that cultural idioms outperform imported templates. Local production hubs and

training on prompt engineering can help, though costs may rise. Collaboration with local influencers can offset expenses and build relatability.

Third, universities and public health educators should integrate AI literacy into media and health communication curricula. The study found that low AI knowledge fuels scepticism. Singapore's "AI for Youth" initiative shows that awareness training builds responsible engagement. Implementing this in Nigerian campuses will demand faculty retraining and partnerships with AI labs, but can be sustained through grants and NGO-led health-tech collaborations.

5.6. Limitations of the Study

This qualitative study used purposive sampling of 12 students, so findings are not statistically generalisable. Online, self-reported interviews risk recall, desirability, and interviewer effects; intermittent connectivity also shortened or fragmented some stories. The sample skewed urban, aged 19–28, and covered only Instagram and TikTok, limiting socio-economic and platform diversity. Subgroup sizes were small, with only four creators. We relied on participants' ad recall without independent content verification, so misclassification of AI versus human edits is possible, and the cross-sectional design cannot track change over time. Institutional context and legal nuances were not examined in depth across universities or regions nationally.

5.7. Suggestions for Further Studies

Future research should expand sampling beyond urban campuses to include rural and low-connectivity students across all zones. Compare additional platforms such as WhatsApp Status, YouTube Shorts, Facebook, and X to test affordance effects. Combine interviews with systematic content auditing, reverse-image search, and provenance tagging to validate AI authorship. Use longitudinal panels to track attitude change and behaviour over time. Run field experiments that vary disclosure wording, cultural localisation, voice type, and verified institutional badges. Pair this with a national survey for generalisation. Add diary or trace methods to reduce recall bias. Examine creator workflows and university policies shaping disclosure practices.

Authors' Contribution

Ekomobong Eno Sunday conceived the study, designed the methodology. Uka Uka Nwagbara contributed to the literature review, interpretation, and manuscript refinement. Both authors led data collection and analysis, discussed results, reviewed drafts critically for intellectual content, and approved the final version for submission and publication.

Disclaimer

The views expressed in this article are those of the authors and do not reflect the official positions of the University of Uyo, Uyo.

Conflict of Interest

All authors declare that they have no conflicts of interest.

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Data Availability Statement

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

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Ethical Approval

This study received ethical approval from the **University of Uyo Health Research Ethics Committee (UNIUYO-IHREC)** under the protocol number **UU/CHS/IHREC/VOL.1/107**. All research procedures involving human participants were conducted in accordance with the relevant guidelines and regulations, specifically the **Declaration of Helsinki**. Participants' confidentiality was maintained, and informed consent was obtained from all individuals prior to their participation in the study.

Informed Consent

Informed consent was obtained from all participants involved in this study. Each participant received a detailed explanation of the study's purpose, procedures, and their rights, including the right to decline or withdraw at any point without penalty. All participants provided written consent prior to participation. Where participants were under legal age or required additional authorization, informed consent was also obtained from their legal guardians. The consent process complied with the standards and protocol approved by the **University of Uyo Health Research Ethics Committee (UNIUYO-IHREC)**.

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