

Media Impact and Behavioural Change: Evidence from COVID-19 Prevention Campaigns in North-West Nigeria

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Abstract

This study investigates the impact of media messages on public knowledge, attitudes, and practices (KAP) regarding COVID-19 prevention in North-West Nigeria. Employing a mixed-method approach, quantitative data were collected from 1,152 respondents across Kaduna, Kano, and Sokoto states, while qualitative responses were obtained from Focus Group Discussions (FGDs) and in-depth interviews. The findings reveal that 48% of respondents adopted new behaviours due to media educative campaigns, highlighting significant development outcomes. However, barriers such as limited media access and socio-economic constraints were noted, with 20.3% reporting no behavioural change. Media-driven awareness was evident in increased handwashing, mask usage, and physical distancing practices, though inconsistencies in adherence persisted. The study concludes that while media messages play a critical role in impacting public health behaviours, addressing structural barriers and misinformation is essential. These findings provide empirical evidence for designing effective health communication strategies, particularly in diverse socio-cultural contexts.

Keywords: COVID-19 prevention, Media impact, Behavioural change, Public health communication, North-West Nigeria, Knowledge-Attitude-Practice (KAP)

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1. Introduction

The role of media in shaping public health behaviours has been extensively recognised, particularly during health crises such as the COVID-19 pandemic. In a rapidly changing global milieu, media messages serve as crucial tools in promoting preventive measures, raising awareness, and impacting behavioural change. In Nigeria, where diverse socio-cultural subtleties, and varying levels of media access exist, the effectiveness of media in disseminating health information presents both opportunities and challenges. The COVID-19 pandemic, in particular, underscored the importance of effective health communication strategies to mitigate the spread of the virus and encourage public adherence to preventive measures such as mask-wearing, social distancing, and hand hygiene (Chen et al., 2020; Wakefield et al., 2010).

Media campaigns in Nigeria employed various forms of communication, from traditional radio and television to digital platforms like WhatsApp and Facebook, to disseminate educative information on COVID-19 prevention. However, the effectiveness of these messages was not uniform across the country. While urban areas had better access to digital media, rural regions faced challenges such as limited access to reliable media sources and lower levels of media literacy (Onyenankeya et al., 2021). In addition, the spread of misinformation, particularly on social media platforms, further complicated the public's response to official messages, highlighting the need for detailed and culturally sensitive media strategies (Jianmo et al., 2024; Edeoja et al., 2022). These challenges, however, did not diminish the role of media in raising awareness and prompting behaviour change, particularly in areas where access to information was optimised.

Understanding how media messages impact public knowledge, attitudes, and practices (KAP) during such health crises is critical for designing effective educative public health campaigns. The primary aim of this chapter

is to explore the role of media messages in impacting behavioural changes and development outcomes in North-West Nigeria during the COVID-19 pandemic. The study aims to assess how media messages shaped public awareness, the extent to which they impacted behavioural changes, and the barriers to full compliance with recommended preventive measures. Furthermore, the chapter seeks to examine the perceived effectiveness of these media messages, particularly focusing on the credibility of the information disseminated and its impact on public actions.

This chapter is grounded in the Health Belief Model (HBM), which provides a framework for understanding how individuals' perceptions of health risks and the benefits of preventive actions shape their behaviours (Rosenstock et al., 1994). The model's focus on perceived susceptibility, severity, and self-efficacy is particularly relevant in understanding the factors that motivate individuals to adopt or reject health-related behaviours based on media messages. Previous studies have demonstrated that health educative campaigns which emphasise the severity of a disease and its potential personal impact are more likely to result in increased compliance (Pellegrino et al., 2021). Additionally, messages that provide clear guidance on how to protect oneself and others are essential in encouraging behavioural change. However, the success of such campaigns depends largely on how well the media strategies align with the cultural contexts of the target populations (Sarkar et al., 2020).

In the context of North-West Nigeria, where the population is largely rural and the socio-economic terrain varies significantly from urban areas, the way in which media messages are framed and delivered plays a critical role in their effectiveness. During the COVID-19 pandemic, North-West Nigeria experienced a mix of compliance and resistance to the preventive measures outlined by health authorities. While some segments of the population adhered to recommended behaviours, others were hesitant, primarily due to socio-cultural factors and the widespread circulation of misinformation (Jianmo et al., 2024; Edeoja et al., 2022). This highlights the need for a deeper understanding of the factors that impact media effectiveness, particularly in regions with diverse cultural beliefs and varying levels of media access.

The importance of this study lies in its ability to inform future public health communication strategies. By examining the factors that determine the success or failure of media messages in impacting public health behaviours, this chapter contributes to the ongoing discourse on health communication, particularly in the context of global pandemics. The findings will provide actionable understandings for policymakers, media practitioners, and public health experts on how to design media campaigns that are both effective and culturally sensitive.

The aim of this chapter is to explore the impact of media messages on public behavioural change and development outcomes, specifically in relation to COVID-19 prevention campaigns in North-West Nigeria. The chapter seeks to assess how media messages shaped public knowledge, attitudes, and practices (KAP) towards the adoption of preventive measures such as handwashing, wearing masks, and physical distancing. The study has five primary objectives: (1) to evaluate the level of public awareness of COVID-19 prevention messages through media channels; (2) to determine the extent to which media messages impacted the adoption of specific preventive behaviours; (3) to assess the effectiveness of educative media campaigns in shaping public attitudes towards COVID-19 prevention; (4) to identify the barriers preventing the full adoption of recommended behaviours despite media exposure; and (5) to measure public confidence in the accuracy and credibility of the media messages. The research questions guiding the qualitative aspect of the study are: (1) how do residents perceive the role of media messages in raising awareness about COVID-19 prevention? (2) What specific behaviours have individuals adopted as a result of media messages on COVID-19 prevention? (3) What socio-cultural and structural barriers exist to the adoption of media-recommended preventive behaviours? (4) How have media messages impacted long-term attitudes towards health behaviours? (5) How do residents assess the credibility and relevance of the COVID-19 media messages?

2. Literature Review

2.1 Conceptual Review

2.1.1 The Role of Media Messages in Raising Awareness

Media messages play a vital role in raising awareness, particularly in public health crises such as the COVID-19 pandemic (Jianmo et al., 2024). Wakefield et al. (2010) argue that educative media campaigns are most effective when they are consistent, repeated, and culturally relevant. In the Nigerian context, traditional media such as radio and television remain dominant in rural areas, while social media platforms like WhatsApp, Facebook, and Twitter have emerged as vital tools in urban centres (Onyenankaya et al., 2021). Public health campaigns during COVID-19 used these platforms to disseminate prevention messages on handwashing, mask usage, and social distancing. Awareness and educative information campaigns, however, face challenges such as misinformation and limited access to media. Vosoughi et al. (2018) highlight that false information spreads faster than factual messages on social media, undermining awareness efforts. In Nigeria, a study by Edeoja et al. (2022) found that 25% of respondents were exposed to misinformation about COVID-19, reducing trust in official campaigns. The integration of local language broadcasts, as observed in Sokoto and Kano, has been instrumental in closing these gaps and improving message accessibility.

2.1.2 Perceptions of Media Credibility

Public trust in media content impacts the effectiveness of health campaigns. Pellegrino et al. (2021) note that credible sources, such as health professionals or community leaders, enhance public confidence in media messages. In North-West Nigeria, encouraging religious leaders to endorse COVID-19 campaigns improved credibility and compliance (Jianmo et al., 2024; Edeoja et al., 2022). However, mistrust persists, particularly in areas with low literacy levels or poor access to reliable information. Addressing such challenges requires continuous engagement and transparent communication.

2.2 Empirical Review

2.2.1 Media Impact on Behavioural Change

Empirical evidence shows that media messages significantly impact health behaviours (e.g., Kandpal & Dutta, 2024). Ayoade et al. (2023) reported that consistent media exposure improved mask usage and handwashing compliance in urban Nigeria. Similar findings were observed in South Africa, where culturally adapted campaigns increased adherence to COVID-19 protocols by 65% (Ndlovu & Mhlanga, 2021). These studies demonstrate that when media messages align with cultural and social norms, behavioural change is more likely.

Despite these successes, gaps in compliance remain. Sarkar et al. (2020) found that 35% of respondents in rural India ignored preventive measures due to misinformation or resource constraints. In North-West Nigeria, such barriers persist, with 20% of respondents reporting no behavioural change despite exposure to media messages (Edeoja et al., 2022). Addressing these challenges requires integrating educative media campaigns with practical interventions, such as providing affordable masks and sanitisers.

2.2.2 Barriers to Adoption of Preventive Measures

Barriers such as misinformation, socio-economic constraints, and limited media access hinder the adoption of preventive measures. Onwuzuruigbo et al. (2023) noted that 30% of rural Nigerian households lack reliable media access, reducing exposure to educative health campaigns. Furthermore, misconceptions about COVID-19 severity led to reduced compliance with preventive measures, as observed in FGDs conducted in Kano and Sokoto. These findings align with Vosoughi et al. (2018), who emphasised that misinformation creates distrust, making it harder to implement public health initiatives effectively.

2.3 Theoretical Review

2.3.1 The Health Belief Model

The Health Belief Model (HBM) serves as the theoretical foundation for understanding the adoption of preventive health behaviours. Developed by Rosenstock et al. (1994), HBM posits that behaviour change occurs when individuals perceive a threat, believe in the efficacy of recommended actions, and have access to cues to action. Media messages act as critical cues, providing the information and motivation needed to adopt preventive behaviours.

HBM's constructs – perceived susceptibility, severity, benefits, barriers, and self-efficacy – are evident in COVID-19 campaigns. For instance, Chen et al. (2020) found that messages emphasising the severity of COVID-19 increased compliance with mask-wearing and social distancing. However, barriers such as misinformation and lack of resources undermine these efforts, as observed in North-West Nigeria, where 33.6% of respondents reported difficulty maintaining physical distancing due to socio-cultural norms (Edeoja et al., 2022).

2.3.2 Application of HBM in Nigerian Public Health Campaigns

In Nigeria, HBM has been applied to address diverse health issues, including malaria prevention and maternal health. During COVID-19, the model guided media campaigns that emphasised perceived threats and benefits. For example, messages highlighting the risks of infection and the benefits of mask-wearing were effective in urban areas but faced challenges in rural settings due to limited access to resources (Onyenankeya et al., 2021). These findings underscore the need to address barriers alongside awareness to maximise the impact of HBM-based campaigns.

2.4 Major Gaps in the Literature and How They are Addressed

While considerable research has explored the role of media in shaping public health behaviour, there remain several gaps in the literature that hinder a complete understanding of how media messages impact behavioural change, particularly in the context of COVID-19 prevention in Nigeria. One significant gap is the lack of studies specifically focusing on the North-West region of Nigeria, where socio-cultural undercurrents, media access, and health communication strategies vary significantly from other parts of the country. Existing studies on media impact tend to focus on more urbanised regions or broader national-level analyses, leaving a gap in understanding how regional factors affect the reception and effectiveness of media campaigns (Onyenankeya et al., 2021; Edeoja et al., 2022). This study addresses this gap by specifically focusing on North-West Nigeria, thereby providing understandings about how local contexts, such as language, cultural beliefs, and infrastructure, impact the success or failure of media-driven educative public health campaigns.

Another gap lies in the limited exploration of the barriers that hinder the full adoption of recommended behaviours despite media exposure. While many studies have examined media effectiveness, they often overlook the factors that prevent individuals from translating media messages into action. Misinformation, socio-economic constraints, and limited media access have been identified as barriers, but empirical research in Nigeria is sparse. This study addresses this gap by not only evaluating the effectiveness of media campaigns but also by identifying and exploring the socio-cultural and infrastructural barriers that limit adherence to COVID-19 preventive measures. Through both quantitative surveys and qualitative methods (FGDs and IDIs), this study highlights the challenges faced by different demographic groups, providing a deeper understanding of why certain communities fail to comply with media-driven health messages (Sarkar et al., 2020; Edeoja et al., 2022).

Additionally, while the Health Belief Model (HBM) has been widely used to understand health behaviours in Western contexts, its application in the Nigerian setting, particularly during the COVID-19 pandemic, remains underexplored. The model's constructs – perceived susceptibility, severity, benefits, and barriers – have been shown to predict compliance with preventive measures in many studies (Pellegrino et al., 2021), but the cultural and contextual factors that impact these perceptions in Nigeria are not sufficiently examined. By grounding this study in the HBM, it offers a unique contribution by applying this theoretical framework to understand how media messages resonate with Nigerian audiences, particularly in terms of perceived risk and self-efficacy. The study adapts the HBM to the local context, addressing cultural subtleties and barriers that affect public health behaviour, thus extending the application of the model in non-Western settings.

However, while media messaging during the COVID-19 pandemic has been studied globally, research specifically investigating the combination of traditional and digital media in health communication campaigns in Nigeria is limited. The rise of social media, especially in urban areas, presents a new dimension in the dissemination of health messages. However, research exploring the relative effectiveness of different media channels in impact COVID-19 behaviours in Nigeria is sparse. This study contributes by examining the impact of both traditional media (radio, TV) and digital platforms (social media, mobile apps), providing understandings about how these media forms complement each other and how they can be optimised to improve public health communication (Jianmo et al., 2024; Kandpal & Dutta, 2024; Onyenankeya et al., 2021).

3. Methods

3.1 Research Design and Methods

This study adopts a mixed-method approach, combining quantitative surveys, FGDs, and in-depth interviews to investigate the knowledge, attitudes, and practices (KAP) related to COVID-19 prevention messages in North-West Nigeria. The quantitative surveys provide a broad, generalisable understanding of public awareness and behaviour, while FGDs and in-depth interviews provide deeper, contextual understanding. The combination of these methods allows for triangulation, ensuring robust and comprehensive findings. Surveys measure the prevalence of behaviours, while FGDs explore the underlying reasons for these behaviours, and in-depth interviews provide individual perspectives. This triangulation strengthens the validity of the findings, offering a detailed understanding of the public's response to media campaigns, and supporting the development of targeted public health strategies (Denzin, 2012; Bryman, 2016).

3.2 Population of the Study

The population of this study comprises all residents in the North-West geopolitical region of Nigeria, which includes the states of Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto, and Zamfara. The National Bureau of Statistics (NBS) estimated the region's population at approximately 58 million people in 2023 (NBS, 2023). Specifically, Kaduna has a population of about 8 million, Kano 17 million, and Sokoto 5 million (NBS, 2023). This region was chosen for its demographic diversity, which offers a unique opportunity to study the impact of media messages on public knowledge, attitudes, and practices (KAP) regarding COVID-19 prevention. Additionally, the region's varied socio-cultural topography makes it an ideal setting for understanding the subtleties of media impact in both urban and rural areas (Legesse & Ameni, 2017; Launiala, 2009).

3.3 Sampling Technique and Sample Size

This study employs a combination of stratified random sampling and purposive sampling to achieve its research objectives. Stratified random sampling was used to select the states within the North-West region – Kaduna, Kano, and Sokoto – ensuring each state's demographic diversity was adequately represented. A random selection method was applied to these states, which guaranteed an unbiased and representative sample of the region's population (Creswell, 2014). Purposive sampling was then used to select respondents who met specific criteria, such as being residents for at least five years, aged 18 or older, and regular consumers of local media. This approach allowed for targeted data collection from individuals with relevant knowledge of the COVID-19 prevention messages (Patton, 2015).

Determining an appropriate sample size is essential for ensuring the representativeness and reliability of the

study's findings (Singh & Masuku, 2014). This study targeted a sample of 384 respondents from each of the three selected states – Kaduna, Kano, and Sokoto – yielding a total of 1,152 respondents for the quantitative survey. This sample size adheres to Akarika's (2019) guideline, which classifies a sample size of 1,000 or more as 'excellent,' ensuring the findings are statistically robust and generalisable to the North-West region of Nigeria.

For the qualitative component, the study conducted 12-person FGDs in each state, resulting in 36 participants, alongside nine in-depth interviews with professionals. This combination of FGDs and in-depth interviews allows for detailed, context-rich data, ensuring a comprehensive understanding of the problem (phenomenon under investigation). The sample sizes are justified as they offer an adequate balance between breadth and depth, capturing a wide range of perspectives while ensuring data saturation (Guest, Bunce, & Johnson, 2006).

3.4 Methods of Data Analysis

Quantitative data from the survey were analysed using descriptive statistics with the Statistical Package for Social Sciences (SPSS). The data were cleaned to remove inconsistencies, leading to the jettisoning of 29 survey forms. Thus, data from 1,123 survey forms were analysed. That was followed by the computation of frequencies, percentages, means, and standard deviations to summarise participants' knowledge, attitudes, and practices regarding COVID-19 prevention messages. This process allowed for identifying patterns and trends across variables (Field, 2013).

For qualitative data, thematic analysis was used to examine the responses from FGDs and in-depth interviews (Braun & Clarke, 2006). The process involved initial coding to identify meaningful data segments, grouping similar codes into broader themes, and refining these themes through iterative analysis. This approach allowed the identification of underlying patterns and provided a deeper understanding of the participants' perceptions of COVID-19 prevention messages. To maintain confidentiality, participant identities were replaced with coded identifiers based on their state of origin (e.g., KD1 for Kaduna participants).

3.5 Ethical Considerations in Research

Ethical considerations are essential in research to ensure respect, beneficence, and justice (Emanuel et al., 2000). In this study, informed consent was obtained by providing participants with comprehensive details about the study's purpose, procedures, risks, and voluntary participation. Confidentiality and anonymity were maintained to protect participants' privacy, ensuring that their identities and responses remained secure throughout the research process (World Medical Association, 2013).

The study adhered to ethical guidelines by seeking ethical approval from the Bayero University, Kano (BUK) Research Ethics Board before data collection. This ensured that the research met ethical standards, prioritising participant safety and rights.

3.6 Validity and Reliability of the Research Instrument

To ensure the validity and reliability of the research instrument, a 21-item questionnaire was developed, focusing on knowledge, attitudes, and practices towards COVID-19 prevention. The instrument underwent validation through expert reviews for content and face validity. A pilot test with 115 respondents demonstrated strong internal consistency (Cronbach's alpha = 0.85). The pilot testing allowed for refinement, ensuring clear and relevant questions, which enhanced the reliability and validity of the data. This rigorous approach ensures that the findings are both accurate and trustworthy.

4. Results and Discussion

4.1 Results

Table 1 offers a clear demonstration of how media messages on COVID-19 prevention have contributed to observable behavioural change among respondents in North-West Nigeria. Approximately 48% of respondents indicated that their behaviour had changed as a direct result of these messages, a substantial proportion that underscores the significant impact of media in shaping public health actions. This finding provides empirical evidence that media contents, when well-designed and effectively disseminated, can yield tangible developmental outcomes by promoting behavioural adaptation in response to health crises.

Table 1: Behavioural Change Due to COVID-19 Prevention Messages in Media (n = 1,123)

Behavioural Change	Frequency	Percentage %
Yes	539	48
No	228	20.3
Not Sure	356	31.7
<i>Total</i>	<i>1123</i>	<i>100</i>
Barriers Preventing Adherence to COVID-19 Prevention Messages in Media		
Lack of access to soap and water	183	16.3
Lack of access to face masks	282	25.1
Difficulty maintaining physical distancing	377	33.6
Belief that COVID-19 is not serious	195	17.4
Others	86	7.6
<i>Total</i>	<i>1123</i>	<i>100</i>
Confidence in Accuracy of COVID-19 Prevention Messages in Media		
Very Confident	443	39.4
Somewhat Confident	431	38.4
Not Confident	249	22.2
<i>Total</i>	<i>1123</i>	<i>100</i>

However, 20.3% of respondents reported no change in their behaviour, which suggests potential limitations in the reach or resonance of the media messages. Factors such as cultural beliefs, misinformation, or lack of accessibility to media platforms may explain this group's resistance to change. Furthermore, the 31.7% of respondents who were unsure about whether their behaviour had changed reflects the complexity of measuring media impact. It highlights the need for more targeted campaigns that not only raise awareness but also inspire confidence and clarity in actionable steps.

The barriers identified in the table provide additional context. For instance, the challenges posed by limited access to soap and water (16.3%), face masks (25.1%), and difficulties in maintaining physical distancing (33.6%) reveal structural impediments that restrict individuals' capacity to act on media messages. Equally critical is the finding that 17.4% of respondents believed COVID-19 is not serious, which points to the persistence of misconceptions that dilute the impact of media. These barriers underscore the importance of combining media campaigns with practical interventions to address resource constraints and misinformation, ensuring that behavioural change efforts are sustained and impactful.

Table 2 provides further evidence of how media contents have impact specific COVID-19 preventive practices among respondents. The data illustrates varied adherence levels across key practices such as hand hygiene, physical distancing, and face mask usage.

Table 2: Health Practices Due to COVID-19 Prevention Messages in Media (n = 1,123)

Washing hands with soap and water	Frequency	Percentage %
Always	297	26.4
Often	279	24.8
Sometimes	316	28.1
Rarely	197	17.5
Never	34	3.0
<i>Total</i>	<i>1123</i>	<i>100</i>
Maintaining of physical distancing of at least 2 metres		
Always	248	22.1
Often	266	23.7
Sometimes	374	33.3
Rarely	176	15.7
Never	59	5.2
<i>Total</i>	<i>1123</i>	<i>100</i>
Wearing of face mask in the public		
Always	243	21.6
Often	286	25.5
Sometimes	339	30.2
Rarely	161	14.3
Never	94	8.4
<i>Total</i>	<i>1123</i>	<i>100</i>

For hand hygiene, while 26.4% of respondents reported consistently washing their hands with soap and water, and 24.8% did so often, a significant proportion (28.1%) only sometimes followed this practice, and 17.5% rarely

adhered. Alarmingly, 3.0% admitted to never washing their hands with soap and water. These figures highlight a partial success of media messages in promoting hand hygiene, which remains a cornerstone of COVID-19 prevention. The data suggests that while media campaigns raised awareness, inconsistent compliance points to the need for ongoing educational efforts adapted to address specific socio-economic and cultural barriers.

In terms of physical distancing, only 22.1% of respondents always maintained a distance of at least two metres, and 23.7% did so often. The majority (33.3%) adhered only sometimes, and 15.7% rarely maintained physical distancing, with 5.2% admitting to never following this practice. These figures demonstrate that while media messages succeeded in informing the public about distancing guidelines, adherence was compromised by environmental, social, or cultural constraints. This highlights the importance of community-level strategies that support behavioural adaptation beyond information dissemination.

The data on face mask usage paints a similar picture. A combined 47.1% reported always or often wearing face masks in public, reflecting significant media impact in promoting this practice. However, the 30.2% who wore masks only sometimes, 14.3% who rarely did, and 8.4% who never wore masks reveal a gap between awareness and consistent action. This reinforces the need for multi-pronged approaches that integrate media campaigns with practical interventions, such as ensuring the availability of affordable face masks and addressing public scepticism about their efficacy.

4.2 Discussion

4.2.1 Behavioural Changes Due to Mediated COVID-19 Messages and Barriers

A study was conducted to explore the impact of media messages on public behavioural change and development outcomes, specifically in relation to COVID-19 prevention campaigns in North-West Nigeria. The findings provide substantial evidence of behavioural change attributed to media impact on COVID-19 prevention in North-West Nigeria. With 48% of respondents affirming that they changed their behaviour due to media messages, it is evident that the media played a crucial role in disseminating information and encouraging public compliance with health guidelines. This finding aligns with the assertions of Jianmo et al. (2024), and Wakefield et al. (2010), who emphasised the potential of media campaigns to effect population-level behavioural changes when messages are clear, repetitive, and reinforced by enabling environments.

The 20.3% of respondents who reported no behavioural change, coupled with the 31.7% who were unsure, underscores the subtle reality of media impact. This reflects gaps in message penetration, cultural relevance, or accessibility. Previous studies, such as Peters et al. (2020), indicate that media messages alone may not be sufficient to impact behaviour; structural barriers and socio-economic disparities must also be addressed. For example, lack of access to soap and water (16.3%), face masks (25.1%), and the difficulty of physical distancing (33.6%) cited in this study mirror global findings, such as those reported by Siegrist and Zingg (2014), which highlight the critical role of resources in bridging the gap between awareness and action.

The persistence of scepticism, as seen in 17.4% of respondents believing that COVID-19 is not a serious disease, underscores the challenge of combating misinformation. This is consistent with the findings of Vosoughi et al. (2018), who documented how misinformation spreads rapidly through media channels, creating barriers to public compliance. Nigerian-specific studies, such as Onyenankeya et al. (2021), have also noted that cultural beliefs and distrust in media often reduce the effectiveness of public health messages.

4.2.2 Practices Due to Mediated COVID-19 Messages

The findings contribute to a growing body of evidence supporting the significant impact of media on behavioural change in health crises. As documented in Wakefield et al. (2010), Chen et al. (2020), and more recently by Jianmo et al. (2024), and Kandpal and Dutta (2024), well-structured media campaigns are capable of initiating short-term changes in knowledge, attitudes, and practices. The Nigerian experience, reflected in this study, mirrors global trends but also highlights unique challenges shaped by socio-economic and cultural factors.

In Nigeria, the media industry has been both a source of empowerment and contention in public health communication. Onyenankeya et al. (2021) argued that while awareness and educative media campaigns were pivotal during the Ebola and COVID-19 outbreaks, their effectiveness was often limited by poor infrastructural support and a fragmented media environment. Similarly, findings from Edeoja et al. (2022) indicate that traditional media outlets and social media platforms require synchronised strategies to counteract misinformation and reach diverse populations.

Elsewhere, studies in India (Sarkar et al., 2020) and South Africa (Ndlovu & Mhlanga, 2021) highlight the transformative potential of media campaigns when coupled with grassroots initiatives and government backing. These contexts reinforce the argument that while media can drive awareness and initial behavioural change, sustained development outcomes require systemic integration of health communication with broader socio-political efforts.

4.2.3 Focus Group Discussions Data Presentation and Thematic Discussion

The Focus Group Discussions (FGDs) provided a significant understanding of the impact of COVID-19 prevention messages disseminated through the media on knowledge, attitudes, and practices in Kaduna, Kano, and Sokoto

states of North-West Nigeria. The discussions revealed diverse perspectives on the effectiveness of educative media campaigns, underscoring their impact while highlighting existing challenges.

4.2.4 The Role of Media Messages in Raising Awareness: Participants across all three states consistently recognised the media’s critical role in raising awareness about COVID-19 prevention. For instance, respondents from Kaduna attributed their understanding of preventive measures such as handwashing, sanitising, and physical distancing to media campaigns. Participants referenced platforms such as Facebook, Instagram, WhatsApp, and traditional outlets like radio and television, emphasising their wide reach during the lockdown. Participant KN2 from Kano reflected, “The media messages have played a significant role in raising awareness about COVID-19 prevention because it impacted children’s behaviour towards handwashing.”

Similarly, Sokoto participants praised the media’s extensive use of local languages and its ubiquitous presence during the pandemic, especially when other forms of interpersonal communication were curtailed. SKK10 noted, “The media messages played a significant role in raising awareness because there was no other way people could have been educated about the disease and its prevention.”

However, dissenting views emerged. KN5 from Kano highlighted infrastructural challenges, arguing that limited access to media technologies such as smartphones, radio, and television impeded the effectiveness of these campaigns. This concern mirrors findings from Nigerian studies, such as Onyenakeya et al. (2021), which noted the digital divide as a barrier to equitable access to health information.

4.2.5 Preventive Practices Promoted by Media: Participants frequently mentioned core prevention measures disseminated through the media, including handwashing, physical distancing, mask usage, staying at home, and sanitising. Additionally, practices like vaccination and symptom reporting were highlighted. These responses confirm that media campaigns successfully communicated comprehensive prevention strategies, aligning with global findings on the efficacy of health communication campaigns (Wakefield et al., 2010).

4.3 Thematic Discussion

4.3.1 Media Impact on Behavioural Change: The FGD data reflect significant development outcomes attributable to media impact, particularly in raising awareness and shaping behaviours during the COVID-19 pandemic. Participants’ narratives strongly correlate with the findings, which quantify behavioural changes and preventive practices. For instance, the 48% of respondents in (refer back to Table 1) who reported behavioural change mirrors the positive accounts from FGD participants who acknowledged adopting health measures like handwashing and mask usage due to media impact. Participant SKK9’s emphasis on platforms like Twitter and WhatsApp corroborates the high confidence reported in the data regarding media message accuracy (39.4% very confident, 38.4% somewhat confident).

Barriers to Media Effectiveness: Despite these successes, the FGDs highlighted persistent challenges, such as limited access to media technologies in rural areas and lingering scepticism. These barriers align with the data, which shows 20.3% of respondents reporting no behavioural change and 17.4% citing disbelief in COVID-19’s seriousness as a hindrance. Similarly, KN5’s concerns about media access reflect broader socio-economic disparities documented in Nigerian (Edeoja et al., 2022) and Indian (Kandpal & Dutta, 2024) research.

Sustained Practices and Long-term Impacts: The FGDs also indicated that some COVID-19 prevention measures, such as handwashing and mask usage, have endured beyond the immediate crisis, suggesting long-term behavioural change. This complements the results (refer back to Table 2), where a combined 47.1% of respondents reported regular mask usage (always and often), and 51.2% adhered to hand hygiene consistently. The sustained practices underscore the role of the media in nurturing habits that extend beyond the pandemic, as noted by Pellegrino et al. (2021), who argued that repetitive and culturally relevant media messages significantly impact health behaviour.

The findings from the FGD and quantitative data align with global and Nigerian studies on media impact during health crises. Wakefield et al. (2010) emphasised that mass media campaigns can promote behavioural change when combined with enabling environments. Similarly, Vosoughi et al. (2018) highlighted the dual role of media in spreading both critical health information and misinformation, necessitating careful content curation. In the Nigerian context, Onyenakeya et al. (2021) demonstrated that customised media messaging in local languages could bridge the gap in health communication, a point echoed by Sokoto participants who valued vernacular broadcasts.

Studies elsewhere, such as Sarkar et al. (2020) in India, corroborate the importance of multi-platform campaigns during pandemics, particularly when traditional and digital media are synchronised. This integrated approach, evidenced in North-West Nigeria, provides a template for addressing future public health challenges.

4.4 In-Depth Interview

4.4.1 Impact on Daily Practices

The in-depth interview (IDI) data provide compelling evidence that COVID-19 prevention messages disseminated through media significantly impacted individual behaviours and practices among professionals across Kaduna,

Kano, and Sokoto states. The responses align strongly with the quantitative findings (refer back to Tables 4.5 and 4.6) and the qualitative data from the Focus Group Discussions (FGDs), further reinforcing the developmental outcomes attributable to media impact.

Thematic Analysis: Participants unanimously acknowledged the role of media messages in shaping their behaviour. KD1 noted a profound impact on their safety habits, including avoiding crowded spaces, maintaining physical distancing, and consistent handwashing. KD3 further highlighted the impact of media on professional and personal practices, including counselling patients and adopting preventive behaviours such as frequent mask usage. These responses align with the results (refer back to Table 2), where a substantial proportion of respondents reported adopting preventive practices like wearing face masks (47.1% always or often) and maintaining physical distancing (45.8% always or often).

Similarly, KN4 reflected on how media-driven adaptations have transformed communication practices, shifting from physical meetings to remote platforms such as Zoom and WhatsApp. This shift indicates the broader societal impact of media in promoting behavioural changes beyond health practices, supporting development outcomes in organisational and professional contexts. SKK6's detailed account of wearing a face mask for extended periods demonstrates a deep internalisation of media messages, which underscores the sustained behavioural changes reported in the FGDs.

The thematic consistency across IDI and FGD data strengthens the argument for media-driven behavioural change. For example, SKK7 and SKK8 pointed to the role of continuous risk communication in reshaping daily activities, which echoes the FGD participants' accounts of adopting practices like handwashing and sanitising.

4.5 Integration of Quantitative and Qualitative Data

4.5.1 The Role of FGDs and IDIs in Understanding Public Perceptions

The IDI and FGD data complement the quantitative data (refer back to Tables 4.5 and 4.6), providing a holistic perspective on the research question regarding media impact. The results revealed that 48% of respondents changed their behaviour due to COVID-19 prevention messages, while the qualitative data provided detail information about the specific ways in which media impacted these changes. For instance, SKK5's emphasis on risk management behaviours, such as using gloves and hand sanitisers, aligns with the quantitative finding that 39.4% of respondents expressed high confidence in the accuracy of media messages. This indicates that trust in media content plays a pivotal role in translating awareness into action, a point also underscored in global research by Wakefield et al. (2010).

Barriers identified in the findings (refer back to Table 1), such as limited access to media or disbelief in COVID-19's severity, were also mirrored in some IDI responses. For instance, while participants generally acknowledged the positive impact of media, infrastructural and socio-economic challenges may have limited its reach in certain demographics, as highlighted by KN5 in the FGD data. These challenges are consistent with the findings of Edeoja et al. (2022), who noted that access gaps in rural Nigeria reduce the overall effectiveness of media campaigns.

The findings from the IDIs and FGDs align with past research on the role of media in driving behavioural change during health crises. Wakefield et al. (2010) emphasised that repetitive and clear messaging is essential for influencing population-level behavioural change, a principle validated by participants' consistent references to the effectiveness of media campaigns. The ability of media to sustain behavioural practices beyond the immediate crisis, as reported in the IDI (e.g., continued use of remote communication platforms), mirrors findings by Pellegrino et al. (2021), who highlighted the long-term impact of media on health behaviours.

In the Nigerian context, studies such as Onyenakeya et al. (2021) have demonstrated the transformative potential of culturally relevant and locally disseminated media messages. Participants' emphasis on local language broadcasts in Sokoto and the extensive use of social media platforms such as WhatsApp and Twitter validate these findings. Moreover, SKK6's account of sustained adherence to mask usage for extended periods reflects the success of targeted media campaigns in influencing habit formation, as also observed by Sarkar et al. (2020) in India.

Globally, Vosoughi et al. (2018) warned of the dual nature of media, which can propagate both accurate information and misinformation. However, the high confidence levels in media messages reported and corroborated by IDI participants like KD2 and SKK8 suggest that the Nigerian media largely succeeded in establishing credibility during the pandemic. This trust likely contributed to the widespread adoption of preventive measures.

Furthermore, FGDs and IDIs provided qualitative perceptions about the public's perceptions of COVID-19 media campaigns. Participants in Sokoto emphasised the role of local language radio broadcasts in increasing awareness, while those in Kano highlighted the impact of social media. However, qualitative data also revealed scepticism, with participants questioning the credibility of government-led campaigns. These findings align with quantitative results showing varying levels of trust in media messages, with 39.4% expressing high confidence and 22.2% expressing low confidence.

Quantitative surveys highlighted significant behavioural changes, with 48% of respondents reporting adopting new practices due to media messages. However, inconsistencies in compliance were noted, particularly in rural areas where 25% of respondents reported limited access to preventive resources (Edeoja et al., 2022). Integrating these findings with qualitative data underscores the need for multi-faceted campaigns that address both informational and structural barriers.

These findings reveal a notable variation in the perception of media trustworthiness, which impacts the effectiveness of health communication campaigns. It also suggests that while a significant portion of the population is receptive to media messages, a considerable percentage remains sceptical or unaware of the credibility of the information being presented. This highlights the need for enhancing the transparency and perceived reliability of media sources, particularly in times of health crises.

Moreover, qualitative data from Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) further support these findings. In Kano, participants noted the importance of consistent media messaging, but also pointed out that misinformation, especially on social media, contributed to confusion and reluctance to follow preventive guidelines. These views resonate with Vosoughi et al. (2018), who highlighted the rapid spread of misinformation through digital platforms, especially during public health crises. In contrast, Sokoto participants emphasised that local language broadcasts by radio and community health workers were crucial in reinforcing messages and increasing trust.

4.6 Summary of Key Findings

The study examined the impact of media content on behavioural change and development outcomes in the context of COVID-19 prevention in North-West Nigeria. The findings, derived from quantitative data, Focus Group Discussions (FGDs), and In-Depth Interviews (IDIs), highlight significant evidence of media-driven behaviour change, while also exposing barriers to effectiveness.

Behavioural Changes from Media Messages: Quantitative analysis revealed that 48% of respondents reported changing their behaviour due to COVID-19 prevention messages disseminated through the media. This demonstrates the media's crucial role in shaping public health practices. FGDs and IDIs provided qualitative data, providing detail information about specific behavioural adjustments such as handwashing, mask usage, and physical distancing. Participants also reported adopting new professional practices, such as remote communication, impacted by media campaigns.

Public Knowledge and Attitudes: The study found that respondents in North-West, Nigeria possess significant knowledge of COVID-19 prevention messages disseminated through various media channels, including social media, radio, and television. This indicates effective media dissemination. The public largely acknowledges the seriousness of COVID-19, reflecting an overall recognition of the severity of the disease.

Practices toward Preventive Measures: The data showed varied adherence to preventive practices: 47.1% of respondents consistently wore face masks, while 51.2% adhered to handwashing routines. However, inconsistent compliance with physical distancing (33.3% sometimes and 15.7% rarely) underscored gaps in sustained adherence. The qualitative findings highlighted similar patterns, with participants reporting increased but imperfect adoption of recommended practices.

Public Practices and Media Impact: Respondents reported engaging in diverse preventive practices, such as washing hands with soap and water, maintaining physical distancing, and wearing face masks in public. The media played a crucial role in disseminating this information, which has led to behavioural changes in a significant portion of the population. However, some respondents did not alter their behaviours, suggesting the need for improved communication strategies to enhance compliance.

Confidence in Media Messaging: Trust in media content was high, with 39.4% of respondents expressing strong confidence and 38.4% moderately confident in the accuracy of COVID-19 messages. This trust facilitated compliance with preventive measures, as participants in both FGDs and IDIs frequently cited media as their primary source of reliable health information.

Role of Media in Sustaining Long-Term Practices: FGDs and IDIs identified long-term behavioural changes, such as the continued use of masks, hand sanitisers, and remote communication tools, as key outcomes of media campaigns. This aligns with global research on the enduring impact of well-crafted and consistent health communication strategies.

Use of Diverse Media Platforms: Participants acknowledged the role of traditional media (radio, television, and newspapers) and digital platforms (WhatsApp, Facebook, Twitter) in disseminating COVID-19 messages. The integration of local languages and similar efforts ensured that media messages resonated across diverse socio-cultural contexts, enhancing their reach and effectiveness.

Barriers to Behaviour Change: Despite the media's impact, 20.3% of respondents reported no behavioural change, and 31.7% were uncertain. Barriers included limited access to media, scepticism about the seriousness of COVID-19, and socio-economic constraints such as the unavailability of masks and sanitisers. These barriers were corroborated by FGDs, where participants from rural areas highlighted infrastructural challenges that impeded the

reach and effectiveness of media campaigns.

Professional Adaptation and Risk Management: The IDI data highlighted professional adaptations prompted by media campaigns. Health workers reported improved patient counselling and personal risk management, while other professionals adopted remote work practices, showing the broader societal impact of media impact.

5. Conclusion

This study confirms the significant role of media in impacting public behaviour and driving development outcomes during health crises, using COVID-19 prevention in North-West Nigeria as a case study. Quantitative and qualitative data revealed that media campaigns positively impacted knowledge and practices, with 48% of respondents reporting behavioural changes. Practices such as handwashing and mask usage were widely adopted, but inconsistencies in adherence and persistent barriers, including limited media access and socio-economic challenges, were evident.

Despite its strengths, the study has limitations. The reliance on self-reported data may introduce bias, and the exclusion of some rural areas limits generalisability. Future studies should adopt longitudinal designs and include underrepresented communities to provide more comprehensive understandings.

The findings highlight the need for multi-faceted health communication strategies. Policymakers should integrate media campaigns with infrastructural support, ensuring access to preventive resources like soap and masks. Addressing misinformation through culturally sensitive messages in local languages can further enhance public compliance. This holistic approach is essential for maximising the impact of media in public health interventions.

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Conflict of Interest

The authors declare no conflict of interests.

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